# BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT.

# A MINING PERMIT APPLICATION FOR COAL AND GENERAL CLAY ON PORTION OF PORTION 11 OF THE FARM LEEUWENFONTEIN 284 IR, SITUATED IN THE MAGISTERIAL DISTRICT OF NIGEL, GAUTENG PROVINCE.

PREPARED FOR:



ATOK MINING HOUSE (PTY)

# **COMPETENT AUTHORITY**

Department of Mineral Resources & Energy: Regional Office 78 De Korte Street 1<sup>st</sup> Floor Mineralia Building Braamfontein, 2017



DMRE REF: GP 30/5/1/3/2/10480 MP PREPARED BY: PREPARED BY: PREPARED BY: PREPARED BY: PREPARED BY: PREPARED BY: Pretoria, 0184 Te: 081 388 1187 Email: admin@moepathutsiges.co.za



# 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 ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT: Atok Mining House (Pty) Ltd TEL NO: 083 672 3017 FAX NO: 086 270 7202 POSTAL ADDRESS: P.O Box 557 Rosslyn, 0200

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FILE REFERENCE NUMBER SAMRAD: GP 30/5/1/3/2/10480 MP

# 1. IMPORTANT NOTICE

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

Unless an 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 a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable, or instructions or guidance provided by the competent authority to the submission of applications.

It is, therefore, an instruction that the prescribed reports required in respect of applications for 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 Authorisation being refused.

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

# 2. Objective of the basic assessment process

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

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy 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 managed and monitored.

# **Executive Summary**

Moepathutsi Geo-Environmental Solutions (Pty) Ltd is an independent environmental consultant. The consultant was appointed by Atok Mining House (Pty) Ltd to undertake the Environmental Authorization application process and to conduct the Public Participation Process for the proposed mining permit. The application is on portion of Portion 11 of the farm Leeuwenfontein 284 IR, situated in the magisterial district of Nigel in the Gauteng Province. The total area of the project area is approximately 5 hectares and is located about 15 km northeast of Nigel and 17 km west of Devon, along N17 towards Springs.

### Legislative Requirements

The following is a list of the most significant legislations that apply to the planned project:

- National Environmental Management Act (No. 107 of 1998) [as amended] Section 28: Duty of Care and responsibilities to minimize and remediate environmental degradation.
- EIA Regulations, 2014 (Government Notices 982) [as amended]

The EIA regulations prescribe the manner and content of the Basic Assessment and Public Participation Processes to be followed as well as the content of the Environmental Management Programme.

• Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) [as amended] To apply for a mining permit, an application was submitted to the Department of Mineral Resources' Samrad online application system.

The proposed mining activities will be carried out in stages over a period of two years, using invasive and non-invasive methods. Desktop research and geological mapping will be non-invasive procedures, with mining (excavating, blasting) and sampling constituting invasive methods.

The potential risks and key issues identified were based on consultation with I&APs, internal processes based onsimilar projects and the current state of the environment of the site. The report includes a description of the bio-physical and social context to ensure that all potential risks and hazards are considered at all stages of the proposed project. The following is a brief description of the potential components that will be impacted:

- Fauna
- Flora
- Surface water
- Ground water
- Geology
- Soils
- Air quality
- Culture and heritage

- Traffic
- Socio-economic

### **Specialist Studies**

The following specialist studies are being conducted:

- Hydrological Assessment
- Archeological and Cultural Heritage Impact Assessment

The primary goal of the specialist studies is to offer objective, factual information on topics of concern pertaining to the project proposal and to suggest management and/or mitigation strategies for difficulties found.

### Reasoned opinion of the EAP

The EAP believes that the proposed mining should be permitted because the results of the Basic Impact Assessment, the project projects highly positive social and economic effects on the local and regional communities. If the mitigative measures are carefully implemented and are being closely observed, the possible negative consequences can be reduced to levels of low to negligible significance. The Environmental Management Programme (PART B of this report) contains mitigation measures and recommendations from specialists, which will be stringently followed.

### **Recommendations**

The suggestions from the BAR are incorporated into the Environmental Management Programme Report (EMPR) in order to attain adequate environmental management standards and guarantee that the outcomes of the environmental studies are implemented through physical measures. All the information in this report and all the reports from the specialists are the foundation for the EMPR.

The Basic Assessment Report and Environmental Management Programme Report were compiled in terms of the EIA Regulations of 2014 (amended, April 2017).

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# **ABBREVIATIONS**

BAR	Basic Assessment Report
СА	Competent Authority
СВА	Critical Biodiversity Area
CoJ	City of Johannesburg
CoE City of Ekurhuleni	
CSA	Constitution of South Africa (Act No.108 of 1996)
DAFF	Department of Agriculture, Forestry and Fisheries
DEFF	Department of Environmental, Forestry and Fisheries
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
EA	Environmental Authorization
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPR	Environmental Management Programme Report
ESA	Ecological Support Area
GDARD	Gauteng Department of Agriculture and Rural Development
GEMF Gauteng Environmental Management Framework	
GN	Government Notice
GIS	Geographic Information System
I&APS	Interested & Affected Parties
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
LML	Lesedi Local Municipality
MHSA	Mine Health Safety Act (Act No.29 of 1996) [as amended]
MPRDA	Mineral and Petroleum Resources Development Act (Act No.28 of 2022) [as amended]
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998) [as amended]
NEMAQA	National Environmental Management: Air Quality Act (Act No.39 of 2004)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act (Act No.59 of 2008) [as amended]
NHRA	National Heritage Resource Act, 1999 (Act No.25 of 1999)
NWA	National Water Act, 1998 (Act No.36 of 1998) [as amended]
PPP	Public Participation Process
SAHRA	South African Heritage Resources Agency

# PART A

# SCOPE OF ASSSSMENT AND BASIC ASSESSMENT REPORT

### 1. Contact Person and correspondence address.

### a) Details of

### i) Details of the EAP

Name of practitioner:	Moepathutsi Geo-Environmental Solutions (Pty) Ltd
Tel No:	+27 81 388 1187
Fax No.:	086 270 7202
E-mail address:	admin@moepathutsiges.co.za

### ii) Expertise of the EAP.

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

National Diploma: Geology (Geology, Geotechniques, Geophysics & Hydrology)	Tshwane University of Technology
Bachelor of Technology: Geology (Engineering Geology, Applied Hydrology, Mining & Exploration)	Tshwane University of Technology

### 2. Summary of the EAP's past experience.

Miss Boipelo Motlhatlhedi is an Environmental Assessment Practitioner with extensive experience in a widerange of environmental related projects, processes, and applications. She holds a BTech in Geology with over 3 years in the industry. She has undertaken environmental compliance (including basic assessments, mining permit applications, Water Use License applications, prospecting right applications) and public participation processes. Please refer to APPENDIX H for Boipelo's CV which illustrates her competence in carrying out the EIA process.

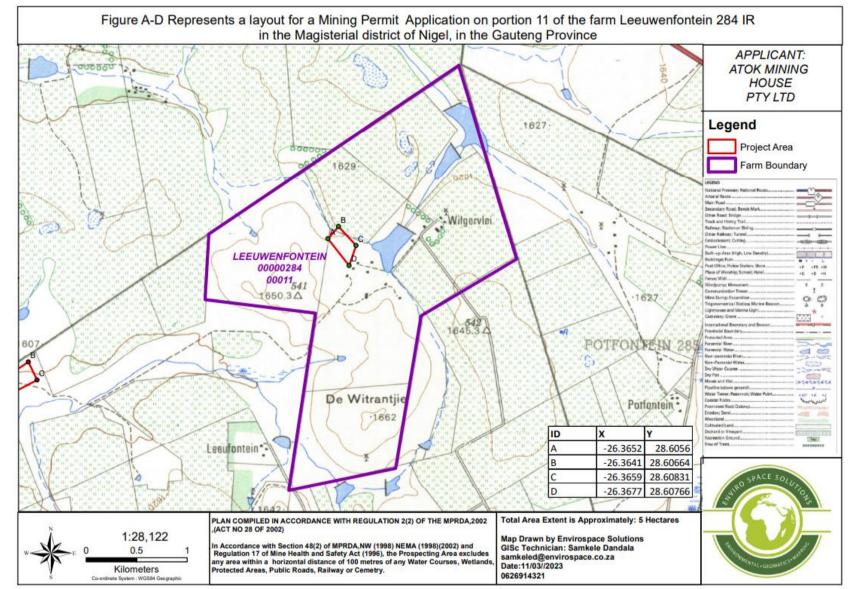
# a) Location of the overall Activity.

Farm Name:	Portion of portion 11 of Leeuwenfontein 284 IR	
Application are (Ha)	Approximately 5 Hectares	
Magisterial district:	Nigel	
Distance and direction from the	The proposed mining area is located approximately 15 km northeast of Nigel and	
nearest town	17 km west of Devon, along N17 towards Springs.	
21-digit Surveyor General Code for		
each farm portion	T0IR000000028400011	

# b) Locality map



Figure 1: Locality map for the proposed project area.



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

Figure 2: Regulation map showing the location and size of the miningarea.

# (i) Listed and specified activities

<ul> <li>NAME OF ACTIVITY</li> <li>(E.g. For mining- drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc</li> <li>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, etcetc)</li> </ul>	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 324, GNR 325 or GNR 327)	Waste Management Authorization (Indicate whether an authorization is required in terms of the Waste Management Act) (Mark with an X)
Project Area	5 Ha	×	GNR 327, April 2017 (Listing Notice 1)	
Vegetation Clearing	3 Ha	Not listed	,	Not required
Topsoil removal	0.5 Ha	X	GNR 327, April 2017 (Listing Notice 1)	
Stockpiling of overburden	0.1 Ha	Not Listed		
Site camp	100 m <sup>2</sup>	Not listed		
Ablution facilities	30 m <sup>2</sup>	Not Listed		
Accommodation		Not Listed		Not required
Sample storage		X	GNR 327, April 2017 (Listing Notice 1)	
Equipment storage	0.05 Ha	X	GNR 327, April 2017 (Listing Notice 1)	
Temporal site offices	40 m <sup>2</sup>	X	GNR 327, April 2017 (Listing Notice 1)	
Access roads	300 m <sup>2</sup>	X	GNR 327, April 2017 (Listing Notice 1)	

# (ii) Description of the activities to be undertaken

Atok Mining House (Pty) Ltd intends to mine coal on portion of portion 11 of the farm Leeuwenfontein 284 IR, situated in the magisterial district of Nigel in Gauteng province. The proposed project entails the removal of topsoil and overburden, excavation, blasting, stockpiling, loading, hauling, processing, and transportation. Please refer to Table 2 for equipment that will be used for the proposed mining project.

### Mining Method Statement to be used for the proposed project.

In terms of NEMA regulations and requirements stipulated by the DMRE, through the BAR and EMPr template, Atok Mining House (Pty) Ltd must describe the methods and technology to be used for the proposed mining project. In light of the aforementioned, a method statement has been supplied for each stage of the proposed project below. This lists all actions, procedures, or activities related to the proposed mining operation.

### Specific activities to be undertaken.

Specific activities that will be undertaken during the life of the project will include:

- o Removal of topsoil and overburden,
- Excavation of coal and stockpiling it in front of the open-cast mining, with bulldozers and front-end loaders,
- o Blasting of the hard silica deposit, excavating, and stockpiling it,
- Loading, Hauling, processing, and transporting the coal to the mine market,
- The overburden will be stockpiled separately from the topsoil and the waste rock, if any;
- Maintaining a continuous backfill of waste rock, overburden, and topsoil into the opencast void, followed by fertilization and re-vegetation with native grass, shrub, and tree species;
- All equipment must be decommissioned and removed, as well as all supporting structures. The opencast quarry must be backfilled, the former operation area must be made safe, the areas must be shaped to be free draining, and they must be restored to a state suitable for grazing or game farming.

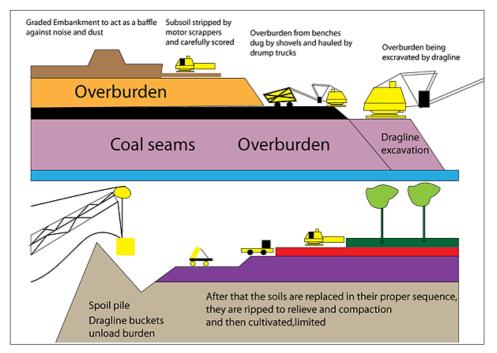


Figure 3: Schematic diagram showing the process of open-cast mining.

Table 2: Equipment to be used or needed for the propo	osed mining operations.
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Equipment and/or technology to be used.	Excavator
	Bulldozer
	Front-end loader
	Water cart
	4x4 Bakkies
	Generator
Materials required.	Diesel and grease
	Hydraulic oil
	Picks and Shovels
Storage facility	Diesel, grease, and oil
Spillage control	Dip trays
Sanitation facility	Chemical toilets
Waste management	Waste bins
Water	Water will be transported to site
Safety	Safety boards and PPE

### Description of the proposed mining project Surface infrastructure.

o Access roads

The main road that will be used to access the proposed mining project area is the existing provincial road, R550. Authorities will be informed of the road to be used where required and landowners of private farms will also be asked permission to use their roads. The accumulative traffic impact mainly due to mine trucks from the mines within the area will be taken into consideration.

Excavators and bulldozers, among other mining machinery, will be kept on site as long as they are still functional. Over the course of the mine's operation, more double cab bakkies will be used as everyday mining transportation. To prevent the site's dense traffic network of cars, local workers will be hired. Water carts will be utilized to sprinkle water on the gravel mine roadways during the mine's lifespan to suppress dust. There will be no new roads built; just the current agricultural tracks and roads will be utilized.

### o <u>Powerlines</u>

The National Grid's power infrastructure won't be impacted, and the proposed mining project won't need any electricity from it. For the proposed project, only diesel-powered vehicles and equipment will be employed.

### o <u>Water infrastructure</u>

There is no planned water infrastructure for the proposed project because of the amount of water needed and how it will be used throughout the operation of the mining activities, which is anticipated to be 1090 cubic meters per year. When feasible, water will be obtained from nearby mines; otherwise, it will be purchased from other commercial providers (i.e the local Municipality). Water will be trucked by a water cart to the project area (mine site). Service water, potable water, and fire protection water will all be provided by this water. For the purpose of operating machinery and dust suppression, service water will be needed. For domestic water use within the mining sites, a potable water supply will be needed. Fire water will be required for firefighting purposes. A water tank will be used for water storage at the proposed project area.

### • Workshops and buildings.

There are no building structures on site. Mobile offices will be installed in the proposed mining area. An offsite workshop will be used to maintain all equipment. Should urgent repairs be necessary, they will be carried out right there on tarp-covered surfaces.

### o Waste management.

### a. Identification of waste and management

Hazardous waste:

- Hazardous waste to be generated includes hydrocarbon wastes (oil and liquid fuel wastes);
- Used oil bottles and containers from mining equipment and automobiles are included in oil waste and liquid fuel waste;
- Mineral waste will be kept on the property and used as rehabilitation materials;

- Drums of 210 litres will be used to collect and store hydrocarbon waste. The drums will be positioned on a safe surface. A waste management business will remove the drums or any other suitable container, and dispose of it at a registered, permitted trash disposal site. Certificates of waste disposal shall be preserved.
- To control the sewage waste produced on the property, chemical toilets will be employed.

### General waste:

- General waste to be generated from the proposed project area include domestic waste such as food (leftovers), polystyrene, paper, and abandoned personal protective equipment (PPE).
- This waste will be gathered in 210L containers that are clearly marked and disposed of at a licensed landfill site that is closer to the proposed location.
- A certificate of disposal will be kept as evidence of appropriate disposal.

# e) Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT. (E.g., In terms of the National Water Act a Water Use License has/ has not been applied for)
Constitution of the Republic of South Africa, 1996.	Throughout the proposed development's operational and decommissioning phases	Rights of all personnel who are directly or indirectly involved in the project has been respected and theirconcerns attended to during public consultation.
National Environmental Management Act, 1998 (107 of 1998)	The proposed development is included in GNR 327 Listing Notices 1 during the project's planning phase. Number 20 is triggered.	This is the key national legislation in South Africa that governs environmental authorizations. A Basic Assessment has been requested under NEMA. There is an effect assessment included, as wellas mitigation strategies and recommendations.
Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002)	A Mining Permit is required by the Department of Mineral Resources for any mining activities.	A Mining Permit Application has been submitted to the DMRE by the EAP (GP 30/5/1/3/2/ (10480 MP). The application was accepted by the DMRon the 24 April 2023.
National Water Act, 1998 (Act 36 of 1998)	Due to the nature of the proposed mining activities Section 21 water uses will be triggered, therefore an application for a Water Use authorization in terms of the NWA is underway.	In terms of the National Water Act, a Water Use License is being applied for.
National Environmental Management Act: AirQuality Act, 2004 (39 Of 2004)	Basic Assessment Report & Environmental ManagementPlan.	Dust suppression techniques must be used to reduce dust emissions from site clearing, soil stripping, and building activities (including vehicle entrained dust).
National Heritage Resources Act, 1999 (Act25 of 1999)	Should there be any cultural and heritage resources discovered, they ought to be protected and reported to relevant specialists.	If identified cultural/heritage sites on the planned site will be disturbed or destroyed as a result of the prospective mining activities, permission to proceed may be required.

# f) Need and desirability of the proposed activities.

The proposed mining endeavour recognises coal as a good energy source due to its cheap and yet efficient extraction. As such, coal is one of the five minerals selected by the DMR for local beneficiation as it is considered critical to South Africa's on-going development (DMR, 2011). Of all primary energy sources in South Africa, coal has a consistent lead as a prevalent source of power. Not only is more than 90% of the country's electricity produced from coal, approximately 30% of the liquid fuel is also produced from the mineral (DoE, 2016). Additionally, coal plays a significant role in supply to the South African chemicals industry and is an essential component of its steelmaking industry. Despite the country's attempts at diversifying energy, coal is expected to play a major role in the foreseeable future, and it is the leading mining commodity revenue generator in South Africa.

A study conducted by Swisscontact, 2017 in collaboration with CBA (Clay Brick Association of Southern Africa) indicated that South Africa is by far the largest producer of Clay Bricks. The country contributes more than 70% of the overall manufacturing capacity of the region. 3.6 billion bricks per annum are manufactured in the country, with the remaining 1.4 billion is made up of the rest of the SADC region. Of the 150 formal clay brick factories, 100 are in South Africa. Evidently, mining of clay promotes an industry that creates formal and informal job opportunities in the country.

Furthermore, the mining project will assist Lesedi Local Municipality in implementing the 2021/2022 Integrated Development Plan, which aims to address the area's major challenges, including housing and road infrastructure. The project will have broader socioeconomic benefits, including as job creation, skill development, local economic growth due to the availability and affordability of coal, and enhanced company development in the region.

Lastly, the applicant (Atok Mining House (Pty) Ltd) pledges to make sure that they will support employee welfare and environmental education during the project's duration. The job that could be hazardous to their health and the environment, as well as any task that could be dangerous, will be made known to the personnel. This is done in accordance with the Mine Health and Safety Act of 1999 (Act 25 of 1999) and its rules, which provide workers the option to decline hazardous tasks. The applicant is committed to protecting employees from any hazardous working environment and will respect any decisions made by employees regarding the aforementioned.

# g) Motivation for the overall preferred site, activities and technology alternative.

The effectiveness of the Basic Assessment process hinges on the discovery of alternatives. To decide the most appropriate alternatives to consider in this application, all rational and feasible alternatives must be found and screened. There are, however, certain limitations that must be considered when defining project alternatives based on the scope. Such constraints include financial, social and environment related constraints. Alternatives can typically be identified according to:

- Activity alternatives
- Location alternatives
- Design or layout alternatives
- Technology alternatives
- Operational alternatives
- No-Action alternative (No-Go)

To be considered feasible, any alternative must satisfy the need and objectives of the development plan while posing a substantial risk of negative consequences. Usually, alternatives are divided into discrete and gradual options. Discrete alternatives are long-term planning solutions that are found during the pre-feasibility, feasibility, and/or Basic Assessment phases.

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

### alternatives within the site.

### (i) Details of the development footprint alternatives considered.

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

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

Atok Mining House (Pty) Ltd applied for mining permit on portion of the 11 of the farm Leeuwenfontein 284 IR to extract coal. The location alternative considered for the proposed project includes the mining site and access routes. The location alternatives were selected based on several criteria, which include the environmental considerations (how sensitive is the area in terms of soils, groundwater etc.) and the dependency of the project to the required infrastructure.

### (b) the type of activity to be undertaken.

Depending on the depth and quality of the coal, the most cost-effective approach (strip and horizon mining method) of coal extraction from coal seams will be used. These are the chosen activities since the technology to be employed cannot be replaced by any other techniques.

### (c) the design or layout of the activity.

The proposed layout for the coal mining operation will follow the sketch plan for the infrastructure. There will be a single entrance accessible via the R550 road, mine/gravel roads, and the present access gravel road. Additionally, two (2) sections of dumps and coal stockpile will be located just outside the mining pit. The personnel will use a movable site office and a portable chemical restroom located inside the mobile offices. To have the least amount of impact, the site will be scaled back.

### (d) the technology to be used in the activity.

Front-end loader and excavator methods and/or the drilling, blasting, loading, and transporting system are the only feasible ways to mine coal. As a result, no other input possibilities were considered. It has been decided that using a front-end loader and excavator is the only technologically superior approach to carry out the suggested operations.

Since the front-end loader and excavator will be used, and since these tools require energy like gasoline and diesel to operate, the best course of action will be to employ currently available energy for the planned project's operation. Generators will be used to power the everyday operations of the offices for the mining operation. Given the foregoing, no other input materials for this project were taken into consideration.

#### (e) the operational aspects of the activity.

The mining area must be clearly demarcated (Working Areas and No-go Areas), by means of pegs/markers at all corners of the site and along its boundaries (where practical). Permanent pegs/markers must be firmly erected and maintained in their correct position throughout the life of the operation.

#### Working areas

- Work zones and "no-go" zones for the Site must be designated on the appropriate plans for reference.
- Working areas are those places where mining site works must be built in accordance with the mining permit.
   <u>No-go Areas</u>
- No-go' areas are generally those large areas outside the designated working areas, and may include, but not be limited to:
- Wetlands and watercourses.
- Existing services and infrastructures e.g., overhead powerline towers and bridge pylons.
- Any heritage sites that receive protection from the Provincial Heritage Resources Authority (Gauteng).
- Natural or special features as defined in the Environmental Specifications.

### (f) the option of not implementing the activity.

The "no-go" alternative entails not using the project site for mining permit activities. The no-go alternative supposes the place stays in its present condition. There would be no effects on the social and biophysical environment if the no-go option were chosen.

The Project Manager and Safety Officers are responsible for clearly delineating all "no go" areas and enforcing the prohibition on unauthorized entry, littering, stockpiling, dumping, and storing goods or equipment there. A region must be deemed a "no go" area once mining operations there have been concluded and the area has been restored and replanted.

### (ii) Details of the Public Participation Process Followed

This section of the report gives a summary of the tasks that have been completed so far as part of the Public Participation Process (PPP). The PPP was carried out in accordance with NEMA Chapter 6.

### **Public Participation Methodology**

The Public Participation Process (PPP) is a requirement of several pieces of South African Legislation and aims to ensure that all relevant Interested and Affected Parties (I&APs) are consulted, involved and their opinions are considered and a record included in the reports submitted to Authorities. The process ensures that all stakeholders are provided this opportunity as part of a transparent process which allows for a robust and comprehensive environmental study. The public participation process undertaken was done in accordance to Regulation 39 - 44 of the EIA Regulations, 2014 (amended) summarized below:

- a) erecting a notice board at the site's perimeter, on the fence, or along the corridor where the activity to which the application or prospective application pertains is or will be carried out, in a visible and accessible location to the public.
- b) sending written notice to the other party in any of the ways specified in section 47D of the Act to;
  - (i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity will be carried out, the owner or person in control of the site where the activity will be carried out and any alternative site where the activity will be carried out;
  - (ii) landowners, persons in control of, and occupiers of land next to the site where the activity is or will be carried out, as well as any alternate site where the activity will be carried out;
  - (iii) the municipal councilor for the ward in which the site and alternate site are located, as well as any ratepayer organization that represents the local community;
  - (iv) the municipality which has jurisdiction in the area;
  - (v) any government organ with control over any aspect of the activity; and
  - (vi) any other party as required by the competent authority;
- c) placing an advertisement in a local newspaper.

The objectives of PPP include:

- Allows interested and affected parties (I&APs) to express their support, express their concerns, and ask questions about the project, application, or decision;
- Provides a chance for I&APs, Environmental Assessment Practitioners (EAPs), and the

Competent Authority (CA) to gather clear, accurate, and intelligible information regarding the proposed activity's or decision's environmental, social, and economic impacts;

- Allows I&APs to make suggestions for lowering or neutralizing negative effects of an activity, as well as promoting favorable effects; and
- Allows the applicant to include the needs, preferences, and values of those who will be affected in the application.

### Identification of I&APs

The IAP database was compiled containing the following categories of stakeholders;

- Local Authorities
- Provincial Authorities
- Government departments
- State-owned companies
- Other organizations, communities, and unions.

### List of key stakeholders identified.

- Landowners Mr Kenneth Ndlovu
- Owners and occupiers of the land and mines adjacent to the proposed project site
- Lesedi Local Municipality
- Gauteng Department of Agriculture, Environmental Affairs, Rural Development and Land Reform
- Organs of state having jurisdiction in respect of any aspect of the proposed activities

The PPP began on the 4<sup>th</sup> of May 2023. Consultation emails were sent to different government stakeholders, landowners as well as other Interested and Affected parties. Site assessment that involved posting site notices around the different farms' fences was done. The registration period began in May 2023 and will end in June 2022. Refer to APPENDIX E for proof of consultation.

- Advertisement in the newspaper "Heidelberg/Nigel Heraut" for the week of 17 May 2023 (see Figure 4).
- Site Notices were erected at prominent points throughout Nigel on 11 May 2023; and
- Public Notices were distributed to identified stakeholders, landowners, and residences (where possible) on the 11<sup>th</sup> of May 2023 and throughout the registration period.

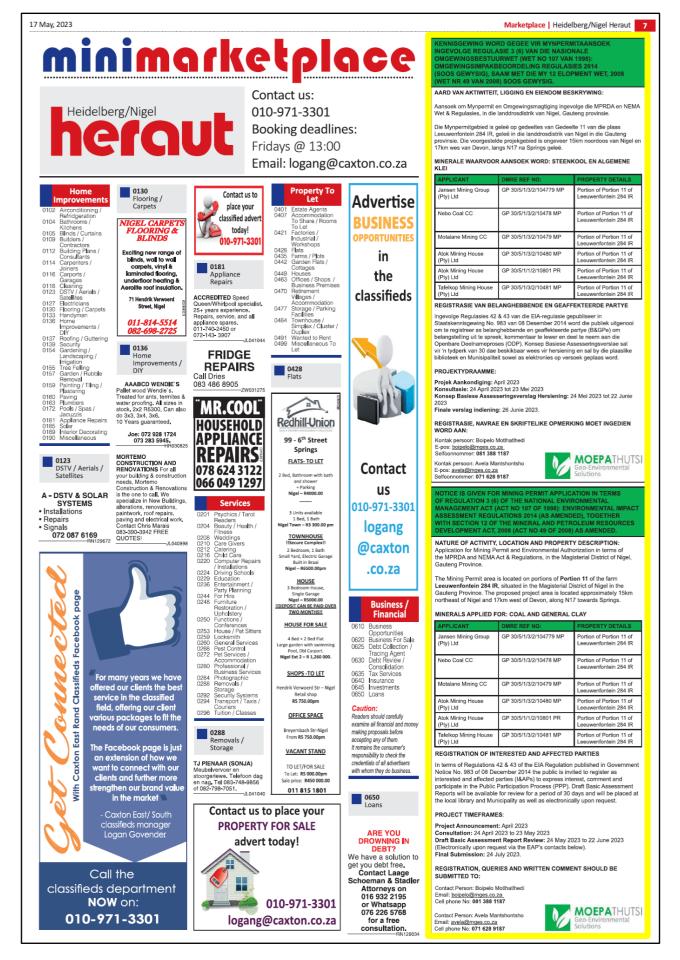


Figure 4: Proof of newspaper advertisement in Heidelberg/Nigel Heraut (yellow rectangle).

# (iii) Summary of issues raised by I&Aps

Interested and Affected Parties		Date	Issues raised	EAPs response to issues as mandated by	Section and
		Comments		the applicant	paragraph
List the names of persons consu	lted	Received			reference in this
in this column, and					report where the
Mark with an X where those v	vho				issues and or
must be consulted were in	fact				responsewere
consulted.	laot				incorporated.
AFFECTED PARTIES					
Landowner/s					
National Government of South Africa		29/05/2023	confirmed that it is the Department of Labour. Upon being notified of the prospective project, the Department of Labour acknowledged receipt of the notification but expressed no knowledge of ownership of the property. However, they did give word to look into the matter.	Further investigation is to be made by the EAP.	Refer to APPENDIX D.
Mr. Kenneth Ndlovu/Puleng Ndlovu	X	29/01/2023	N/A	A consultation email accompanied by the BID was sent to Mr Puleng (son and representative of landowner) to notify him of the prospective project. Mr Puleng acknowledged receipt of the notification via phone call and was registered as interested party as requested.	Refer to APPENDIX D.
Lawful occupier/s of the land		1			
N/A					
Landowners or lawful occupiers on a	adjace	ent properties			
Mr. Buthelezi	X	29/09/2023	A consultation email accompanied by a BID was sent to Mr. Buthelezi to notify him for the prospective project.	tNo response has been received yet.	Refer to APPENDIX D
Municipality					

Lesedi Local Municipality	X	04/05/2023	N/A	A consultation email accompanied by the BID was sent to the local municipality. No response has been received yet.	Refer to APPENDIX E.
Ekurhuleni Metropolitan Municipality		04/05/2023 29/05/2023	N/A	sent to the metropolitan municipality. No response has been received yet.	Refer to APPENDIX E.
Organs of state (Responsible for infras			fected Roads Department, Eskom, Telkom, DWA		
Department of Forestry, Fisheries and Environment. forestry, fisheries & the environment Department: Forestry: Fisheries and the Environment REPUBLIC OF SOUTH AFRICA	X	29/05/2023	N/A	Consultation email together with the BID attached, was sent to the department. No response has been received yet.	Refer to APPENDIX E.
Department of Water and Sanitation.		04/05/2023 29/05/2023	No issues raised. The department has acknowledged receipt of the notification of the proposed project with word to revert soon after assessing the BID.	A consultation email accompanied was sent to the department.	Refer to APPENDIX E.
Department of Agriculture, Forestry and Fisheries. agriculture, forestry & fisheries Department: Agriculture, Forestry and Fisheries REPUBLIC OF SOUTH AFRICA	X	29/05/2023	N/A	Consultation email together with the BID attached, was sent to the department. No response has been received yet.	Refer to APPENDIX E
Department of Public Works and Infrastructure. www.infrastructure Public works public works Publ	X	29/05/2023	N/A	Consultation email together with the BID attached, was sent to the department. No response has been received yet.	Refer to APPENDIX E.

Х				Refer to APPENDIX E.
		acknowledged receipt of the notification of the		
			ine proposed project area.	
	• 			
	x		acknowledged receipt of the notification of the	acknowledged receipt of the notification of the proposed project with word to revert soon after the proposed project area.

# (iv) The Environmental attributes associated with the alternatives.

### 1) Baseline Environment

This section describes the baseline receiving environment of the proposed mining area. The information in this section is based on EAP's desktop research, a site visit, and public feedback via the I&AP consultation. As a result, the environmental feature descriptions below are a compilation of pertinent information for the application area.

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

### Topography

Most of the research area is located in the Moot Plains Bushveld, where the average elevation is from 1050 to 1450 mamsl, while a tiny portion of the study area is located in the Gold Reef Mountain Bushveld, where the average elevation ranges from 1200 to 1750 mamsl. The project area's topography is characterized by its flat terrain with an elevation ranging from 1620 to 1625 mamsl as shown in Figure 5 below.

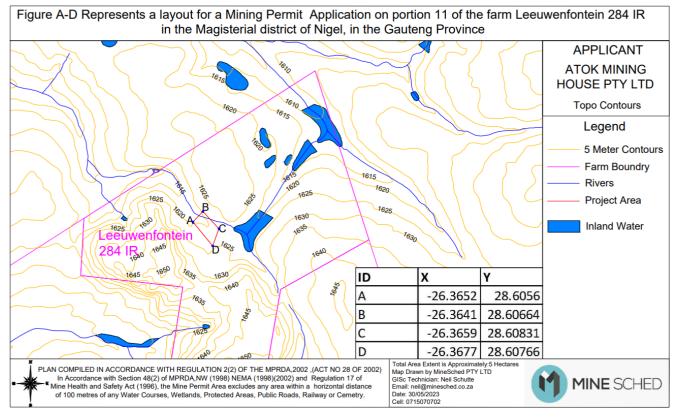


Figure 5: Topography map for the proposed project area.

# Geology

Figure 6 below illustrates the geological units that were recorded to be underlying the project area. It is clear that the lithostratigraphic unit, the Ecca Group, the second of the main groups of the Karoo Supergroup, is present beneath the project area.

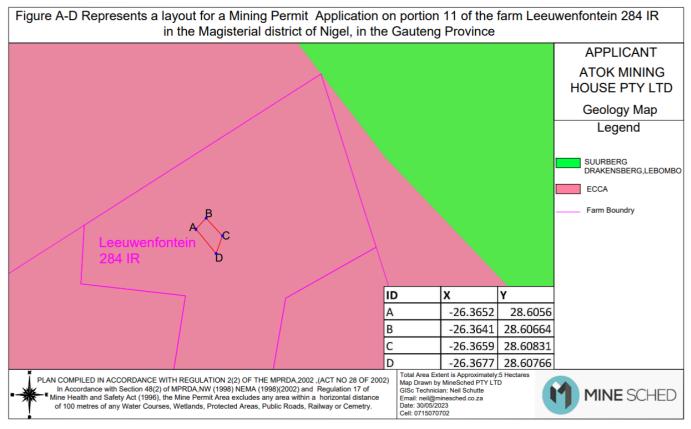


Figure 6: Geology map for the proposed mining area.

# Karoo Supergroup

The sedimentary part of the Karoo Supergroup is subdivided into four main lithostratigraphic units, which from the base up are the Dwyka, Ecca, Beaufort and Stormberg (Molteno, Elliot and Clarens formations) groups (SACS, 1980; Johnson et al., 1996). These are capped by some 1.4 km of basaltic lavas of the Drakensberg Group (Veevers et al., 1994; Johnson et al., 1996), the extrusion of which is related to the break-up of Gondwana (Cox, 1992). The basement to the Karoo Supergroup fills in both the MKB and in the northern basins is heterogeneous (Hancox, 1998; Bordy et al., 2004a; Rutherford, 2009) and this heterogeneity plays a significant control on the nature of the fill, particularly during the early phases of the deposition of the Karoo Supergroup. The main crustal scale blocks for the MKB are shown below in Figure 6. Most of the coalfields discussed occur on the Wits block of the Kaapvaal Craton. Since the coalfield so f South Africa occur over such a vast area, the nature of the basement lithologies differ considerably from coalfield to coalfield and as such are described below individually for each coalfield. An understanding of the basement lithologies is important for interpreting the nature of pre-conditioning prior to the onset of Dwyka glaciation, which provides an important control on the sedimentary fill of the lower parts of the Karoo Supergroup.

### Ecca Group

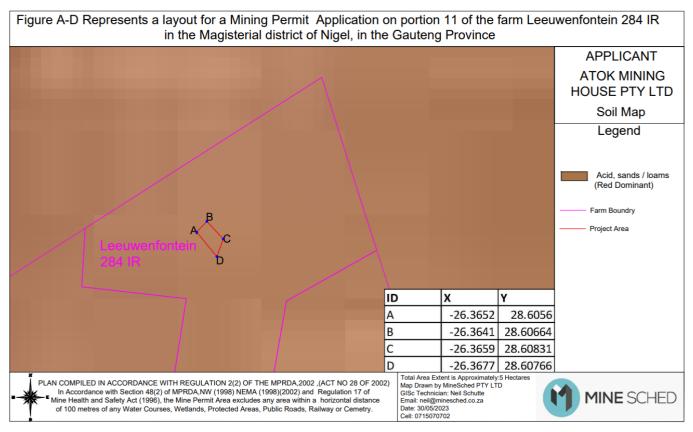
More than half of the land surface of South Africa is covered by the Ecca Group, believed to have been deposited during the Early Permian. The sedimentary geological of the Ecca Group comprise predominantly sandstones and shales. The Ecca Group is the second largest subdivision of the Karoo Supergroup in Southern Africa (Baiyegunhi

et al., 2019). A third of the coal resources in the Southern Hemisphere and almost all of the South Africa's coal resources are hosted within the Ecca Group rocks (Johnson, 1991). The coal seams of this geological group are horizontal throughout in the Main Karoo Basin except where the seams are associated with dolerite intrusions (Johnson et al., 2006). The basin tectonic and differential subsidence control the distribution, lateral extent, thickness, and maceral content of these coal seams (Johnson et al., 1996 and Johnson et al., 2006). The Ecca group is also believed to be hosting the much debated shale gas with more emphasises on the Whitehill and Collingham Formations in the southern Karoo. Since the discovery of natural gas deposit in the carbonaceous shale of the 1960s but was later stopped in the late 1970s due to significant gaps in the technical expertise (Cole, 1992 and Weckmann et al., 2007).

### Soil

The Ecca Group of the Karoo Supergroup was formed between 260 and 279 million years ago during the Permian Period of the Palaeozoic Era's Phanerozoic Eon. The upper layers of the Ecca lithostratigraphic unit are composed of coal seams, shale, and fine to coarse-grained sandstone.

Both of the aforementioned lithostratigraphic units can be explained by moderately to extremely impermeable underlying sequences, which weather to produce low permeability soils with low to moderate particle cohesion and consequently low to medium moisture retention qualities.



#### Figure 7: Soil class map for the project area.

Figure 7 above illustrates the soil groups that were recorded to be within the study area. It is evident that red clayrich soil or yellow structureless soil dominates the proposed project area. These soils exhibited characteristics of moderately-high inherent runoff potential, very slow infiltration rates and severely restricted permeability. This, along with the subterranean geologies that are impermeable, may cause subsurface flow to happen above the B soil horizon during and after large rainfall events.

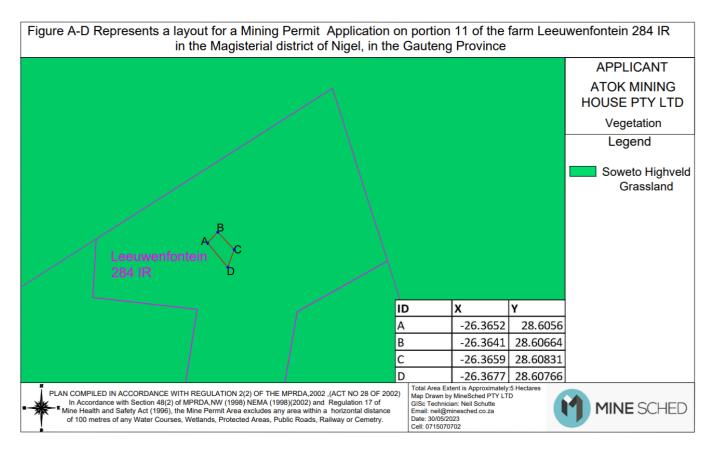
### Vegetation

The study area is dominated by natural vegetation with few homesteads or farmhouses and their associated structures present. The main land use within the study area is maize farmining, animal grazing, residential with roads and pwerlines present on site.

The proposed development was located in the level 1 ecoregion of the Highveld ecoregion, using Dallas's (2005) categorization (no. 11). Kleynhans et al. (2005) describes the ecoregion to consist of a diverse range of morphological types with plains of moderate to low relief, covered by various grassland vegetation types, defining this high-lying region. The average altitude varied from 1100 to 2100 Mean Average Metres Above Sea Level (mamsl) and the major rivers that had cut through the landscape included: Vet, Modder, Riet, Vaal, Olifants, Steelpoort, Marico, Crocodile and Great Usutu. Table 3 below presents the primary characteristics and data that have been collected for the Highveld ecoregion.

Table 3: Highveld Ecoregion attributes	(Kleynhans et al., 2005)
--	--------------------------

MAIN ATTRIBUTES	HIGHVELD		
Terrain morphology: Broad division (dominant types in bold (Primary)	Plains; Low Relief; Plains; Moderate Relief; Lowlands; Hills and Mountains; Moderate and High Relief; Open Hills; Lowlands; Mountains; Moderate to High Relief		
Vegetation types (Dominant types in bold)	Mixed Bushveld (limited); Rocky Highveld Grassland; <b>Dry Sandy Highveld</b> <b>Grassland</b> ; Dry Clay Highveld Grassland; <b>Moist Cool</b> <b>Highveld Grassland</b> ; Moist Cold Highveld Grassland; North-Eastern Mountain Grassland; Moist Sandy Highveld Grassland; Wet Cold Highveld Grassland (limited); Moist Clay Highveld Grassland; Patches Afromontane Forest (very limited)		
Altitude (mamsl) (secondary)	1100-2100, 2100-2300 (very limited)		
MAP (mm) (modifying)	400 to 1000		
Coefficient of Variation (% of annual precipitation)	<20 to 35		
Rainfall concentration index	45 to 65		
Rainfall seasonality	Early to late summer		
Mean annual temp. (°C)	12 to 20		
Mean daily max temp. (°C) February	20 to 32		
Mean daily max temp. (°C) July	14 to 22		
Mean daily min. temp. (°C): February	10 to 18		
Mean daily min. temp. (°C): July	-2 to 4		
Median annual simulated runoff (mm) for quaternary catchment.	5 to >250		



#### Figure 8: Vegetation map showing the type of vegetation in the project region.

Using the wide vegetation units reported in the SANBI (2006-18) dataset and addressed in Mucina and Rutherford, it was determined that the vegetation communities recorded to be within the study area had been drastically altered in comparison to the reference condition (2006-12). During site assessment, the study area was observed to have been dominated by grass species along the fairways and in the rough, with woody Eucalyptus grandis and Pinus patula tree species surrounding the site and intermittently spaced along the fairways.

No Species of Conservation Concern (SCC) or protected species were observed during site assessment and the probability of SCC or protected species occurring within the study area is very low due to the current transformed state of the vegetation.

#### Fauna

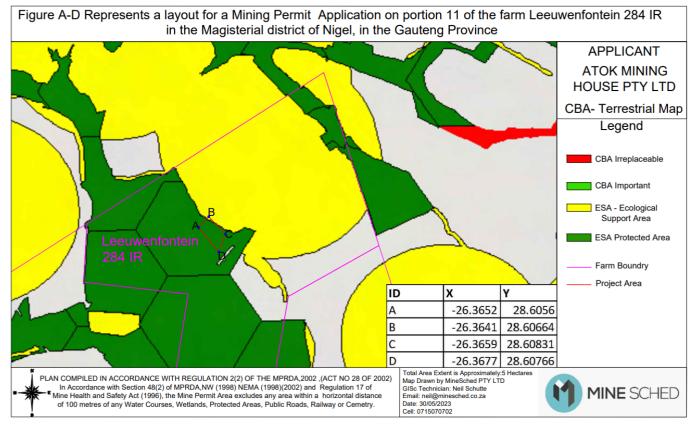
The majority of the faunal species within the study area are either nocturnal, hibernators, secretive and/or seasonal. It is increasingly difficult to confirm their presence or absence by means of actual observations alone. Limited faunal species were observed during site assessment, other than agricultural that considered within agricultural use of the farm area.

### **Critical Biodiversity Areas**

Systematic conservation assessment, the technical, often computer-based, identification of priority areas for conservation, is a tool used to informs conservation planning and decision-making. It assists with identifying those areas in need of safeguarding in order to meet national biodiversity thresholds. The result is Critical Biodiversity Areas (CBAs) which prescribes the desired targets for biodiversity features (e.g., vegetation types) and aims to avoid conflict with other land-uses, where feasible.

CBAs categories are as follows:

- CBA 1 has an irreplaceability value of 1, indicating that no other locations have been identified as potential replacements for satisfying the conservation goals for one or more biodiversity features. To protect this trait, special mitigating actions would have to be considered. Following the implementation of these steps, development in the region may be permitted.
- CBA 2 regions support high biodiversity, with irreplaceability ratings ranging from 0.1 to 0.8, indicating that other locations have been found as potential alternatives for attaining conservation aims for one or more biodiversity features, but not many.
- CBA 3 denotes one or more characteristics having a high irreplaceability value of 2. As a result, there are more alternative locations within which conservation goals might be realized.



#### Figure 9: Critical Biodiversity map for the proposed project area.

According to Figure 9, the vast covering of the project landscape is falls under the Protected Area with a minute portion overlapping into the Ecological Support Area. Protected Areas are terrestrial (land) and aquatic (water) areas which must be safeguarded in their natural or near-natural state because they are critical for conserving biodiversity and maintaining ecosystem functioning. Ecological Support Areas (ESA), on the other hand, are ecosystems moderately to significantly disturbed but still able to maintain basic functionality. Individual species or other biodiversity indicators may be severely disturbed or reduced. These are areas with low irreplaceability with respect to biodiversity pattern targets only.

#### Surface Water

The proposed project falls within quaternary catchment C21E, of the Upper Vaal Water Management Area (WMA), as indicated in Figure 10. The project area was recorded to have been situated in the C21E- 1442 Blesbokspruit Sub-Quaternary Reach (SQR), which was observed to have had a Present Ecological State

(PES) score falling within Class C (Moderately modified) and have been of a moderate Ecological Importance and Ecological Sensitivity within the broader catchment area (DWS, 2012). The primary landuse practices that were observed to have impacted on the overall PES of the SQR were agricultural practices and gold mine towards the lower reaches (DWS, 2012).

The Vaal catchment slopes gently from about 1 800 m in the east to 1 450 m in the west in the vicinity of the Vaal Barrage, with some steep areas in the headwaters of the Wilge tributary on the south-eastern border with the Orange. The water from the Upper Vaal WMA flows across the Middle Vaal, Lower Vaal and Lower Orange WMAs before reaching the Atlantic Ocean near the town of Alexander Bay in the western corner of the country. This cascading characteristic illustrates the interdependence of the indicated WMAs and emphasizes the need for water resource management to take place across the WMA boundaries (DWS, 2004)

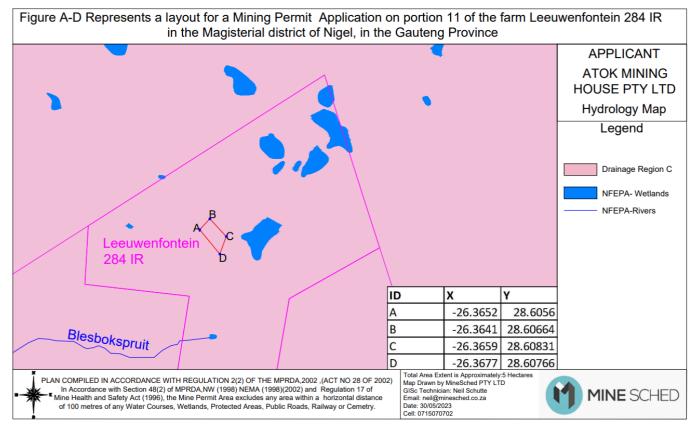


Figure 10: Hydrology map showing wetlands and quaternary catchment of the project area.

#### Groundwater

An important feature of the groundwater resources of the Upper Vaal WMA is the large dolomitic aquifers which extend across the north-western part of the WMA. Much of the water in the Mooi River, which is known for its strong base flow, originates as spring flow from these aquifers. Large quantities of water are also abstracted through pumping for urban use (such as by Rand Water) and for irrigation. As a result of the direct connections between the dolomitic aquifers and surface streams, increases in groundwater abstraction will result in corresponding decreases in surface flow. Dewatering of the dolomitic compartment can also result in the formation of sink holes (DWS, 2004).

The remainder of the WMA is mainly underlain by fractured rock aquifers, which are well utilized for rural

domestic water supplies and stock watering. Although of specific importance in some areas, only 3% of the total water requirements in the water management area are supplied from groundwater. The quality of groundwater is generally of a very high standard. Due to chemical reaction when groundwater infiltrates into mine caverns, poor quality water often results which can cause serious pollution when water decants or seeps from such mines (DWS, 2004).

#### Noise

Mining and associated activities often emit significant noise levels which can become a nuisance or health risk when not properly managed. The adjacent land users and occupants as well as the mining area may be impacted by this impact. The project area's landowners and legal occupants, as well as the nearby populations of land users, mine workers, industry, residential areas, and permanent small holding homesteads and settlements, have been identified as the most sensitive receptors. Mining, agriculture, military, and residential land uses make up most of the local area's land uses.

The main noise generation activities of the proposed coal mining are:

#### Construction Phase

- Construction of temporary structure, and;
- Loading and off-loading moveable infrastructure.

#### **Operational Phase**

- Excavating
- Drilling
- Blasting
- Loading and off-loading mining equipment and materials.
- Transportation of materials.

#### Closure Phase

- Decommissioning of temporary infrastructure.
- Less vehicles moving around the site.

On the proposed project area, noise generation can be anticipated as a result of the numerous activities and actions mentioned above. As stated in SANS 10103: 2008, noise levels may possibly exceed the permissible limits for noise. The houses on and next to the study area are the nearest sensitive receptors. Mitigation measures must be put in place to lessen this impact because the homesteads are close to the proposed mining area. Among the possible mitigation strategies are limiting noisy activities to the times when they are normally carried out and not on weekends or holidays, as well as maintaining machinery and vehicles to prevent needless and excessive noise from emanating. Additionally, it is advised that impacted parties be consulted in order to set a reasonable schedule for noisy activities.

# Air Quality

Pollutant dispersion and deposition over the region are aided by moist, unstable conditions and rainfall, which occur nearly entirely during the summer. Power plants, smaller businesses, home combustion, motor vehicles, smoldering coal-discard dumps, and veld burning are the main sources of pollutants in the region. Particulate matter, sulphur dioxide, nitrogen oxides, carbon monoxide, hydrocarbons, and carbon dioxides areamong the pollutants emitted by these sources.

In terms of health and safety, limiting the speed of cars on gravel roads to 30 km/h will have three advantages: it will lessen dust fallout, cut down on exhaust emissions, and assure worker safety. A further measure is to water-spray the gravel roadways to reduce dust.

#### **Heritage Resources**

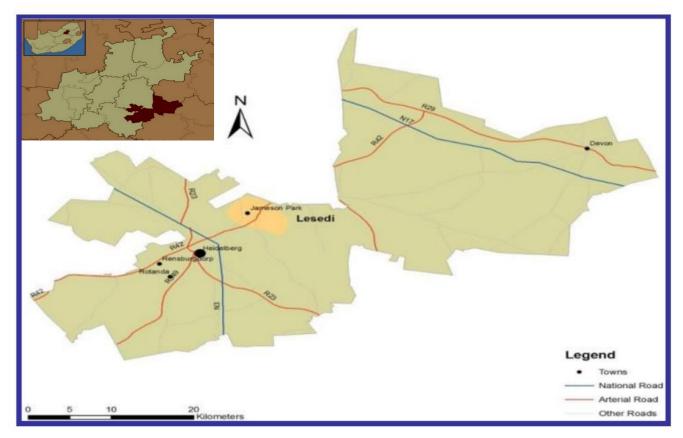
Heritage resources like Stone Age sites, rock paintings and engravings; stone tools; small, inconspicuous stonewalled sites from the Late Iron Age farming communities; formal and informal graveyards, etc. may occur in thestudy area.

No heritage resources were observed during site assessment. Should any heritage resources of significance be exposed during the construction or operational phase of the project, the SAHRA will be notified immediately, alldevelopment activities will be stopped, and an archaeologist accredited with the Association for Southern African Professional Archaeologists (ASAPA) will be notified to determine appropriate mitigation measures for the finds. This may include obtaining the necessary authorization (permits) from SAHRA to conduct the required mitigationmeasures.

#### Socio-Economic profile

The proposed project area is located within the Lesedi Local Municipality and the following information was derived from Lesedi Municipality Final IPD 2020/21.

Lesedi Local Municipality is a local municipality situated in the Sedibeng District Municipality of Gauteng. Lesedi Local Municipality can be described as a primarily rural area, with the major urban concentration located in Heidelberg/Ratanda, which is situated along the N3 freeway at its intersection with Provincial Route R42, east of the Suikerbosrand Nature Reserve. Devon/Impumelelo, which is situated on the eastern edge of the Municipal area, abutting the N17 freeway on the north is a significant rural settlement, while Vischkuil/ Endicott east of Springs abutting Provincial Route R29 is a smaller rural centre. Lesedi spans an area of ±1430km<sup>2</sup>. The area can be described as mostly agricultural, with Heidelberg and Devon being the primary service centers for the surrounding agricultural areas.





#### Demographics

According to Quantek projections (2018), the current population of Lesedi is estimated at 116 992, which reflects a population increase of about 24 109 since 2010. Therefore, the total population of Lesedi accounts for only 10.9% of the total population of the district, as shown in Table 4). Approximately 74.9% of the total population of Lesedi resides in the urban areas of Heidelberg/ Ratanda and Devon/Impumelelo, while the rest 25.1% is categorized as rural.

The population group distribution in Lesedi Local Municipality is explained by Table 5. The largest population group is Black Africans. This group makes up 80.44% of the municipality's population. The second largest population group is Whites which accounts for 16.75% of the population while the Asian and Coloured population groups account for 1.3% combined of the total population. This is according to the projections made by IHS.

Table 1: Population per municipality	within the Sedibeng Municipal District.
Table 4. Population per municipality	within the Seubeng wunicipal District.

Municipalitie s	Total Populatio n 2011	Total Populatio n 2016	Total Populatio n 2017 (IHS)	Total Populatio n 2018 (Quantek)
Emfuleni Local Municipality	721 663	733 445	749 622	758 811
Lesedi Local Municipality	99 520	112 472	114 287	116 922
Midvaal Local Municipality	95 301	111 612	109 901	112 233

SOURCE: STATSSA 2011, 2016, IHS 2017 AND QUANTEK 2018.

#### Table 5: Population group distribution of the residents of Lesedi Local Municipality.

Population Group	Total Population 2011	Total Population 2016	Total Population 2017 (IHS)	Total Population 2018 (Quantek)
Black Africans	76 919	88 177	91 936	94 316
Whites	19 562	22 375	19 149	19 308
Coloureds	1 156	898	1 694	1 739
Indians or Asians	1 313	1 022	1508	1 559
Other	570			
Total	99 520	122 472	114 287	116 922

SOURCE: STATSSA, 2011, 2016, IHS 2017 AND QUANTEK 2018.

Table 6 below shows that in 2016 according to Community Survey about 88.25% of the dwellings in the municipality are made up of formal structures and 8.62% is mainly informal structures.

#### Table 6: Types and number of dwellings of residents.

Types of Dwellings	No. of Dwellings (2011)	% in (2011)	No. of Dwelling (2016)	% in (2016)
Formal dwelling units	25 361	85.4%	34 679	88.25%
Traditional dwelling units	119	0.4%	438	1.11%
Informal dwellings	3 896	13.13%	3 389	8.62%
Other	292	0.98%	788	2%
Total	29 668	100	39 294	100

SOURCE: CENSUS 2011 AND COMMUNITY SURVEY 2016.

#### **Socio-Economic status**

Decades of distorted development in the area has manifested in highly skewed distribution of income and wealth. This is illustrated in Table 7. The unemployment rate among the economically active sector of the community is approximately 25,9% and this is according to the Census 2011. However, the recent projections provided by Quantek, depicts a bleaker picture, thus projecting the unemployment rate to be at 43.6% in 2017. This challenge, as bleak as it seems, it gives the municipality opportunity to radically implement the LED strategy to lure potential investments both locally and abroad, such as the VOPAK bulk terminal project and TECINO LETHU projects.

Type of sector	Employed	Un-employed	Discouraged work-seekers	Not economically active	Age less than 15yrs	N/A	Total
Formal sector	22 671	-	-	-	-	429	23 100
Informal sector	3 360	-	-	-	-	55	3 415
Private household	4 270	-	-	_	-	101	4 371
unknown	1 218	-	-	-	-	24	1 242
unspecified	-	-	-	_	-		-
N/A	-	11 042	2 889	22 805	-	30 656	67 393
Total	31 518	11 042	2 889	22 805	-	31 266	99 520

#### Table 7: Unemployment rate in Lesedi Local Municipality.

#### Economy

The Gross Geographic Product (GGP) of Lesedi Local Municipality is largely dependent on manufacturing (38.8%), community services (29.4%) and financial services (18.6%), and collectively these three sectors constitute 86.8% of GGP of Lesedi Local Municipality.

# (b) Description of the current land uses.

Land use is defined as activities carried out on land by humans with the goal of obtaining goods and/or benefits by utilizing the resources of the land. Thus, the term "land use" describes the function that the land performs, such as agriculture, natural resources, or recreation.

From Google Earth satellite imagery, ground-truthing during a site assessment undertaken on the 11<sup>th</sup> of May 2023, the land use associated with the project area animal grazing and domestic farming. There are few residential areas within and less than a kilometer away from the project area, as illustrated in Figure 12.



Figure 12: Buildings within proximity of the proposed project area.

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

The project area comprises of the following environmental features and infrastructure:

- Wetlands (channeled valley-bottom wetland)
- Gravel roads
- Low shrubland and open woodlands.

These features are an integral part of the landscape and form part of the key land use components that enable livelihood diversification opportunities within the area.



Figure 13: Wetland and gravel road within the project area.

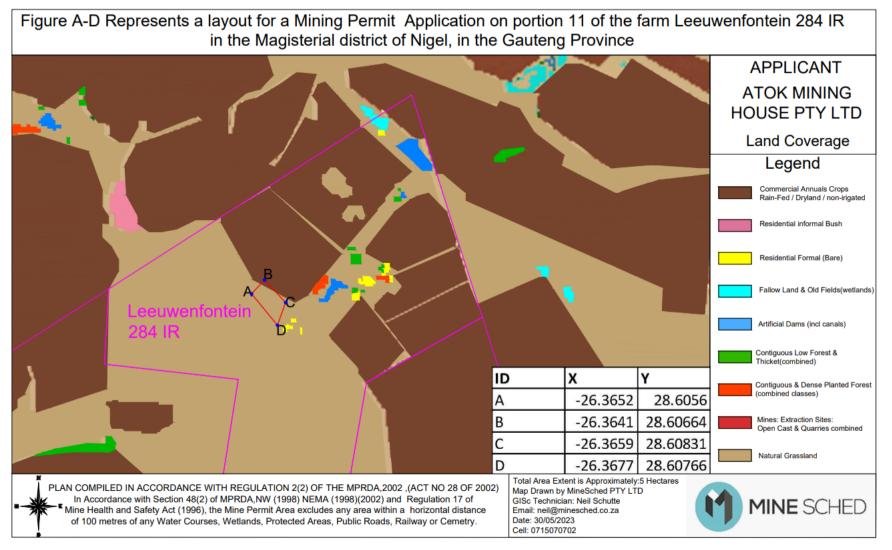


Figure 14: Current land use map for the project area.

# i. Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts.

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected partiestogether 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).

ENVIRONMENTAL ASPECT													
	NATURE OF IMPACT	IMPACT STATUS	MAGNITUDE	EXTENT	DURATION	REVERSIBILITY	IRREPLACEABILITY	PROBABILITY	H CANCA SIG NILI PRE- MITIGATION	MITIGATION POTENTIAL	UNE DILLING POST- MITIGATION	CONFIDANCE RATING	CUMULATIVE IMPACTS
GEOLOGY AND SOILS	Minor loss and disturbance to topsoil as a result of clearing of vegetation, trenching and drilling. The natural structure of the soil is disturbed when vegetation is removed and the topsoil is removed and the topsoil is removed, which breaks the natural cycle and exposes the bare soil to erosion. Due to soil compaction brought on by vehicles moving on these soils, root development is less able to penetrate the soil. Compaction makes erosion more likely. The ability of topsoil to serve as a plant development medium would be diminished if soils were not stripped and stacked in accordance with the soil stripping recommendations. This is because these soils would have lost their original physical and chemical qualities. All of the factors above contribute	-	3	2	1	2	8	5	40	Medium	20	Certain	Very low
	to a loss of the topsoil's ability to be a resource through alterations and removal.		2	2	1	2	0	2	10	Modium	0	Cortain	Verylew
	Hydrocarbon spills on soils can occur where heavy machinery and vehicles are parked such as the	-	3	2	1	3	9	2	18	Medium	9	Certain	Very Low

HYDROLOGY GROUNDWATER SURFACE WATER	<ul> <li>hard park area because they contain large volumes of lubricating oils, hydraulic oils, and diesel to run. There is always a danger that things will malfunction or leak.</li> <li>Impacts on stormwater, erosion, and siltation as a result of failing to deploy temporary measures to control the quantity and quality of runoff from storms.</li> <li>Contamination of stormwater runoff and groundwater, caused by chemicals such as hydrocarbonbased fuels and oils or lubricants spilled from heavy vehicles and machinery and fuel storage area.</li> </ul>	-	3	3	1	3	9	2	30	Medium Medium	15 9	Certain	Very Low Very Low
BIODIVERSITY	<ul> <li>Minor loss of natural vegetation and destruction of habitat will result in associated loss of fauna and flora species.</li> <li>Biodiversity may be impacted by disruption of animal species' migratory patterns.</li> <li>Biodiversity will be impacted by noise, dust, and probable light pollution, as well as the movement of contaminants like hydrocarbons in the soils, dust, and emissions from vehicles and machinery that change the air quality.</li> </ul>	-	3	3	1	3	10	4	40	Low	27	Certain	Very Low
	Introduction and spread of alien invasive species. The moving of plants and soil, which can lead to opportunistic invasions after disturbance and the dispersal of seed in building supplies and on vehicles. Alien plant invasions can have an effect on hydrology by limiting the amount of water that enters a river through rainwater and by outcompeting native flora, which reduces biodiversity in the natural world. Once introduced, alien plants have the ability to colonize the entire catchment. Aliens plants can easily colonize and have an impact on downstream users if allowed to set seed before management measures are put in place.	-	4	3	1	3	11	4	44	Medium	22	Certain	Very Low

ARCHAEOLOGICAL/HERITAGE RESOURCES	Alteration of archaeological, historical and palaeontological resources that may be discovered during mining.	-	2	1	5	5	13	2	26	Low	17	Certain	Very Low
VISUAL AND SENSE OF PLACE	Visibility from sensitive receptors / visual scarring of the landscape because of the mining activities.	-	3	3	1	1	8	5	40	Medium	20	Certain	Very Low
NOISE AND VIBRATION	Noise and vibration impacts related to the usage of machinery, equipment, and vehicles that result in an increase in the ambient noise level and associated health concerns.	-	4	3	1	2	10	5	50	Low	33	Certain	Very Low
AIR QUALITY	Increased dust pollution as a result of drilling, excavating, driving on gravel roads, and clearing vegetation.	-	4	3	1	2	10	5	50	High	16	Certain	Very Low
	The quality of the surrounding air may be impacted by the gaseous emissions from machines and vehicles.	-	3	3	1	3	10	5	50	Low	33	Certain	Very Low
WASTE	Generation of additional general waste, litter and building rubble and hazardous waste.	-	3	3	1	5	12	5	60	Medium	30	Certain	Very Low
TRAFFIC	Traffic entering and leaving the site, along with the existing traffic, will cause a little change in traffic patterns.	-	2	3	1	1	7	5	35	High	12	Certain	Very Low
	Threats to health, safety, and nuisance posed by increased traffic in and around the research area, including big trucks and cars.	-	5	3	5	5	18	3	54	High	18	Certain	Very Low
SERVICES	Minor influence on natural resources and service infrastructure due to the requirement for utilities like water, power, and sewage systems during the miningphase.	-	2	2	1	3	8	5	40	Medium	20	Certain	Very Low
HEALTH AND SAFETY	There is a chance that mining activities and workers will start veld fires, which might harm or kill workers as well as nearby landowners, residents, and visitors.	-	5	4	5	5	19	3	57	High	19	Certain	Very Low
	Risk to the public and workers is increased since they could fall into trenches and excavated areas if they aren't fenced off.	-	5	3	5	5	18	3	54	High	18	Certain	Very Low
SOCIO-ECONOMIC	Possibility of creating a small number of short-term jobs for the local population during the operational phase.	+	3	3	1	1	8	5	40	N/A	40	Certain	Very Low
	Positive multiplier effects will have a short-term, extremely small, and positive impact on the local economy.	+	2	3	1	1	7	5	35	N/A	35	Certain	Very Low

# Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmentalimpacts and risks;

A "significant impact" is defined as it is defined in the EIA Regulations (2014): "an impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence". The objective of this EIA methodology is to serve as a framework for accurately evaluating impacts associated with current or proposed activities in the biophysical, social and socio-economical spheres. It aims to ensure that all legal requirements and environmental considerations are met in order to have a complete and integrated environmental framework for impact evaluations.

One of the most crucial steps in the environmental impact assessment process is selecting the affects that will be evaluated. Because the observed environmental consequences can and frequently do belong to the same impact stream, it is of utmost relevance. This approach evaluates all effects on the biophysical environment in terms of the general health of the ecosystems, habitats, communities, and individuals involved. For example, the removal of groundcover to slope or scrape an embankment may result in higher water runoff, which speeds up erosion. Due to increased erosion further down the river, the amount of sediment increases. Many fish species leave because they can't handle the heavy silt load. As a result, the habitat has changed or is changing. Therefore, it is important to comprehend that the primary cause of the issue—the removal of groundcover—is evaluated in terms of the degree to which the environment's health has changed and/or the components' conservation value. Therefore, the impact of groundcover removal is highly significant if it has a large negative impact on a specified system and a high positive conservation value.

Environmental Impact Assessment (EIA) Regulations, 2014 requirements.

The Environmental Impact Assessment (EIA) 2014 Regulations promulgated in terms of Sections 24 (5), 24M and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) [as amended] (NEMA), requires that all identified potential impacts associated with the proposed project be assessed in terms of their overall potential significance on the natural, social and economic environments. The criteria identified in the EIA Regulations (2014) include the following:

- Nature of the impact;
- Extent of the impact;
- Duration of the impact;
- Probability of the impact occurring;
- Degree to which an impact can be reversed;
- Degree to which impact may cause irreplaceable loss of resources;
- Degree to which impact can be mitigated; and
- Cumulative impacts.

The Significance of a prospective impact is assessed using the appropriate temporal and spatial scales given by the Extent, Magnitude, and Duration criteria associated with a specific impact. **Moepathutsi Geo-Environmental Solutions** has created an impact assessment methodology (as outlined below). This method produces an indication of the overall relevance by combining the criteria rather than specifically defining each one.

#### Impact Assessment Methodology

The likelihood that the activity conducted has or could have an impact is ascertained by taking the issue's root cause into account. The impact can then be evaluated to ascertain its significance and define management or mitigation strategies to address the impact.

Thus, the following definitions are appropriate:

- An activity is a particular procedure or action carried out by a company for which a duty might be assumed. Activities also include resources that a company has access to, such as buildings or infrastructure;
- An organization's operations, goods, and services that can interact with the environment are referred to as having an environmental aspect. The interaction of an aspect with the environment may result in an impact;
- Environmental impacts are the effects of these factors on sensitive or valuable environmental resources or receptors, such as disturbance from noise and health implications from lower air quality;
- The biophysical environment's biophysical components like aquifers, flora, and palaeontology are examples of
  receptors, but they are not restricted to these. Receptors can also include humans or human-made systems,
  such as local citizens, communities, and social infrastructure. Changes in the environment can result from
  environmental impacts, which can be direct, indirect, or cumulative.
- Direct impacts are described as alterations to environmental elements as a result of direct cause-and-effect relationships between the environment and project activity. Indirect effects result from cause-and-effect interactions between direct effects and the environment; and
- Cumulative impacts are the cumulative effects of human activity on the environment.

#### Assessment of Impact Significance

Impacts are predicted using the body of information as well as the results of environmental investigations. Once a potential impact has been identified, it is required to evaluate which project activity would result in the impact, its likelihood of happening, as well as its size and scope (spatial and temporal). This data is crucial for determining mitigation and monitoring methods as well as for assessing the impact's importance. As a result, the identified characteristics and effects are described as follows:

#### i. Nature of impact

The nature of impact can be defined as "brief explanation of the impact being assessed, in terms of the planned activity or project, including the socio-economic or environmental element affected by this impact".

#### ii. Status of impact

STATUS OF THE IMPACT	STATUS	DESCRIPTION				
	Positive (+)	A benefit to the environment.				
	Negative (-)	A cost to the environment.				
	Neutral (N)	No cost or benefit to the environment.				

#### iii. Magnitude of the impact

The magnitude of an impact can be defined as *"a concise description of the intensity or amplitude of the influence on socio-economic or environmental aspects".* 

			MAG	SNITUDE	OF AN IMPACT
MAGNITUDE	(at	the	Magnitude	Score	Description
specified scale)			Zero	1	Natural and/or social functions and/or processes are not changed.
			Very Low	2	Natural and/or social processes and/or functions have hardly changed.
			Low	3	Natural and/or social processes and/or functions may have been marginally modified.
			Medium	4	Natural and/or social functions and/or processes are clearly changed.
			High	5	Significantly altered natural and/or social processes.

#### iv. Extent of the impact.

The extent of an impact can be defined as "a quick explanation of the spatial influence of the impact or the region that will be affected by the impact".

	EXTENT OF AN IMPACT										
EXTENT	Extent	Score	Description								
	Footprint	1	Only to the extent that the activity, such as a footprint, takes								
			place within the entire site area.								
	Site	2	A 500-meter radius around the facility or just the site itself will								
			be affected.								
	Local	3	Local area or district (affected homes, transportation corridors,								
			and neighboring towns).								
	Region	4	The entire province or region is impacted.								
	National	5	Country is affected.								

#### v. Duration of the impact.

The duration of an impact can be identified as "a brief statement of the time frame throughout which the impact will have an impact on various aspects."

DURATION OF AN IMPACT									
DURATION	Duration	Score	Description						
	Short term	1	Less than 2 years						
	Short-Medium term	2	2-5 years						
	Medium term	3	6-25 years						
	Long term	4	26-45 years						
	Permanent	5	46 years or more						

#### vi. Degree to which an impact can be reversed.

The reversibility of an impact can be defined as "the capacity of an impact to switch between states of affecting and not affecting aspects."

REVERSIBILITY OF AN IMPACT				
DEGREE TO WHICH AN	Reversibility	Score	Description	
IMPACT CAN BE	Completely	1	Impacts can be mitigated to a very small extent by	
REVERSED	reversible		rehabilitation efforts, with hardly any lingering effects.	
	Nearly completely	2	With only minor residual effects, impacts can be almost	
	reversible		entirely reversed by implementing mitigation strategies	
			and rehabilitation.	
	Partly reversible	3	Through the use of mitigation strategies and rehabilitation,	
			impacts can be partially reversed with only mild residual	
			consequences.	
	Nearly irreversible	4	Through the use of mitigation strategies and rehabilitation,	
			effects can be reduced but only somewhat reversed with	
			negative aftereffects.	
	Irreversible	5	Impacts are irreversible and cannot be mitigated through	
			the use of viable rehabilitative methods.	

#### vii. Degree to which an impact may cause irreplaceable loss of resources.

The number of resources that can or can't be replaced can be used to characterize an impact's irreplaceability.

replaceability= Magnitude + Extent + Duration + Reversibility
---

IRREPLACEABILITY OF AN IMPACT				
DEGREE TO WHICH AN	Irreplaceability	Score	Description	
IMPACT MAY CAUSE	No loss	0	No loss of resources.	
IRREPLACEABLE LOSS OF	Very low	1-5	Little loss of resources.	
RESOURCES.	Low	6-10	Slight loss of resources.	
	Medium	11-15	Significant loss of resources.	
	High	16-20	Complete loss of resources.	

#### viii. Probability of the impact occurring.

The probability of an impact can be defined as "the anticipated possibility that the impact will occur."

PROBABILITY OF AN IMPACT				
PROBABILITY OF THE	Probability	Score	Description	
IMPACT OCCURING.	Unlikely	1	Unlikely to occur (0-15%)	
	Possible	2	May occur (15-40%)	
	Probable	3	Likely to occur (40-60%)	
	Highly probable	4	Between 60% and 85% that the impact will occur.	
	Definite	5	Will certainly occur (85-100%)	

#### ix. Significance of impacts (Pre-Mitigation)

The significance of an impact can be identified as *"the combination of the duration and importance of the impact, in terms of physical and socioeconomic extent, resulting in an indicative level of mitigation necessary."* 

Significance= Irreplaceability x Probability

A maximum of 100 importance points may be used (SP). According to the following criteria, environmental impacts were classified as Very High (VH), High (H), Medium (M), Low (L), or Very Low (VL).

Score	Significance
0	Neutral
1-20	Very low
21-40	Low
41-60	Medium
61-80	High
81-100	Very High

#### Table 8: Significance rating (SR) basis

#### x. Degree to which an impact can be mitigated.

Degree to which an impact can be mitigated can be defined as "the effect of mitigation methods on the impact and their level of efficacy."

	MITIGATION POTENTIAL OF AN IMPACT					
DEGREE TO	D WHICH	AN	Degree	Calculation	Description	
IMPACT	CAN	BE	High	Pre-Mitigation	Impact 100% mitigated	
MITIGATED				SR/3 = Post-		
				Mitigation SR		
			Medium	Pre-Mitigation	Impact >50% mitigated	
				SR/2 = Post-		
				Mitigation SR		
			Low	Pre-mitigation	Impact <50% mitigated	
				SR / 3 = x		
				Then:		
				Pre-mitigation		
				SR - x = Post		
				Mitigation SR		

#### xi. Significance of Mitigation (Post-Mitigation)

The significance of an impact can be identified as *"the combination of the duration and importance of the impact, in terms of physical and socioeconomic extent, resulting in an indicative level of mitigation necessary."* 

Significance= Irreplaceability x Probability

Score	Significance
0	Neutral
1-20	Very low
21-40	Low
41-60	Medium
61-80	High
81-100	Very High

#### Table 9: Significance rating

#### xii. Confidence rating

Confidence in the impact assessment can be defined as "degree of confidence of the impact occurring."

	CONFIDENCE RATING OF AN IMPACT			
CONFIDENCE RATING Confidence	Confidence	Rating	Description	
		Certain	There is an infinite amount of knowledge and	
			sound comprehension of the environmental	
			factors that could have an impact.	
		Sure	There is a reasonable and generally sound	
			amount of knowledge about and/or awareness of	
			the environmental factors that could have an	
			impact.	
		Unsure	Limited knowledge exists about and/or	
			understanding of the environmental elements that	
			may have an impact.	

#### xiii. Cumulative Impacts

The effect of cumulative impacts can be defined as *"the effect the combination of past, present, and "reasonably foreseeable."* 

CUMULATIVE RATING OF AN IMPACT				
CUMULATIVE RATING         Cumulative         Rating         Description				
	Effects	Low	Minor cumulative effects	
		Medium	Moderate cumulative effects	
		High	Significant cumulative effects	

# iii. 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.

The table below outlines the type of impacts the proposed activity will have at the different stages of the project lifecycle.

#### Table 10: Positive and Negative impacts.

Impacted Environment	Impact	Status of Impact
ESTABLISHMENT PHASE		
Flora & Fauna	During site preparation, native natural vegetationand plant species are destroyed or lost.	Negative
	Impact on animal species.	Negative
	The establishment and spread of weeds and alien invader plants that have been classified noxious weeds.	Negative
Ground water	Groundwater contamination/damage, resulting in hydrological impacts.	Negative
Surface water	Deterioration of surface water from contaminatedtopsoil run-off.	Negative
Air quality	Dust emissions.	Negative
Soils	Soils are physically disturbed during land clearing.	Negative
Noise	Nuisance to the surrounding landowners and communities.	Negative
	Animal disturbances in the vicinity of wildlifelodges.	Negative
Cultural/Heritage resources	Possible impact on historic and archaeological resources.	Undetermined at this stage.
Waste generation	Solid waste production (e.g., littering)	Negative
Traffic	As vehicles reach the sites, there is an increase in traffic in the region.	Negative
OPERATIONAL PHASE		
Soils	Soils are physically disturbed during land clearing.	Negative
Social	Disturbance of surrounding landowners and local communities.	Negative
	Direct employment and development of skills	Positive
Water resources	Hydrological impacts are caused by damage to groundwater and surface water.	Negative
Geology	During mining phase, rock material is physically removed.	Negative
Noise	Nuisance to surrounding landowners and local communities.	Negative
Cultural/Heritage resources	Possible impact on historic and archaeological resources.	Undetermined at this stage.
DECOMMISSIONING PHASE		
Soil	Soil degradation	Negative
Noise	Nuisance to surrounding landowners and local communities.	Negative
Air quality	Dust emissions	Negative

Traffic	As vehicles reach the site, there is an increase intraffic	Negative
	in the region.	

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

For each environmental component analyzed, the following proposed mitigation measures and residual hazards have been offered. This report will be made available to I&APs for review and discussion, and their suggestions and concerns will be incorporated in the final report, which will be submitted to the DMRE for adjudication.

#### Disturbance of surrounding landowners and local communities.

- Ascertain that the construction meets all occupational health and safety criteria.
- The Applicant must enter into formal written arrangements with the affected landowner before accessing any piece of the land. This written agreement should also include the landowner's unique requirements, resulting in a legally binding agreement.
- Upon entering or leaving the homestead, all gates must be closed immediately.
- All construction and vehicles that use public roads must be in good working order, with their load secured. All local, provincial, and national legislation pertaining to road safety and transportation must be followed.

#### Flora and Fauna

- Clearing should be limited to regions where invasive work is required. To minimise soil disturbance, trim plants rather than remove it.
- To reduce the amount of vegetation disturbance caused by temporary access roads, put drill sites and trenches as close to existing access roads as possible.
- Following invasive mining efforts, restore any damaged areas to their pre-mining state.

#### Water Resources

- A sufficiently qualified specialist must ensure that no drilling or trenching is carried out within 100 meters of a watercourse or within the flood line's 1:100 year.
- To restrict the flow of water run-off from the road surface, appropriate speed humps and mitre drains must be built along the road for every three meters of elevation.
- All techniques for slowing the flow of water off the road surface must be used, and the feasibility of constructing an attenuation system to store surface water and release it slowly into the environment must be examined.

#### Noise

- Construction trucks and machinery must be always kept in good operating order.
- There should be no unnecessary hooting or noise when working or traveling near noise sensitive sensors.

#### **Air Quality**

- The possibility for dusty conditions will be reduced by limiting the clearance of plants and soils in the affected region.
- Mining activities (including drill and trench sites) should be kept as far away from homes as practicable.
- Speed limitations must be followed by all vehicles using public gravel roads.
- Dust suppression will also be implemented on gravel roads.

#### Soil Contamination/pollution

- The machinery that will be employed in the operation will be in good functioning order.
- Any hydrocarbon spilled during the construction of the site shall be cleaned up as quickly as possible.
- Drilling fluids (mud) must be confined in steel sumps, with any spills or leaks cleaned up.

#### Waste Generation

- Any excess or waste material or chemicals, such as drilling muds, must be removed from the site and recycled if possible (e.g., oil and other hydrocarbon waste products).
- Any non-recyclable waste materials or chemicals must be disposed of at a properly licensed disposal facility.
- When the site is closed, all permanent structures must be removed. This will comprise all of the site's associated equipment, materials, and garbage.
- Any type of waste should not be disposed of onsite under any circumstances.

#### Traffic

• All vehicles must adhere to the speed limit on site to reduce traffic.

#### v. Motivation where no alternative sites were considered.

Based on historical data and accessible information, the application region has been chosen as the preferable location, indicating the potential for economically valuable minerals to develop. Mining activities have been carried out near the application area, according to the locality map supplied in this report. However, additional specific information about the mineral mined earlier, as well as the duration and termination of mining, is not accessible for inclusion in this report.

#### vi. Statement motivating the alternative development location within the overall site.

The mining site, as well as accompanying campground locations and access roads, are among the locations evaluated for the planned project. The site was chosen based on several factors, including environmental concerns (how sensitive is the area in terms of soils, wetlands, and groundwater, for example) and the project's reliance on the essential infrastructure.

# a. 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.

The following steps were taken to determine the possible impacts associated with the proposed mining activities:

- The stakeholder consultation process is currently being conducted in an interactive manner, allowing
  landowners and established stakeholders to provide feedback on the project. This is an important focus
  because the local residence will provide site-specific knowledge that isn't often available in desktop
  research materials. Stakeholders are asked to share their thoughts on the project as well as any future
  issues they might have. The impact assessment incorporates all the feedback and complaints received.
- To assess the environmental setting in which the project is situated, a thorough desktop investigation was conducted. Various tools were used to assess the importance and vulnerability of various environmental factors based on the desktop investigations. The following tools were used in the desktop investigation:
  - Detailed mapping of the study area based on known data sources.
  - Base maps for the Geographic Information System
  - Current data/reports and literature for the study area
- On the 11<sup>th</sup> of May 2023, a site visit was performed. The aim of the site visit was to ensure that the data collected as part of the Desktop investigation accurately reflected the current state of the property.
- The quantitative ratings of the identified impacts were completed as described in the Impact Assessment Section. The ratings were done in such a way that the value of each of the impacts could be calculated. The EAP also evaluates the calculation's results to see if they represent both the perceived and real viewpoints.
- The importance of the impacts and steps that have been deemed acceptable and effective, specifically as Best Practical and Economical Options, are used to identify management measures.

# b. 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)

#### Potential impacts that may be caused by the proposed development will be identified using input from the following:

- Views of Interested and Affected Parties;
- Existing information;
- Investigations by specialists,
- Site assessment;
- Legislation

The following were noted as potential significant direct, indirect, and cumulative effects:

- Soil contamination and compacting;
- Erosion;
- Deterioration in the quality and quantity of surface and ground water;
- Impacts on biodiversity;
- Faunal loss and displacement;
- Impacts on existing land use of the study and surrounding area;
- Destruction or loss of historical landmarks, such as cemeteries and other significant historical sites that might be discovered during excavations;
- Reduced aesthetic worth and negative effects on "Sense of Place";
- Due to dust pollution, there is poor air quality and reduced vision;
- Increased noise levels;
- Generation of waste;
- Increased need for infrastructure and resources for services;
- A little increase in traffic and the requirement for road infrastructure repair;
- Potential harm to human health and loss of human life; and
- Changes to the Socioeconomic Environment (Positive or negative).

#### Table 11: Significance and risk category.

SIGNIFICANCE AND RISK CATEGORY	DEFINITION
0	Positive (i.e., where the impact has overall positive or beneficial outcome on the decision to develop the area)
<-10	Low negative (i.e., where this impact would not have
	a direct influence on the decision to develop in thearea).
>-10<-20	Medium negative (i.e., where the impact couldinfluence the decision to develop in the area).
>-20	High negative (i.e., where the impact must have an influence on the decision process to develop the area).

NAME OF ACTIVITY	POTENTIAL	ASPECTS	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
<ul> <li>(E.g., For mining- drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etcetcetc</li> <li>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, etcetcetc.)</li> </ul>	IMPACT (Including the potential impacts for cumulative impacts) (e.g., dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc etc)	AFFECTED	In which impact is anticipated (e.g., Construction, commissioning, operational Decommissioning, closure, post- closure)	if not mitigated	(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.	if mitigated
Construction of infrastructure.	Generation of fugitive dust.	Air Quality	Construction phase	High	nitor and manage through mine plan and dust suppression.	Moderate
	Topography and visual alteration.	Topography and visual environment.	Construction and operational phase	Medium	Avoid and minimize through mine plan.	Low
	Soil resources degradation.	Soils	Construction and operational	Medium/High	Prevent through soil rehabilitation and Stormwater Management Plan.	Low
	Influx of alien invasive vegetation.	Flora and fauna	Construction phase	Medium	Prevent through Stormwater Management Plan and alien invasive management.	Low
	Noise generation	Noise	Construction and operational	High	Monitor and prevent through regular vehicle inspections.	Moderate
	Sedimentation and siltation of watercourses.	Wetlands and surface water.	Construction phase	High	<ul> <li>Mining activities must take place at least 500m away from any watercourses and wetlands.</li> <li>Monitor and prevent through Stormwater Management Plan.</li> </ul>	Moderate

Pollution Dam Control	Contamination of water resources.	Wetland and aquatic ecology	Operational phase	Medium/High	Monitor and manage through Stormwater Management Plan and Aquatic monitoring programme.	Low
		Surface water			Manage and prevent through Stormwater Management Plan.	
		Ground water			Monitor and manage through Stormwater Management Plan, Groundwater monitoring programme and emergency response plan.	
Social	Temporary job creation	Socio-economic	Operational	Positive		Positive
	Growth and investment in the local economy.					
Decommissioning	Loss of temporary employment.	Socio-economic	Decommissioning/closure	High	Temporary staff should be trained in management skills that can be applied to other employers.	Moderate
	Rehabilitation of the mining site.	Fauna and Flora	Decommissioning/closure	Medium/High	The site must be rehabilitated as close as to its pre- mining state as possible.	Low

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked APPENDIX G.

# c. Summary of specialist reports.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	
Hydrological Studies	<ul> <li>These studies are currently underway and will be provided within the final draft. Against the site assessment and desktop studies provided, these are the expected recommendations:</li> <li>Monitoring program for groundwater quality (quarterly, thorough chemical analysis for key constituents and trace elements), and groundwater levels (monthly). The collected data should be evaluated on an annual basis to distinguish seasonal fluctuations and general trends caused by the projected mine activities.</li> <li>A best practice standard operating procedure for water level monitoring and water sampling should be defined (e.g. purge boreholes prior to sampling, filter and acidify samples on site for metal analyses).</li> <li>During the mine's development, the potential junction of water-bearing cracks should be studied using approved methodologies. Pre-grouting should be used to reduce the dangers and potential repercussions of such junctions.</li> <li>The mining audit should be rehabilitated after closure to reduce the possibility of water pollution, i.e. hydraulically sealed after closure.</li> <li>The water level in mine voids should be monitored and regulated below critical levels after closure to prevent diffuse seepage into the weathering aquifer using appropriate engineering designs (e.g., active pumping or passive dewatering of audits using drain systems).</li> <li>Any potential mining decant should be caught and processed to acceptable standards before being released into the environment.</li> </ul>		N/A

Attach copies of Specialist Reports as appendices

# d. Environmental impact statement

# i. Summary of the key findings of the environmental impact assessment;

Environmental Aspect	Potential Impact	Activities
Blasting and vibration	Excess may cause damage to nearby infrastructure.	Rock excavation.
Noise	Day and night-time impact	<ul> <li>Preparation of the box cut area.</li> <li>Bulldozer clearing topsoil and vegetation.</li> <li>Excavator loading topsoil.</li> <li>Diesel generator</li> </ul>
Air Quality	Reduction in air quality.	Dust and vehicle emissions generated by mining operations.
Visual	ange the region's overall landscape character and sense of location.	<ul> <li>Preparing and planning of the mining site;</li> <li>Construction of the mining infrastructure;</li> <li>Siting of mining infrastructure;</li> <li>Removal of vegetation and;</li> <li>Loss of topsoil and creation of stockpiles.</li> </ul>
	Generation of dust during the construction phase may cause negative visual impacts.	<ul> <li>Preparing and planning of the mining site;</li> <li>Construction of infrastructure;</li> <li>Removal of vegetation cover;</li> <li>Generation of dust through vehicle movement.</li> </ul>
	The mining operations may have a negative effect on receptors (residents and drivers) who dwell in or use the designated receptor sites.	<ul> <li>Preparing and planning of the mining site;</li> <li>Construction of infrastructure;</li> <li>Removal of vegetation cover;</li> </ul>
Soil	Soil compaction	<ul> <li>Development of the Open pit</li> <li>Foundations and trenches for the development of infrastructure.</li> </ul>
	Soil erosion	<ul> <li>Removal of vegetation cover;</li> <li>Topsoil stripping and stockpiling;</li> <li>Development of roads.</li> </ul>
	Soil pollution	<ul> <li>Oil and fuel spillage from vehicles;</li> <li>Generation of waste;</li> <li>Leakage from waste storage facilities.</li> </ul>
Fauna	Loss of faunal habitat and ecological structure.	<ul> <li>Placement of infrastructure within sensitive faunal habitat areas;</li> <li>Clearing of site and removal of faunal habitat;</li> <li>Construction of access and haul roads;</li> <li>Construction of infrastructure;</li> <li>Fire</li> </ul>
	Faunal diversity loss and community integrity.	<ul> <li>Poaching;</li> <li>Removal of faunal habitat;</li> <li>Vehicles accessing site.</li> </ul>
Surface water and wetlands	Reduction in resources.	Use of portable water.

	Reduction in surface water quantity.	<ul> <li>Diversions of rivers;</li> <li>Opencast and construction operations at tributaries.</li> </ul>
	Water quality deterioration.	<ul> <li>River diversions;</li> <li>Spilled construction materials such as cement, fuel, oil and paint.</li> </ul>
	Deterioration of surface water quality.	<ul> <li>Chemical contaminants;</li> <li>Vehicle wash bays and workshop;</li> <li>Spillages from fuel deposits or storage facilities.</li> </ul>
Groundwater	Impact on the availability of groundwater.	velopment of blasting in opencast mining.
	Impact on the quality of groundwater.	
Cultural and Heritage aspects.	<ul> <li>Economic opportunities</li> <li>Development of infrastructure and Employment.</li> </ul>	Increase in disposable income may create negative social impacts such as crime, alcoholism and prostitution in and around the project area.
Land capability	Loss of current land capability.	ange of land use from commercial and industrial to natural vegetation and agricultural (livestock grazing).
Traffic	Increase in traffic congestion.	ployees travelling to and from the mine.

# ii. Final Site Map

When the mining permit is granted, the final maps showing the configurations of the planned projectwill be submitted to the DMRE. The map will be created to superimpose the proposed miningprojectand associated infrastructure with environmental concerns at the proposed project site.

# iii. Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

Positive and negative impacts associated with the proposed miningactivities include:

- Impacts on fauna;
- During site preparation, native natural vegetation is destroyed or lost;
- Impacts on endangered plant species during site preparation;
- Establishment and spread of declared weeds and alien invader plants;
- During land clearing, soils are physically disturbed;
- Dust emissions;
- Disturbance of geological formation as a result of rock material removal;
- Impact on the groundwater system during the projected development's invasive phase;
- Impact on surface water;

- Visual disturbance;
- During land clearing, soils are physically disturbed;
- Disturbance of the activities and/or livelihoods of nearby landowners;
- Direct employment and the development of skills; and
- Impacts on heritage and archaeological resources are possible.

Because these are short-term activities, the planned activities have a low significance, while socio-economic outcomes such as employment have a medium significance. The likelihood of an impact was calculated, and the majority of these actions can be regulated, and the repercussions can be mitigated or avoided. Mining operations have a modest environmental impact in general. Because the negative effects of planned activities can be controlled, avoided, or minimized, the layout does not need to be changed. All identified possible consequences will be controlled, avoided, or minimized through mitigation techniques. Because the negative effects of planned activities can be controlled, avoided, or minimized, avoided, or minimized, the layout doesnot need to be changed. All identified possible consequences will be controlled, avoided, or minimized through mitigation techniques.

# e. Proposed impact management objectives and the impact managementoutcomes for inclusion in the EMPr;

During the planned project's construction, operation, decommissioning, and rehabilitation, the EMPr tackles the project's environmental implications. The EMPr's goals will be to offer thorough information that will assist in the planning and design of SANRAL mining activities in order to minimize and/or mitigate environmental damage. The following environmental management objectives are recommended for the proposed mining development and associated infrastructure:

- Alien plant monitoring should be undertaken after construction, throughout the borrow pit's lifecycle, and during the rehabilitation phase.
- The impact area of development must be kept to a bare minimum and limited to a specific location. Contamination should be monitored and prevented, and necessary remedial activities should be taken.
- Reduce the influence of light and noise on receptors.
- Avoid having an impact on any potential heritage finds.
- Promote health and safety of employees.
- Manage soils to prevent erosion.
- Limit dust and other emissions to within allowable limits.

# f. Aspects for inclusion as conditions of Authorization.

The following conditions should be included in the Environmental Authorization for the proposed Mining project:

- The EMPR must be followed at all times during the mining phase as it is a contractual agreement;
- To oversee the application of the EMPR and audit reports that the applicant is required to maintain, an impartial environmental control officer (ECO) must be appointed;
- All contractors and employees of Atok Mining House (Pty) Ltd must be made aware of the EMPR and its requirements as well as the impact of not implementing the measures of the EMPR;
- Copies of the EMPR, Integrated Environmental Authorization and any emergency procedures and method statements, must be kept on site and be available on request of the Competent Authority.

# g. Description of any assumptions, uncertainties, and gaps in knowledge.

The EIA Regulations, 2014 outline specific requirements that a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures must be provided in the EIR.

The assessments are based on conservative procedures, and these procedures seek to determine any potential detrimental effects on the affected environmental features. However, the amount of these effects may be lesser than expected, while the benefits may be greater than expected.

This section summarizes the many constraints of the specialist studies that have been conducted, as well as the suitability of the predictive methods utilized for the assessment, if applicable. This was done to give the authorities, as well as interested and impacted parties, a sense of how much trust they can place in the impact assessment.

The EIA investigated the site's distinctive environmental context and the potential influence on major environmental media. A variety of desktop assessments were conducted, with the results being provided in this report.

As a result, the information supplied in this BAR and EMPr is deemed sufficient for decision-making.

# h. Reasoned opinion as to whether the proposed activity should or should not be authorized.

#### (i) Reasons why the activity should be authorized or not.

Generally, it is acknowledged that the proposed mining activities could expose nearby residents and businesses to several threats to the environment. However, all consequences can be reduced to negligible levels based on the results of this BA, which are reported in this report. Based on the above, it is therefore the opinion of the EAP that the activity should be authorized.

This report shows that the proposed mine has the potential to provide socio-economic benefits to the local and regional communities. The EAP therefore recommends that the proposed mining activities be approved on condition that the EMPR is strictly implemented and monitored for compliance on sensitive areas.

Not implementing the mining activities will result in a loss of information on mineral reserves present on the study area. Should economically feasible reserves exist on the study area and the applicant cannot mine, the opportunity to utilize the reserves in the future will be lost, i.e., the minerals will be sterilized, and resultant socio-economic benefits will be lost.

The proposed mining activities have the potential to negatively affect both the local social and biological environments. However, as the impact assessment demonstrates, these effects may be avoided, reduced, mitigated, and managed to low and extremely low levels.

# ii. Conditions that must be included in the authorization.

- The EMPR is a contractual document and must be implemented at all times during mining operations;
- To oversee the application of the EMPR and audit reports that the applicant is required to maintain, an impartial environmental control officer (ECO) must be appointed;
- It is necessary to inform all Atok Mining House (Pty) Ltd contractors and staff of the EMPR, its requirements, and the consequences of not adhering to its recommendations;
- Copies of the EMPR, Environmental Authorisation and any emergency procedures and method statements, must be kept on site and be available on request of the Competent Authority.

# i. Period for which the Environmental Authorization is required.

The Applicant requires the mining permit to be valid for a period of two years. Undertaking

The undertaking is provided at the end of the EMPr and is applicable to both the BAR and EMPr.

# j. Financial Provision

A total amount of R585 881.00 will be required to both manage and rehabilitate the environment in respect of rehabilitation. The breakdown is detailed in Table 12 below.

# I. Explain how the aforesaid amount was derived.

#### **Table 12: Quantum Calculation**

	CALCULATION OF THE QUANTUM							
Applicant:	ATOK MINING HOUSE (PTY) LTD				GP 30/5/1/3/2/10480 MP Ref No.:			
Evaluator:	AVELA MANTSHONTSHO			Date:	May-23			
			Α	В	C	D	E=A*B*C*D	
No.	Description	Unit	Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)	
	Dismantling of processing plant and related structures							
1	(including overland conveyors and powerlines)	m3	0	16	1	1	0	
2 (A)	Demolition of steel buildings and structures	m2	0	228	1	1	0	
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	336	1	1	0	
3	Rehabilitation of access roads	m2	500	41	1	1	20500	
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	395	1	1	0	
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	216	1	1	0	
5	Demolition of housing and/or administration facilities	m2	0	455	1	1	0	
6	Opencast rehabilitation including final voids and ramps	ha	0	238697	1	1	0	
7	Sealing of shafts adits and inclines	m3	0	122	1	1	0	
8 (A)	Rehabilitation of overburden and spoils	ha	0,5	159131	1	1	79565,5	
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0,012	198195	1	1	2378,34	
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	575653	1	1	0	
9	Rehabilitation of subsided areas	ha	0	133249	1	1	0	
10	General surface rehabilitation	ha	5	126059	0,5	1	315147,5	
11	River diversions	ha	0	126059	1	1	0	
12	Fencing	m	0	144	1	1	0	
13	Water management	ha	0	47931	1	1	0	
14	2 to 3 years of maintenance and aftercare	ha	0	16776	1	1	0	
15 (A)	Specialist study	Sum	0	0	1	1	0	
15 (B)	Specialist study	Sum	0	0	1	1	0	
					Sub Tot	al 1	417591,34	
1	Preliminary and General	Preliminary and General		50110,9608		actor 2	50110,9608	
2	Contingencies			41759,134		41759,134		
GN	Avela Mantshontsho		-		Subtota	al 2	509461,43	
TE	2023/05/22				VAT (1	5%)	76419,15	
					Grand T	otal	585881	

#### ii. Confirm that this amount can be provided for from operating expenditure.

Atok Mining House (Pty) Ltd has committed to financing the mining costs and the rehabilitation of the mining site has been concluded.

# I. Specific Information required by the competent Authority.

No other information was requested or required from the Competent Authority.

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

# 1. Impact on the socio-economic conditions of any directly affected person.

- Potential soil pollution which may result from any hydrocarbon spills where heavy machinery and vehicles are parked such as the hard park area because they contain large volumes of lubricating oils, hydraulic oils, and diesel to run. There is always a danger that these will malfunction or leak;
- Groundwater contamination brought on by chemicals including hydrocarbon-based fuels, oils, and lubricants that are spilled from heavy machinery, automobiles, and fuel storage areas.
- Visual effects include visibility to sensitive receptors and visual damage to the landscape because of mining operations.
- Noise and vibration impacts related to the usage of machinery, equipment, and vehicles that result in an increase in the ambient noise level and associated health concerns.
- Increase in dust pollution due to vegetation clearance and vehicles driving on gravel roads and mining.
- The quality of the surrounding air may be impacted by the gaseous emissions from machines and vehicles.
- Generation of additional general waste, litter and building rubble and hazardous waste.
- Minor impact on natural resources and service infrastructure due to the requirement for utilities like water, power, and sewage systems during the mining phase.
- Traffic entering and leaving the site, along with the existing traffic, will cause a little change in traffic patterns.
- Nuisance, health, and safety risks caused by increased traffic on and adjacent to the study area including cars, and heavy vehicles.
- There is a chance that mining activities and workers will start veld fires, which might harm or kill workers as well as nearby landowners, residents, and visitors.
- Risk to the public and workers is increased since they could fall into trenches and excavated areas if they aren't fenced off.
- The possibility of creating a small number of short-term jobs for the local population during

the mining phase.

• Positive multiplier effects will have a short-term, extremely small, and positive impact on the local economy.

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

Based on the desktop work completed, mitigation measures advocated in this report include no drill site being located within 100 meters of any designated heritage site (which may occur during the mining phase). If any paleontological or cultural artefacts are discovered, work must cease immediately, the site must be clearly marked, and SAHRA and LIHRA must be alerted promptly. Only SAHRA's permission is required to resume work at the discovery site.

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

This Draft BAR and EMPr has been compiled in accordance with the NEMA (1998), EIA Regulations (2014, amended April 2017) and MPRDA (2002). The EAP managing the application confirms that this BAR and EMPr is being submitted for Environmental Authorization in terms of the National Environmental Management Act, 1998 in respect of listed activities that have been triggered by application in terms of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (as amended). Should the DMRE require any additional information, this will be provided upon request. No reasonable or feasible alternatives exist for this Mining Permit Application and as such, motivation for no alternatives has been provided in the relevant sections above.

# PART B

# ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

## 1) Draft environmental management programme.

## a) Details of the EAP,

The details of the EAP are provided in section 1.1 of part A of this document.

## b) Description of the Aspects of the Activity

The requirement to describe the aspects of the activity that are covered by the final environmental management programme is already included in PART A.

#### c) Composite Map

Refer to APPENDIX B .

#### d) Description of Impact management objectives including management statements.

#### i) Determination of closure objectives.

- Restoration of damaged lands as a result of mining to a land capability capable f supporting and sustaining predetermined post-closure land uses;
- Removal of all infrastructure/equipment that cannot be beneficially re-used, in accordance with agreements, and restoration of disturbed land to its intended final use;
- Existing contaminated material must be removed from the affected locations;
- Establishment of ultimate landforms that are long-term stable and safe;
- Measures to accomplish specific closure-related performance objectives must be established and implemented.

Environmental management must be integrated, recognizing that all parts of the environment are interconnected, and it must consider the impact of actions on all components of the environment and all people in the environment by pursuing the best practical environmental alternative.

#### ii) Volumes and rate of water use required for the operation.

Volumes of water cannot be determined at this point.

#### iii) Has a water use license has been applied for?

A WULA is underway as the volume of water to be used during mining activities does vaguely trigger NWA listed activities. The Department of Water and Sanitation has also been consulted as a project stakeholder (see APPENDIX E).

iv) Impacts to be mitigated in their respective phases.

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

#### Table 13: Impacts to be mitigated.

Activity Whether listed or not listed). (E.g., Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etcetcetc.).	(e.g. dust, noise,	Phase In which impact is anticipated (e.g., Construction, commissioning, operational Decommissioning, closure, post-closure)		Mitigation Measure (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 Remedy through rehabilitation.		Time Period for Implementation
			Constructio	n Phase		
Construction of Infrastructure	Air Quality	ConstructionPhase	Local	Ensure that the areas of disturbance are minimised and restricted to the required footprint areas; and Ensure that dust suppressants are applied to exposed surfaces.	Dust Management Plan; and Dust Monitoring Programme inaccordance with NEM: AQA.	Daily

Tananaku and	ConstructionDhoos			Mine Dien Development	
Topography and Visual	ConstructionPhase	Local	Limit the footprint areas of the of	Mine Plan Development	On-going during Construction and
Environment			the surface infrastructure, where		Operational Phase
Environment			possible, especially the width of the haul roads;		Operational Phase
			Ensure that access and haul		
			roadsare contoured to limit		
			erosion fromsurface runoff,		
			preventing furtheralteration to the		
			topography; Establish vegetation,		
			wherepossible, to aid in screening		
			infrastructure;		
			Surface infrastructure should be		
			painted natural hues so as to		
			blendinto the surrounding		
			landscape; Pylons and metals		
			structures shouldbe galvanised		
			or painted with aneutral matt		
			finish; and		
			Limit construction activities at		
			night		
			and down lighting must be used		
			tominimise light pollution.		

Soils	ConstructionPhase	Local	Ensure soils are stripped and	Soil RehabilitationPlan;	Weekly during
			stockpiled prior to the excavation	Storm WaterManagement	construction an
			of infrastructure foundations; and	Planin accordance with	operational pha
				MPRDA Regulation56 (1)	
			Implement Storm Water	to (8); andSoil pollution	
			Management designs to prevent	and	
			erosion	erosion control.	
Fauna and	ConstructionPhase	Local	Vegetate open and exposed	Conservation Management	Weekly
Flora			areas toprevent soil erosion and	Plan;and	
			the establishment of alien	Alien Invasive	
			invasive vegetation;	Management Plan in	
				accordance with NEM: BA	
			Ensure a Storm Water	and ECA.	
			ManagementPlan is implemented;		
			and		
			Alien invasive vegetation to be		
			identified and removed		
			throughout		
			the LoM.		
Wetland and	ConstructionPhase	Local	Ensure the statutory buffers are	Storm WaterManagement	On-going and
Aquatic Ecology			implemented from the wetlands	Plan; and	Biannually duri
			systems and watercourses,	Aquatic	Life of Mine.
			unlessotherwise stated in the	Monitoring	
			IWUL; Ensure a Storm Water	Programme in	
			ManagementPlan is	accordance	
			implemented; and	withNWA.	
			Implement a biannual Aquatic		
			Monitoring Programme to monitor		

			potential impacts and implement		
			corrective actions, should it be		
			required.		
Surface	ConstructionPhase	Local	Ensure that the topsoil stockpiles	Storm WaterManagement	On-going during
Water	Construction nase	Local	arevegetated to prevent soil	Plan in accordancewith	Construction
Water			erosion; Implement Storm Water	NWA.	Phase.
			Management design to prevent		1 11036.
			erosion and divert dirty water to		
			the appropriate storage dams		
			(PCDs);		
			and		
			The design, construction,		
			operationand maintenance of		
			watermanagement facilities must		
			be in accordance with GN R 704		
			capacity requirements. The		
			PCDs must have a freeboard of		
			0.8 m and must be able to		
			contain a 1: 50-year, 24-hour		
			extreme rainfall event.		

Noise	Life of Mine	Project Area	Ensure construction activities	Regular Vehicle	Daily and according
			areonly undertaken during	Inspections inaccordance	to Maintenance Plan
			daylight hours;	withNEM: AQA and ECA.	during Construction
			Construction related machines		Phase.
			andvehicles should be serviced		
			on a regular basis to ensure		
			noise suppression mechanisms		
			areeffective (e.g. installed		
			exhaust mufflers); and		
			Ensure equipment and machinery		
			is		
			switched off when not in use.		
Heritage	Construction Phase	Local	Consultation with the bona fide	Entitlement Framework in	Prior to
			Next	Accordance withMPHRA.	Construction phase
			Of Kin must be undertaken in		
			accordance with the MPHRA		
			Regulations and any other		
	OperationalPhase		applicable legislation; and		
			Develop an entitlement		
			framework for the Next of Kin in		
			which the health and safety risks		
			are identified and remedial		
			preventative measures		
			are agreed upon.		

Construction of	Soils	ConstructionPhase	Local	Minimise topsoil stockpile	Soil RehabilitationPlan;	On-going and
stockpiles				heights asfar as possible;	Storm WaterManagement	Annually during
				Ensure soils are stripped in	Planin accordance with	Construction Phase
				accordance with the	MPRDA Regulation56 (1)	andOperational
		OperationalPhase		RehabilitationSoil Management	to (8); Soilpollution	Phase.
				Plan. It is recommended that the	and	
				topsoil (upper 0.3 m) and	erosion control.	
				subsoil (0.7 m to		
				0.9 m in thickness) of the soil		
				profile should be stripped and		
				stockpiled separately;		
				Ensure soils are stripped and		
				stockpiled prior to the excavation		
				of infrastructure foundations;		
				Ensure stockpiles are		
				maintained in a fertile and		
				erosion free state by sampling		
				and analyzing for macro nutrients		
				and pH on an annual basis;Traffic		
				and access to the stockpiles will		
				be restricted;		
				Ensure that the topsoil stockpiles		
				arevegetated to prevent soil		
				erosion and to reinstitute the		
				ecologicalprocesses within the		
				soil; and Implement Storm Water		
				Management designs to prevent		
				erosion.		

	Fauna andflora	ConstructionPhase	Limited	Vegetate open and exposed	Conservation Management	On-going duringLife
				areas toprevent soil erosion and	Plan;and	of Mine.
				the establishment of alien	Alien Invasive	
				invasive vegetation;	Management Planin	
				Ensure a Storm Water	accordance with NEM: BA	
				ManagementPlan is	and ECA.	
				implemented; and		
				Alien invasive vegetation to be		
				identified and removed		
				throughoutthe Life of Mine.		
,	Wetland and	Construction Phase	Local	Ensure the statutory buffers are	Storm Water Management	On-going and
	AquaticEcology			implemented from the wetlands	Plan;and	Biannually during
				systems and watercourses,	Aquatic	Life of Mine.
				unless otherwise stated in the	Monitoring	
				IWUL; Ensure a Storm Water	Programme in	
				ManagementPlan is	accordance withNWA.	
				implemented; and Implement a		
				biannual Aquatic Monitoring		
				Programme to monitor potential		
				impacts and implement		
				corrective actions, should it be		
				required.		

ſ	SurfaceWater	ConstructionPhase	Local	Ensure that the topsoil stockpiles	Storm WaterManagement	b) On-going
				arevegetated to prevent soil	Planin accordance with	during Construction
				erosion; Implement	NWA-GN R. 704;	Phase
				Storm Water		
				Management designs to prevent		
				erosion and divert dirty water to		
				theappropriate storage dams		
				(PCDs);and		
				The design, construction,		
				operationand maintenance of		
				watermanagement facilities must		
				be in accordance with GN R 704		
				capacity		
				requirements.		
	Groundwater	ConstructionPhase	Local	A groundwater monitoring system	Groundwater	On-going, Quarterly
				must be implemented and test	Monitoring	а
				thewater on a quarterly basis for	Programme;	nd
				changes in water quality and	Storm WaterManagement	Annually duringLife
		Operational Phase		water levels. Should impacts be	Plan; and	of Mine.
				identified, management	Numerical andconceptual	
				measures must be implemented	model inaccordance with	
				based on the contaminant or	NWA.	
				water level change;		
				Implement a Surface Water		
				Management Plan to minimise		
				thevolume of dirty water		
				produced, aswell as the		
				effectiveness of thecontainment		
				of dirty water, therebyreducing		
				the probability of contamination		

				of groundwater frominfiltration of		
				dirty surface water;		
				Refine and update the conceptual		
				and numerical models annually		
				forthe first four years and		
				thereafter every five-year		
				based on groundwater		
				monitoring results. This will help		
				to better quantify impacts to water		
				quantity and quality; and		
				All contaminant, waste and		
				hazardous waste storage facilities		
				and other contaminated water		
				storage areas (PCD) must be		
				linedto pro-actively prevent		
				infiltration of contaminated		
				seepage water.		
			OPERATION	AL PHASE		
Dirty Water	Wetlands and	OperationalPhase	Provincial	Ensure a Storm Water	Storm WaterManagement	On-going, Dailyand
Management System	AquaticEcology			Management Plan is	Plan;	Biannuallyduring
				implemented;		Life of Mine
					Dust ManagementPlan;	
				Dirty water from the open-pit	Dust Monitoring	
				mustbe diverted by channels and	Programme; and Aquatic	
				berms and separated from clean	Monitoring Programme in	
				water. Thedirty water must be	accordance withNWA.	
				stored in the PCD;		
				The operation and maintenance		
				of		
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				the PCD must be in accordance		
				with the NWA Regulations set out		
				in GN R704 and must have a		
				minimum freeboard of 0.8 m and		
				be able to contain a 1:50 year,		
				24-hour storm event; and		
				Implement a biannual Aquatic		
				Monitoring Programme to monitor		
				potential impacts and implement		
				corrective actions, should it be		
				required.		
Ē	SurfaceWater	OperationalPhase	Municipal	Diversion berms and pipelines	Storm WaterManagement	On-going and
				used for dewatering activities	Plan	Monthly during
				need to be sized based on the		Operational Phase.
				dewatering rates and volumes;	Surface WaterMonitoring	
					Programme inaccordance	
				The operation and maintenance	with NWA.	
				ofthe PCD must be in accordance		
				with the NWA Regulations set out		
				in GN R704 and must have a		
				minimum freeboard of 0.8 m		
				and be able to		
				contain a 1:50 year, 24-hour		
				storm event;		
				Monitor the dirty water		
				management facilities monthly to		
				identify potential leaks and		
				implement management		
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			measures to rectify potential		
			issues; and		
			Monitor surface water resources		
			up and downstream of the		
			Project area		
			to identify potential		
			contamination.		
Groundwater	OperationalPhase	Limited	Ensure that monitoring and	Storm Water	Monthly and
			maintenance of the dirty water	Management Plan	Quarterly during
			diversion channels and berms are	Groundwater Monitoring	Operational Phase.
			undertaken to ensure that they	Programme in accordance	
			are not silted up to allow for free	with NWA.	
			drainage;		
			Ensure that pipelines and		
			diversion channels and berms		
			are monitored for potential leaks		
			and structure failures;		
			Potential leaks and spills must be		
			contained and cleaned up		
			immediately, as well as the		
			leakage location repaired;		
			Ensure that a Storm Water		
			Management Plan is in place to		
			separate clean and dirty water;		
			and		
			Groundwater monitoring of the		
			waterquality and levels must take		
			placequarterly especially for the		
			water supply boreholes to ensure		

				a sustainable resource and		
				identify		
				impacts on local users.		
Pollution Control	Wetlands and	OperationalPhase	Provincial	Ensure a Storm Water	Storm WaterManagement	On-going, Dailyand
Dam	Aquatic Ecology			Management Plan is	Plan	Biannuallyduring
				implemented;		Life of Mine
					Dust ManagementPlan;	
				Dirty water from the open-pit		
				mustbe diverted by channels and	Dust Monitoring	
				berms and separated from clean	Programme; and Aquatic	
				water. Thedirty water must be	Monitoring Programme in	
				stored in the PCD;	accordance withNWA.	
				The operation and maintenance		
				of the PCD must be in accordance		
				with the NWA Regulations set out		
				in GN R704 and must have a		
				minimum freeboard of 0.8 m and		
				be able to contain a 1:50 year,		
				24-hour storm event; and		
				Implement a biannual Aquatic		
				Monitoring Programme to monitor		
				potential impacts and implement		
				corrective actions, should it be		
				required.		

SurfaceWater	OperationalPhase	Municipal	The operation and maintenance	Storm WaterManagement	On-going and
			ofthe PCD must be in	Plan	Monthly during
			accordance with the NWA		Operational Phase.
			Regulations set out in GN R704	Surface WaterMonitoring	
			and must have a minimum	Programme inaccordance	
			freeboard of 0.8 m and be able	with NWA.	
			to contain a 1:50 year, 24-hour		
			storm event; and		
			Monitor the dirty water		
			management facilities monthly to		
			identify potential leaks and		
			implement management		
			measures to rectify potential		
			issues.		
Groundwater	OperationalPhase	Limited	The operation and maintenance	Groundwater Monitoring	Monthly and
			ofthe PCD must be in accordance	Programme inaccordance	Quarterly duringLife
			with the NWA Regulations set out	withNWA.	of Mine.
			in GN R704;		
			The PCD must be monitored for		
			potential leaks and structure		
			failures;		
			Potential leaks and spills must be		
			contained and cleaned up		
			immediately, as well as the		
			leakage location repaired;		
			Monitor PCDs' water quality on a		
			quarterly basis to understand		
			water quality and potential		

				impacts on the groundwater should seepage occur; And Groundwater monitoring of the waterquality and levels must take		
				placequarterly to identify potential impacts and leaks or seepage.		
Stockpiles	Air Quality	OperationalPhase	Municipal	Monitor the establishment of vegetation	Dust Management Plan; and Dust Monitoring Programme in accordance with NEM: AQA.	Monthly during Operational Phase
	Topography and Visual Environment	OperationalPhase	Local	Ensure topsoil stockpiles are contoured and have a steepness of less than 18° to prevent slope failure and erosion and aid in vegetation establishment; Limit and reduce the stockpile heights as far as possible; Ensure that the topsoil stockpiles arevegetated; and	Mine Plan Development	On-going during Operational Phase.

				Establish and maintain	
				vegetation	
				screens.	
Soils	Operational	Local	Ensure stockpiles are	Storm WaterManagement Plan;	Annually and on-going
	Phase		maintained ina fertile	and	during Construction Phase
			and erosion free state		andOperational Phase.
			by sampling and	Soil RehabilitationPlan in	
			analyzing for macro	accordancewith MPRDA	
			nutrients and pH on an	Regulation 56 (1)	
			annual basis;	to (8); Soil pollution and erosion	
				control	
			Ensure topsoil		
			stockpiles are		
			vegetated to prevent		
			erosion;		
			Ensure access to the		
			stockpiles isrestricted		
			to prevent unauthorized		
			use and borrowing of		
			topsoil;		
			Ensure topsoil		
			stockpiles are clearly		
			demarcated; and		
			Implement Storm		
			Water		
			Management designs to		
			prevent erosion.		
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Wetlands and	Life of Mine	Local	Ensure a Storm Water	Storm Water	On-going and
Aquatic Ecology			Management	Management	Biannually during
			Plan is implemented; and	Plan Aquatic	
			Implement a biannual Aquatic	Monitoring	
			Monitoring Programme to monitor	Programme in accordance	
			potential impacts and implement	withNWA.	
			corrective actions, should it be		
			required.		
Surface	Operational	Local	Ensure a Storm Water	Storm WaterManagement	On-going and
Water	Phase		Management Plan is	Plan;	Monthly during
			implemented; and		Operational Phase.
				Surface WaterMonitoring	
			Monitor surface water resources	Programme inaccordance	
			up and downstream of the Project	with NWA.	
			area to identify potential		
			contamination.		
Groundwater	Operational	Limited	Buffer acid generating	Groundwater Monitoring	On-going and
	Phase		overburden material with acid	Programme inaccordance	Monthly during
			neutralizing material, where	withNWA.	operational phase
			possible;		
			Divert water run-off from the		
			stockpiles to the PCD to prevent		
			water ingress; and		
			Groundwater monitoring of the		
			water and levels must take place		
			water and levels must take place quarterly		

Concurrent	Air Quality	Operational Phase	Municipal	Ensure the rehabilitated areas	Dust Management Plan;	As required and
Rehabilitation		Decommissioning		are vegetated to prevent erosion	Dust Monitoring	Monthly during
		Phase		and surface exposure to winds;	Programme in	Operational Phase
				and	accordance with	and
					NEM: AQA	Decommissioning
				Monitor the establishment of		Phase.
				vegetation.		
	Topography and	OperationalPhase	Local	The open-pit must be backfilled;	Rehabilitation Planin	As required during
	Visual			and	accordance with ECA.	Operation Phase
	Environment	Decommissioning				and
		Phase		Topsoil must be backfilled over		Decommissioning
				the open-pit area and the area		Phase.
				vegetated.		
	Soils	Life of Mine	Very limited	All potential hydrocarbonspillages	Emergency Response	As required during
				and leaks must be cleaned up	Plan Vehicle Maintenance	Life of Mine.
				immediately and thesoils	Plan in accordance with	
				remediated;	MPRDA Regulation56 (1)	
					to (8);	
				Spillage control kits will be readily	Soil pollution and erosion	
				available on site to contain the	control andHazardous	
				mobilization of contaminants and	Substances Act 1973.	
				clean up spills;		
				All vehicles and machinery to be		

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		serviced in a hard park area or at		
		an off-site location; and		
		Vehicles with leaks must have		
		drip trays in place.		
	OperationalPhase	Ensure that the topography of	Soil RehabilitationPlan;	On-going and Prior
		rehabilitated areas takes the pre-		to vegetation
	Decommissioning	mining landscape into	Soil monitoringin	establishment
	Phase	consideration and that the	accordance with MPRDA	during Operational
		topography is free draining;	Regulation56 (1) to (8);	Phase;
			soil pollution and	Decommissioning
		Ensure that the soil layers are	erosion control.	Phase and Post-
		backfilled in reverse order of the		Closure Phase.
		stripping and the subsoil must		
		underlie the topsoil;		
		Ensure that the yellow and red		
		soils are placed in upland		
		landscape positions and wetland		
		soils placed in the lower landscape		
		positions;		
		It is recommended that the soil		
		covershould be at least 0.8 m in		
		depth, consisting of 0.5 m of		
		subsoil and		
		0.3 m of topsoil on top of the		
		reconstructed profile to mimic the		
		pre-mining land capability.		
		However, the soil cover must be		

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				at least 0.3 m depth in order to		
				sustain theidentified end land		
				use of grazing;and		
				Investigate soil quality prior to		
				establishment of vegetation on		
				rehabilitated areas through		
				representative sampling and		
				laboratory analysis. Soil fertility		
				and acidity must be corrected		
				prior to		
				vegetation establishment, if		
				required.		
	Surface	Operational Phase	Limited	Rehabilitation activities must be	Rehabilitation	Monthly during
	Water			monitored to ensure that the	Plan in accordance with	Operational Phase,
				pre-mining drainage pattern is	NEMA.	Decommissioning
				emulated, and that vegetation		Phase and Post-
				establishment is successful;		Closure.
		Decommissioning		The backfilled areas should be		
		Phase		vegetated as soon as possible to		
				prevent dust and siltation of the		
				water bodies;		
				Monitor surface water resources		
				up and downstream of the Project		
				areato identify potential		
				contamination;and		
				Where rehabilitation (grass		
				seeding of topsoil cover) is not		
				effective, the associated soil		
				erosion must be mitigated by		
				installing silt traps in		
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			affected areas.		
Groundwater	OperationalPhase	Local	Ensure that the backfilled	Rehabilitation Plan;and	As required and
			material is compacted where	Groundwater Monitoring	Quarterly during
	Decommissioning		possible and the pre- mining	Programme in	Operational Phase
	Phase		drainage pattern is emulated;	accordance with	and
			Groundwater monitoring of the	NWA.	Decommissioning
			water		Phase.
			quality and levels must take		
			place quarterly to identify		
			potential impactsand leaks or		
			seepage. The monitoring		
			programme will assist with the		
			identification of potential AMD		
			occurring. All contaminated water		
			must be contained in the PCD;		
			and		
			The backfill material must be		
			placed in such a manner to		
			reduce the potential leaching		
			impacts on the underlying		
			aquifers. Material with a high		
			neutralizing effect needs to be		

			placed at the bottom followed by		
			waste rock and coal slurry higher		
			up.The top layers can again be		
			material with a high neutralizing		
			capacity.		
			The top layer needs to ensure		
			free draining of the rain water		
			from the		
			rehabilitated areas.		
Fauna and	Operational Phase	Very limited	Vegetate disturbed and	Rehabilitation Plan;	As required and
Flora			rehabilitated areas with	And Alien	On-going during
	Decommissioning		indigenous vegetation; Alien	Invasive	Operational Phase,
	Phase		invasive vegetation to be	Managemen	Decommissioning
			identified and removed	t Plan in	Phase and Post-
			throughout the LoM; and	accordance	Closure.
			Establish and implement an	with	
			Alien	NEM:BA; and ECA.	
			Invasive Management Programme.		
Noise	ConstructionPhase	Project Area	Rehabilitation related machines	Regular VehicleInspections	Daily and
			and vehicles should be serviced	in accordance withNEM:	according to
			on a regular basis to ensure	AQA and ECA.	Maintenance Plan
			noise suppression mechanisms		during Operational
	OperationalPhase		areeffective (e.g. installed		Phase.
			exhaust mufflers); and		
			Ensure equipment and machinery		
			is switched off when not in use.		
l	l	DECOMMISSIO	NING PHASE		

Demolition of	Air Quality	Decommissioning	Local	The area of disturbance must be	Dust Management Plan.	On-going during
Infrastructure		Phase		restricted to the required footprint	Dust	Decommissioning
				size;	Monitoring	Phase.
				Demolition activities should be	Programme in accordance	
				undertaken judiciously during	with	
				windy periods (winds greater	NEM: AQA.	
				than 5.4 m		
				per second); and		
				The area of disturbance must		
				be		
				minimized to limit the area		
				exposedto wind erosion.		
	Topography and	Decommissioning	Limited	Demolish all unnecessary	Rehabilitation Plan;and	As required during
	Visual	Phase		infrastructure;	Closure Plan accordance	Decommissioning
	Environment			Ensure that all demolished	with ECA.	Phase and Post-
				infrastructure is removed from		Closure.
				site's surface; and		
				Ensure that rehabilitated areas are		
				rehabilitated and vegetated.		
	Soils	Decommissioning	Very limited	Ensure that demolished	Emergency Response	As required during
		Phase		infrastructure is removed off-site	Vehicle Maintenance	Life of Mine.
				anddisposed of by a reputable	Plan	
				contractor;	in accordance with	
				All potential hydrocarbonspillages	MPRDA Regulation56 (1)	
				and leaks must be cleaned up	to (8); Soil pollution and	
				immediately and thesoils	erosion control;	
				remediated;	Hazardous Substances	
				Spillage control kits will be readily	Act	
				available on site to contain the	1973	
				mobilization of contaminants and		
				clean up spills;		

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				All vehicles and machinery to be		
				serviced in a hard park area or at		
				an off-site location; and		
				Vehicles with leaks must have		
				drip		
				trays in place.		
	Fauna and	Decommissioning	Limited	Restrict vehicles and machinery	Conservation Management	On-going during
	Flora	Phase		toexisting roads and designated	Plan Alien Invasive	Decommissioning
				areas to prevent vegetation	Management Planin	Phase and LoM.
		Post-Closure		destruction;and	accordance withNEM:BA	
				Alien invasive vegetation to be	and ECA.	
				identified and removed		
				throughout the LoM and		
				Establish and implement an		
				Alien		
				Invasive Management		
				Programme.		
	Wetlands and	Decommissioning	Provincial	Restrict vehicles and machinery	Storm WaterManagement	On-going and
	AquaticEcology	Phase		toexisting roads and designated	Plan Aquatic Monitoring	Biannually during:
	,			areas to prevent vegetation	Programme in acordance	LoM.
				destruction;	with NWA.	
				All potential hydrocarbonspillages		
				and leaks must be cleaned up		
				immediately and thesoils		
				remediated;		
				Spillage control kits will be		
				readily available on site to contain		

			the mobilization of contaminants		
			and clean up spills;		
			All vehicles and machinery to be		
			serviced in a hard park area or at		
			an off-site location; and		
			Implement a biannual Aquatic		
			Monitoring Programme to monitor		
			potential impacts and implement		
			corrective actions, should it be		
			required.		
Surface	Decommissioning	Local	Reputable and accredited	IWWMP; Emergency	As required during
Water	Phase		contractors will be used for the	Response Plan Vehicle	Life of Mine.
			transport and disposal of wastes	Maintenance Planin	
			anddemolished material off-site;	accordance withNWA.	
			All potential hydrocarbon		
			spillages and leaks to be cleaned		
			up immediately and the soils		
			remediated;		
			Spillage control kits will be readily		
			available on site to contain		
			the		
			mobilization of contaminants		
			and clean up spills; and		
			Vehicles with leaks must have		
			driptrays in place.		
Noise	Decommissioning	Project Area	Ensure demolition activities only	Regular Vehicle	Daily and
	Phase		takeplace during daylight hours;	Inspectionsin accordance	According to
			Demolition related machines and	with NEM: AQA and ECA.	Maintenance Plan
			vehicles should be serviced on		during
			aregular basis to ensure noise		Decommissioning
			suppression mechanisms are		Phase.
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				effective (e.g., installed		
				exhaustmufflers); and		
				Ensure equipment and machinery		
				is		
				switched off when not in use.		
Final Rehabilitation	Air Quality	OperationalPhase	Local	Replacement of overburden and	Rehabilitation Plan in	On-going and
				topsoil should be undertaken	accordance withNEM:	Monthly during:
		Decommissioning		judiciously during windy days	AQA	Operational Phase,
		Phase		(winds speed greater than 5.4 m		Decommissioning
		1 11050		per second);		Phase and Post-
				Ensure the rehabilitated areas		Closure.
				arevegetated to prevent erosion		Closure.
				and surface exposure to winds;		
				and		
				Monitor the establishment		
				of vegetation.		
	Topography and	Decommissioning	Local	The open-pit must be backfilled	Rehabilitation Plan;and	As required during
	Visual	Phase		asmuch as possible;	Closure Planin	Decommissioning
	Environment			The rehabilitated area must be	accordance with NEMA.	Phase and Post-
				contoured and profiled to create		Closure.
				afree- draining topography		
				emulatingthe pre-mining		
				topography; and Topsoil must		
				be backfilled over the		
				rehabilitated area and vegetated.		

Soils	Decommissioning	Very limited	All potential hydrocarbonspillages	Emergency	As required during
	Phase		and leaks must be cleaned up	Response	Life of Mine.
			immediately and thesoils	Vehicle	
			remediated;	Maintenance	
			Spillage control kits will be readily	Planin	
			available on site to contain the	accordance with	
			mobilization of contaminants and	MPRDA	
			clean up spills;	Regulation56	
			All vehicles and machinery to be	(1) to (8), Soil	
			serviced in a hard park area or at	pollution	
			an off-site location;	and	
			Storage of hydrocarbons	Erosion control, and	
			and	HazardousSubstances Act	
			explosives must be	1973.	
			managed according to the		
			HazardousSubstances Act, 1973		
			(Act No. 15 of 1973); and		
			Vehicles with leaks must have		
			drip		
			trays in place.		
Soils	Decommissioning	Very limited	Ensure that the topography of	Soil RehabilitationPlan;	On-going andprior
	Phase		rehabilitated areas takes the pre-	Soil monitoring in	to vegetation
			mining landscape into	accordance with MPRDA	establishment
	Post Closure		consideration and that the	Regulation56 (1) to (8),	during Operational
			topography is freedraining;	Soilpollution anderosion	Phase,
			Ensure that the soil layers are	control.	Decommissioning
			backfilled in reverse order of the		Phase and Post-
			stripping and the subsoil must		Closure.
			underlie the topsoil;		
			Ensure that the yellow and red		
			soils are placed in upland		

		landscape positions and wetland	
		soils placed inthe lower	
		landscape positions;	
		It is recommended that the soil	
		covershould be at least 0.8 m in	
		depth, consisting of 0.5 m of	
		subsoil and	
		0.3 m of topsoil on top of	
		the reconstructed profile to mimic	
		the pre-mining land capability.	
		However, the soil cover must be	
		at least 0.3 m depth in order to	
		sustain theidentified end land	
		use of grazing;	
		Investigate soil quality prior to	
		establishment of vegetation on	
		rehabilitated areas through	
		representative sampling and	
		laboratory analysis. Soil fertility	
		and acidity must be corrected	
		prior to vegetation establishment,	
		if required; and	
		Monitor vegetation establishment.	

Fauna and	OperationalPhase	Local	Vegetate disturbed and	Rehabilitation Plan;and	As required andOn-
Flora			rehabilitatedarea with indigenous	Alien InvasiveManagement	going during
	Decommissioning		vegetation; Monitor	Planin accordance with	Operational Phase,
	Phase		vegetation establishment	NEM:BA and ECA.	Decommissioning
			and implement erosion control		Phase and Post-
			measures, if required;		Closure.
			Alien invasive vegetation to be		
			identified and removed		
			throughout		
			the LoM; and		
			Establish and implement an		
			Alien		
			Invasive Management		
			Programme.		
SurfaceWater	OperationalPhase	Local	Rehabilitation activities must be	Rehabilitation Planin	Monthly during
			monitored to ensure that the pre-	accordance with NEMA.	Operational Phase,
	Decommissioning		mining drainage pattern is		Decommissioning
	Phase		emulated, and that vegetation		Phase and
			establishment is successful;		
			The backfilled areas should be		o Post-Closure.
			vegetated as soon as possible to		
			prevent dust and siltation of the		
			water bodies;		
			Monitor surface water resources		
			up and downstream of the Project		
			area to identify potential		
			contamination and residual		
			impacts; and		
			Where rehabilitation (grass		
			seeding of topsoil cover) is not		
			effective, the associated soil		

		1	· · · · ·		
			erosion must be mitigated by		
			installing silt traps in		
			affected areas.		
Groundwater	Operational Phase	Municipal	Ensure that the backfilled material	Rehabilitation Plan;	Quarterly and as
Gloundwater	Operational Filase	wuncipal			-
	<b>D</b>		is compacted where possible	and	required during
	Decommissioning		and the pre-mining drainage	Groundwater Monitoring	Operational Phase
	Phase		pattern is emulated;	Programme inaccordance	and
			Groundwater monitoring of the	with NWA.	Decommissioning
			waterquality and levels must take		Phase.
			placequarterly to identify potential		
			impactsand leaks or seepage.		
			The monitoring programme will		
			assist with the identification of		
			potential AMD occurring. All		
			contaminated water must be		
			contained in the PCD;		
			The rehabilitated voids must be		
			flooded as soon as possible to		
			create anaerobic conditions to		
			reduce the amount of time the		
			potential acid producing material		
			is exposed to oxygen. This will		
			reduce the potential AMD risk and		
			volumes; and		

			The backfill material must be		
			placed in such a manner to		
			reduce the potential leaching		
			impacts on the underlying		
			aquifers. Material with a high		
			neutralizing effect needs to be		
			placed at the bottom followed by		
			waste rock and coal slurry higher		
			up.The top layers can again be		
			material with a high neutralizing		
			capacity. Thetop layer needs to		
			ensure free draining of the rain		
			water from the		
			rehabilitated areas.		
Noise	OperationalPhase	Project Area	Rehabilitation related machines	Regular Vehicle	Daily and
			and vehicles should be serviced	Inspections in	According to
	Decommissioning		on a regular basis to ensure	accordance withNEM: AQA	Maintenance Plan
	Phase		noise suppression mechanisms	and ECA.	during
			areeffective (e.g. installed		Decommissioning
			exhaust mufflers); and		Phase.
			Ensure equipment and machinery		
			is		
			switched off when not in use.		
		POST-CLOSU	RE PHASE		

Impacts on thePost-	Air Quality	Post-ClosurePhase	Local	Ensure vegetation is established	Post ClosureMonitoring	Monthly duringPost-
Mining Landscape				across all disturbed and	and	Closure.
				rehabilitated	Maintenance Plan in	
				areas; and	accordance with	
				Monitor vegetation establishment.	NEM: AQA.	
	Topography and	Post-ClosurePhase	Local	Should water pool on the	Post rehabilitation	Monthly duringPost-
	Visual			surface, the drainage lines must	monitoring plan in	Closure.
	Environment			be rehabilitated further and	accordance withNEMA.	
				shaped toensure a free-draining		
				topography; and		
				Monitor vegetation establishment		
				and potential soil erosion. Should		
				it be required, vegetation		
				establishment and erosion		
				control		
				Measures must be implemented.		
	Soils	Post-ClosurePhase	Very Limited	Ensure that the topography of	Post-rehabilitation	Annually during
				rehabilitated areas is free	monitoring plan in	Post-Closure.
				draining;	accordance with MPRDA	
					Regulation56 (1) to (8) and	
				Model post-mining landforms to	soil pollution and erosion	
				establish post-mining landscape	control.	
				stability;		
				Implement erosion prevention		
				techniques, if required;		
				Establish clear medium and		

			long-term targets for the post-		
			mining landcapability and land		
			use; and Monitor vegetation		
			establishment.		
Fauna and	Post-ClosurePhase	Municipal	Monitor vegetation establishment	Rehabilitation Plan;and	Monthly and as
flora			and implement erosion control	Alien Invasive	required during
			measures, if required;	Management Planin	Post-Closure.
				accordance with NEM:BA	
			Alien invasive vegetation to be	and ECA.	
			identified and removed		
			throughout the LoM; and		
			Establish and implement an		
			Alien		
			Invasive Management		
			Programme.		
Wetlands	Post-ClosurePhase	Municipal	Ensure a Storm Water	Storm Water	On-going and
and			ManagementPlan is	Management Plan	Biannually during
Aquatic Ecology			implemented and direct all	Aquatic	Post-Closure.
			decant to a PCD; and	Monitoring Programme in	
			Implement an Aquatic	accordance with	
			Monitoring Programme to	NWA.	
			monitor potential impacts and		
			implement corrective		
			actions, should it be required.		

Groundwater	Post-ClosurePhase	Municipal	Groundwater monitoring	Post-Closure Monitoring	Quarterly during
			of the water levels and	and	Post-Closure.
			quality must be	Maintenance Plan;	
			implemented, as well as the	and Rehabilitation	
			decant point once decanting	Plan in Accordance with	
			commences. Passive or active	NWA.	
			treatment options must be		
			implemented where the water is		
			an unacceptable quality for		
			release into the environment.		
 Surface	Post-ClosurePhase	Provincial	Water quality monitoring must	Surface WaterMonitoring	Quarterly during
water			continue post-closure to allow for	Programme; and	Post-Closure.
			theearly detection of potential	Rehabilitation	
			decant and to enable mitigation	Plan in accordance with	
			measures tobe implemented.	NWA.	
			Passive or active treatment		
			options must beimplemented		
			where the water is an		
			unacceptable quality for release		
			into the environment.		
	Post-ClosurePhase	Municipal	Rehabilitation activities must be	Rehabilitation Plan in	Quarterly during
			monitored to ensure that the	Accordance withNWA.	Post-Closure.
			surface profile is free draining;		
			and		
			Where rehabilitation (grass		
			seeding of topsoil cover) is not		
			effective, the associated soil		
			erosion must be		
			mitigated by installing silt		

application can move    Before miningcan
forward oncea place has begin, the necessary
been agreed upon. financial resources
Use existing roads or tracks     for restoration must
wherepossible. be secured.
Raised blade clearing will be     To avoid having to
used where track clearance apply for a Section 21
is required to reduce
disturbance and enhance (c) and I Water Use
restoration work. Significant License, activities
vegetation will be avoided,
such astrees and huge shouldkeep clear of shrubs.
To avoid night-time noise     pans and outside of
disturbances and the 32 m river buffer.
encounters withanimals,
site operations will take
place during the day
(07h00– 17h00).
To avert deaths from car
collisions, vehicle speeds will
be limited, particularly in
heavily vegetated areas.
Raised blade clearing is
requiredwhere track
clearing is critical to
minimize disturbance and
aid recovery.
All compacted roads and drill
pads will be destroyed and
replanted as part of the renovation.
To reduce night-time
• To reduce high-line noise disturbances, site
operations willtake place
throughout the day
(07h00–17h00).
Farm owners and qualified
employees must agree on
accesscontrol protocols.
An HIA must be completed
prior tothe construction of
new access roads, and
mitigation and/or
management measures for
the protection of such

				resources must be adopted.		
Site establishment	Construction	Approximately 4 00 m <sup>2</sup>	<ul> <li>Vegetation removal in the drill padarea will be minimized.</li> <li>To minimize disturbance and promote recuperation, elevated blade clearing should be done forthe entire drill pad if possible.</li> </ul>	<ul> <li>Miningmust be undertaken in line with theapproved PWP.</li> </ul>	Immediately following the conclusion of miningactivityin a given area.	

Exploration drilling       Operational	Included in the	•	The design of the drill fluid sump must incorporate effective fauna egress to avoid entrapment. A fire emergency procedure will be developed to contain and minimize destruction of flora and faunal habitat by fire. Lower blade clearing will be done before topsoil stripping if the drill pad has been cleared of all vegetation. Topsoil will be scraped and stockpiled upslope of the pad, including any residual vegetation. To prevent soil erosion, the stockpile will be designed to redirect runoff around the drill pad. Where possible, topsoil will be stripped to a depth of 10cm. Lower blade removal vegetation will be blended with topsoil to boost organic content and maintain the seed bank, which will improve restoration. Topsoil will be stockpiled to a maximum height of 1.5 m with a side slope of not more than 1:3. Mechanical erosion control methods (e.g., geotextiles) will be implemented if needed. To regulate vehicle dust emissions and other construction operations, wet dust suppression will be used. To save water, a suitable, low- impact chemical suppression option must be explored depending on the requirement and quantity of water used for wet suppression. An HIA must be completed prior to the site's formation, and mitigation and/or management measures for the protection of such resources must be adopted.	•	The applicant must follow the NEMA Section 2 Principle and guarantee that a cradle- to-grave approach to waste management is used and that all activities are carried out with caution. Wherever possible, undesirable consequences must be prevented ahead of time. The applicant must always comply with the conditions of the EA.	Immediately following the
and core sample	site	-	regular basis to ensure that leaks	-	the NEMA Section 2 Principle	conclusion of miningactivity
	establishment		regular basis to ensure that leaks		and ensure that a cradle-to-	in a given area.

collection and storage.		size of 6000 m <sup>2</sup> .	<ul> <li>are detected and repaired as soon as possible.</li> <li>Enough waste receptacles will be provided.</li> <li>Separation of trash will be done at the source, and separate receptacles will be provided (i.e., general waste, recyclables and hazardous waste).</li> <li>Animals will not be able to access receptacles overnight since they will be closed (i.e., provided with a locking lid).</li> <li>Waste will be removed and disposed of at a properly permitted landfill (facility disposal licenses will be verified), with recyclables going to a permitted recycling facility.</li> <li>Wet dust suppression will be undertaken when required to manage vehicle dust emissions.</li> <li>Chemical suppression alternatives must be explored depending on the demand and quantity of water utilized for wet suppression.</li> <li>Site activities will be conducted during the day (07h00-17h00) to avoid night-time noise disturbances.</li> </ul>	<ul> <li>grave followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result, they must be addressed proactively to avoid potential negative effects.</li> <li>The applicant must always comply with the conditions of the EA.</li> </ul>	
			<ul> <li>avoid night-time noise disturbances.</li> <li>Farm owners must agree on access control protocols.</li> <li>The miningareas must be clearly demarcated.</li> </ul>		
			• DECOMMISSIONING		
Removal of temporary infrastructure	Decommissioning	Included into the site establishment size of m <sup>2</sup> .	<ul> <li>To eliminate the risk to fauna, drill holes must be temporarily sealed once drilling is completed and must stay plugged until they are permanently plugged below ground.</li> <li>Drill holes must be permanently capped as soon as possible.</li> </ul>	The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle-to- grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach.	Immediately following the conclusion of miningactivityin a given area

<ul> <li>Wet dust suppression will be undertaken to manage vehicle dust emissions.</li> <li>Chemical suppression alternatives must be explored depending on the demand and quantity of water utilized for wet suppression.</li> <li>All fuel storage tanks will be emptied prior to removal.</li> <li>Waste will be removed and disposed of at a properly permitted landfill (facility disposal licenses will be verified), with recyclables going to a permitted recycling facility.</li> <li>Hand seeding exposed areas with indigenous grass species identified by a certified ecologist will be used to re-vegetate.</li> </ul>	
<ul> <li>Re-vegetation efforts will be monitored every second month for six months after initial seeding.</li> </ul>	

#### e) Impact Management Outcomes

Table 14: Impact management outcomes.

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
All activities throughout the Life of Mine.	Dust generation	(8) dust buckets should be installed, for each direction;	Environmental Manager; Environmental Control Officer; Air Quality Specialist	Dust buckets must be monitored every month, with a report compiled every quarter. Should the reports indicate that the NEM: AQA NDCR are exceeded, additional mitigation measures must be implemented.	Dust buckets must be Monitored every month, with a report compiled every quarter. Should the reports indicate that the NEM: AQA NDCR are exceeded, additional mitigation measures must be implemented.
	Loss of soil recourses and land capability	Inspection of stripping depths and separation of topsoil and subsoil during	Environmental Control Officer; Soil Specialist.	Inspection of stripping depths must be on-going during site clearance activities and stockpiling to ensure that soils are stored separately. Stockpiles should be monitored monthly to manage potential soil erosion. The testing and analysis for macro nutrients and pH must be sampled on an annual basis and results kept planning for rehabilitation. The rehabilitation activities must be monitored, and random samples selected for to test for soil thickness. The land must be shaped and sampled, and remediation techniques implemented, if necessary, prior to vegetation establishment.	Inspection of stripping depths must be on-going during site clearance activities and stockpiling to ensure that soils are stored separately. Stockpiles should be monitored monthly to manage potential soil erosion. The testing and analysis for macro nutrients and pH must be sampled on an annual basis and results kept planning for rehabilitation. The rehabilitation activities must be monitored, and random samples selected for to test for soil thickness. The land must be shaped and sampled, and remediation techniques implemented, if necessary, prior to vegetation establishment.

Biodiversity.	SSC must be rescued and relocated, should they occur within the disturbed areas; Faunal and Floral SSC in the Project area, but not within the directly disturbed mine areas, should be monitored, particularly the Grass Owl, Serval, Hedgehog and Giant Bullfrog populations; Alien invasive vegetation must be controlled on a monthly basis.		two years and especially during the wet season. Results of the monitoring must be recorded and compared to previous years' results to keep track of the populations of the faunal and floral species. Monthly monitoring for alien invasive vegetation must take place and managed according to the NEM:BA requirements.	Monitoring must take place at least in two years and especially during the wet season. Results of the monitoring must be recorded and compared to previous years' results to keep track of the populations of the faunal and floral species. Monthly monitoring for alien invasive vegetation must take place and managed according to the NEM:BA requirements.
contamination and sedimentation of wetlands and aquatic ecosystems.	be tested for: In situ water quality must be analyzed;	Environmental Manager; Environmental Control Officer	from the onset of the Construction Phase and continue throughout the LoM. The monitoring must take place biannually, once during high flow and once during low flow. A report must be compiled annually and take cognizance of previous years' monitoring results to track and identify potential impacts.	The Aquatic Ecology Monitoring Programme must be implemented from the onset of the Construction Phase and continue throughout the LoM. The Monitoring must take place biannually, once during high flow and once during low flow. A report must be compiled annually and take cognisance of previous years' monitoring results to track and identify potential impacts.
surface Water resources.	constituents must	Environmental Manager; Environmental Control Officer.	place from the onset of the Construction Phase, throughout the LoM and for a period of 3 years following closure. Sampling must be undertaken monthly during the Construction Phase, as well as during the initial stages of the	Surface water monitoring must take place from the onset of the Construction Phase, throughout the LoM and for a period of 3 years following closure. Sampling must be undertaken monthly during the Construction Phase, as well as during the initial stages of the Operational

		electrical conductivity and TDS.			impacts to the surface water quality, sampling can be reduced to a quarterly basis. All sampling results must be recorded to track potential quality changes or deterioration.	Phase. Should the water sampling indicate that there are no impacts to the surface water quality, sampling can be reduced to a quarterly basis. All sampling results must be recorded to track potential quality changes or deterioration.
					transparent communication lines are two ways to keep things under control.	
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of fauna	Construction.	•	Control by clearly delineating miningarea. Limiting activities to the daytime and establishing open and transparent communication lines are two ways to keep things under control.	Remain within the ambits of thePWP and EA.
	Potential destruction of heritage resources.	Loss of cultural and/or heritage significance.	Construction.	•	Control by clearly delineating miningarea.	Comply with SAHRA requirements. No damage to heritage and cultural significantsites.
Site establishment	Destruction and/or disturbance of on- site fauna and flora.	Loss of flora and fauna.	Construction.	•	Control by clearly delineating miningarea.	Remain within the ambits of thePWP and EA.
	Soil compaction and erosion are caused by soil disturbance and topsoil stockpiling.	Loss of soil resources.	Construction.	•	Control by clearly delineating miningarea. Control by putting in place a soil management plan that ensures proper topsoil removal, stockpiling, and rehabilitation in accordance with the EMP.	<ul> <li>Remain within the ambitsof the PWP and EA.</li> <li>Retain topsoil integrity forreuse in rehabilitation.</li> </ul>

Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	Dust emissions.	Construction.	When dust suppression measures, such as wet suppression, are needed, controlcan be achieved.	<ul> <li>Remain in the areadesignated for prospecting.</li> <li>Remain in the NEM:AQA Dust Regulation guidelines for rural communities.</li> </ul>
Visual impact affecting visual character and "sense of place".	Loss in aesthetics	Construction.	<ul> <li>Control by clearly delineating miningarea.</li> <li>Control is achieved by the use of environmental induction and toolbox lectures, as well as a well-designed system.</li> </ul>	<ul> <li>Remain within the ambitsof the PWP and EA.</li> <li>There will be no vegetationclearance outside of the delineated zones.</li> </ul>
Increased activity, theft, and	Increase in petty crimes.	Construction.	Limiting activities to the daytime     and establishing open and	Maintain a 100% crime-free area within the control of the
opportunistic crime as a result of an influx of job seekers to the site.	cimes.		transparent communication lines are two ways to keep things under control.	miningactivities and applicant.
Potential destruction of heritage resources.	Loss of cultural and/or heritage significance.	Construction.	<ul> <li>Control by clearly delineating miningarea</li> <li>Implement environmental induction and toolbox discussions to maintain control.</li> </ul>	Comply with SAHRA requirements. No damage to heritage and cultural significant sites.
Water and soil pollution resulting from disposal of drill fluids.	Loss of soil and water resources.	Operational.	<ul> <li>Control by clearly delineating miningarea</li> <li>Implement environmental induction and toolbox discussions to maintain control.</li> <li>Control by implementing a soil management programme to ensure correct topsoil removal, stockpiling and rehabilitation as per the EMP. Control by implementing NWA GN704 water management principles.</li> </ul>	<ul> <li>Remain within the ambits of the PWP and EA.</li> <li>Retain topsoil integrity for reuse in rehabilitation.</li> </ul>
Continued soil erosion from topsoil stockpile and soil compaction from drill pad platform.	Loss of soil resources.	Operational.	<ul> <li>Control by clearly delineating miningarea</li> <li>Control by putting in place a soil management plan that ensures proper topsoil removal, stockpiling, and rehabilitation in</li> </ul>	<ul> <li>Remain within the ambits of the PWP and EA.</li> <li>Retain topsoil integrity for reuse in rehabilitation.</li> </ul>

1				acc	cordance with the EMP.		
	Dust emissions from drilling and general site activities (including vehicle entrained dust).	Increase in dust emissions.	Operational.	•	Control by implementing dust suppression methods, e.g., wet suppression, when needed.		<ul> <li>Remain in area designated for prospecting.</li> <li>Remain within the NEM:AQA Dust Regulation guidelines for rural communities.</li> </ul>
	Visual impact affecting visual character and "sense of place".	Loss in aesthetic value.	Operational.	•	Control by clearly delineating miningarea Control by implementing EMP conditions.		<ul> <li>Remain within the ambits of the PWP and EA.</li> <li>No removal of vegetation outside demarcated areas.</li> </ul>
	Vehicle traffic and drill noise impact affecting wildlife game farm animals.	Loss of fauna.	Operational	•	Control by clearly delineating miningarea Implement environmental induction and toolbox discussions to maintain control.		<ul> <li>Remain within the ambits of the PWP and EA.</li> </ul>
			DECOMMISSIONIN	١G			
Removal of temporary infrastructure.	Destruction and/or disturbance of on- site fauna.	<ul> <li>Loss of fauna and flora.</li> <li>Loss of sensitive environments.</li> </ul>	Decommissioning.	•	Control by clearly delineating miningarea Implement environmental induction and toolbox discussions to maintain control. Limiting activities to the daytime and establishing open and transparent communication lines are two ways to keep things under control.	•	Remain within the ambits of the PWP and EA.
	Dust emissions from drilling and general site activities (including vehicle entrained dust).	Increase in dust emissions.	Decommissioning.	•	Control by implementing dust suppression methods, e.g., wet suppression, when needed.	•	Remain within the ambits of the PWP and EA. Remain within the NEM:AQA Dust Regulation guidelines for rural communities.

Poor access control resulting in impacts on cattle movement, breeding and grazing.	Loss of cattle.	Decommissioning.	•	Control by clearly delineating miningarea Implement environmental induction and toolbox discussions to maintain control. Limiting activities to the daytime and establishing open and transparent communication lines are two ways to keep things under control.	•	Remain within the ambits of the PWP and EA.
Potential water and soil pollution resulting from hydrocarbon spills.	Loss of soil and water resources.	Decommissioning.	•	Control by clearly delineating miningarea Implement environmental induction and toolbox discussions to maintain control. Control by implementing a soil management programme to ensure correct topsoil removal, stockpiling and rehabilitation as per the EMP.	•	Remain within the ambits of the PWP and EA

### f) Impact Management Actions

Table 15: Impact management actions.

Activity	Potential Impact	Mitigation
	Construction Phase	
Site clearance for road construction, powerlines, water	Loss of vegetation and subsequent loss of habitat for	a. Removal of vegetation should be restricted to the relevant
pipelines, Construction of infrastructure and the plant	fauna. The indigenous and natural vegetation will be	infrastructure footprints only;
	impacted upon within the proposed open casted mining	b. Topsoil should be stored separately to be used in
	area as a result of clearance of vegetation due to mining.	rehabilitation and landscaping,
	Noise generated by the mining and mining related	c. Transformation of natural areas should exclude any areas
	activities may frighten animals which may leadto injuries,	designated as having high or very high sensitivities;
	deaths as well as the animalsmigrating away from the site.	d. Prevent all effluent from the mining activities from entering
		the wetland habitat
		e. Management of the topsoil stockpile to preserve the
		seedbed;
		f. Fence development footprint area prior to commencement
		construction;
		g. No off-road driving into natural vegetation
		h. Implement alien invasive species eradication program.
Site clearance for road construction, powerlines, plant,	Loss of soil resource and land use	a. Limiting the area of impact to as small a footprint as
ttrenches and foundations for surface infrastructure		possible, inclusive of waste management facilities, resource
development, Topsoil stripping		stockpiles and
and Stockpiling		the length of servitudes, access and haulage ways and
		conveyancing systems wherever possible;
		b. Implement a soil utilization plan;

		<ul> <li>c. Restriction of vehicle movement over unprotected or sensitive areas, this will reduce compaction; and Topsoil to be stripped and stockpiled separately.</li> </ul>
Site clearance	Increased risk of erosion	<ul> <li>a. Minimise the construction footprint within any wetland areas. Clearly demarcate the required construction servitude and maintain allactivities within the demarcated area;</li> <li>b. Maintain flow connectivity in any valley bottom wetlands during the construction phase by temporarily diverting streams around the construction area;</li> <li>Install erosion prevention measures prior to the onset of construction activities;</li> </ul>
Stripping, dumping activities and vehicular movements on dust roads	Increase in ambient dust levels	<ul> <li>a. Regular watering of the site roads;</li> <li>b. Dressing off of tip faces, unused roads and disturbed areas;</li> <li>Minimising unnecessary disturbance of non- operational areas;</li> <li>d. Use of chemical additives to control dust to be employed if necessary.</li> </ul>
Trenching activities, Equipment use andvehicular activity	Increase in ambient noise levels. The noise fromthe mining machinery will be audible if opencast mining operations are undertaken during the night time, exceedances of all but the guidelines for industrial districts would be experienced and the noise levels at the nearest sensitive receptors would be objectionable;	<ul> <li>a. Regular planned mobile plant maintenance, with special attention paid to the maintenanceof engine efficiency and silencer effectiveness;</li> <li>Regular planned vehicle services.</li> </ul>
Vehicles maintenance, fuel storage, servicingareas and construction equipment storage	Pollution of surface water resource includingwetlands due to hydrocarbon spillages	<ul> <li>a. Servicing of construction vehicles will take place only in dedicated areas that are equipped with drip trays;</li> <li>b. Bunded containment and settlementfacilities will be provided for hazardous materials, such as fuel and oil;</li> <li>c. Spill-sorb or a similar product will be kepton site, and used to clean up hydrocarbon spills if they should occur;</li> </ul>

		d. Hazardous material will be placed in bunded areas;
		<ul> <li>e. Spill kits to clean up hydrocarbon spills</li> </ul>
		will be available;
		f. Clean upslope runoff will be diverted aroundconstruction
		areas.
		g. Prevent all effluent from the mining activities from
		entering the wetland habitat.
Site Clearance and Excavation of an open castmine	Potential impact on heritageResources	a. Conduct heritage impact assessment to identify heritage
		sites within the project area;
		b. If any heritage sites are identified, appropriatesteps as per
		the Heritage Resources Act will be undertaken;
		Education and training on heritage resources will be given to
		mine employees
Vehicular movements	Increase in traffic volumes on existing trafficnetwork	a. Traffic signage at site access point;
		b. Undertake traffic impact study;
		<b>C.</b> Traffic signage at site access points; Upgrade gravel roads to tarred roads.
Employment	Spontaneous settlement and increased pressureon social	a. Develop a clear and concise employment and recruitment
	services	policy that prioritizes local recruitment;
		b. Identify and support community development programs
		that address challenges raised by population influx and
		spontaneous settlement;
		Support local government capacity for integrated
		development planning.
	OPERATIONAL PHASE	·
Blasting, loading, hauling, stockpiling, backfillingand tailings	Release of fugitive emissions in the form of N2O, CH4	a. Efficiency will be applied to reduce wastage and
storage and vehicle operations	and $CO_2$ impact on air quality within and near the project area, particularly in the downwind direction	unnecessary fuel consumption;
		<ul> <li>b. Carbon offsets will be considered if required;</li> <li>Concurrent best practice rehabilitation and vegetation</li> </ul>
		monitoring will be applied to allow for the restoration of some

		the carbon sink functionality within the mining right area.
Excavation for an open cast mine	Influx of groundwater into the pits, leading to adecrease in groundwater quality and yield	<ul> <li>a. Detailed geological mapping to identifygeological features;</li> <li>b. Mining will take place according to design mine stability safety factors;</li> <li>c. Mining will not take place in the weathered overlying strata;</li> <li>d. Identify boreholes (undertake hydrocencus) within mining area and plug deep boreholesto prevent inflow into the pit;</li> <li>Monitor groundwater levels and yields of external borehole users.</li> </ul>
Excavation of an open cast mine	The formation of Acid Mine Drainage in groundwater resources.	<ul> <li>a. Optimise storage of mine water to minimize exposure to oxygen;</li> <li>b. Develop a groundwater monitoring program toassess the groundwater quality;</li> <li>c. Should Acid Mine Drainage (AMD) be identified within the groundwater resources, the polluted water will be remediated accordingly.</li> </ul>
Equipment, vehicle operations, leakages of oiland other industrial liquids from the trucks and machineries and stockpiling.	Contamination of soil	a. Spill leak detection plan should be implemented.
Vehicles maintenance, Fuel storage, servicing areas and construction, spilled construction materials such as cement, paint, fuel and oil.	Surface water and wetland resources due tohydrocarbon spills and carbonaceous material.	<ul> <li>a. Implement storm water management plan;</li> <li>b. Divert clean storm water around construction areas;</li> <li>Surface water management structures beconstructed first as to ensure that runoff and dirty water spills are contained;</li> </ul>

Loading, stockpiling, backfilling and Co-Disposal Facility	Dust generated during the mining may cause anegative	• Developmentarian of the city mender
	visual impact and altered visibility	a. Regular watering of the site roads;
storage.		b. Dressing off tip faces, unused roads anddisturbed
		areas;
		C. Minimizing unnecessary disturbance of non-operational
		areas;
		Use of chemical additives to control dust to be employed if
		necessary.
Blasting and vibrations	General increase in Blasting and vibrations	Blasting and other noise generating activitiesshould be
		conducted during the day when
		surrounding noise levels is high.
Vehicular operation, hauling and transportationof material	General increase in ambient noise levels	a. Regular planned mobile plant maintenance, with special
		attention paid to the maintenanceof engine efficiency and
		silencer effectiveness;
		Regular planned vehicle services.
Waste disposal	Waste generation including Debris (slimes), waste rock,	The slimes and waste rock will be used to backfill the trenches. This will be undertaken in aconcurrent rehabilitation
	litter and other solid waste will be generated and deposited	manner.
	in and around the site. This could potentially attract	
	nuisance and affect	
	the natural scenery of the site.	
Employment	Spontaneous settlement and Increase pressureon social services	a. Develop an employment and recruitmentpolicy that
		prioritises local recruitment;
		b. Identify and support community development
		programmes;
		Support local government capacity for integrated development planning.
Employment	Benefits resulting from employment and income opportunities created by the mine	Positive impact that need to be enhanced.
Backfilling of the open cast mine	Compaction of soil and contamination of soilresources	a. Reinstatement of stored soils onto areas of disturbance
		where infrastructure has been demolished;
		b. Contour and stabilize slopes to be free- draining;
		Cultivation of growing medium, the planting of required

		vegetative cover and irrigation if required.
Backfilling of the open cast mine	Pollution of surface water resources	<ul> <li>a. The storm water management infrastructure, including the PCD, will be decommissioned last to ensure adequate storm water management during the rehabilitation phase;</li> <li>b. Erosion protection measures will be implemented at steep areas;</li> <li>c. Spill kits will available and hydrocarbon spills will be cleaned up immediately; All traces of hydrocarbons and residual waste will be removed before infrastructure is demolished.</li> </ul>
Backfilling of the open cast mine	Increase in dust fallout	<ul> <li>a. Regular watering of the site roads; Dressing off tip faces, unused roads and disturbed areas;</li> <li>c. Minimising unnecessary disturbance of non-operational areas;</li> <li>d. Use of chemical additives to control dust to be employed if necessary.</li> </ul>
Hauling, Equipment and vehicular operations	General increase in ambientnoise levels	<ul> <li>a. Regular planned mobile plant maintenance, with special attention paid to the maintenance of engine efficiency and silencereffectiveness;</li> <li>Regular planned vehicle services.</li> </ul>
Loss of employment	Loss of employment and enterprise development opportunities	<ul> <li>a. Develop and implement Labour and Human Resources Plan (LHRP) that address the impacts associated with retrenchment, job losses and reduced demand for local goods and services;</li> <li>Develop a closure plan which will aim to reinforce the objectives of the SLP by reducing the reliance on LCM for employmentby promoting skills transfer to ensure alternative livelihoods portable skills.</li> </ul>

	Vehicle traffic noise impact affecting cattle and/or wildlife.		Site activities will be conducted during the day, between 07h00-17h30 to avoid night-time noise disturbances and collisions with fauna.	At the same time as prospective activities are completed.	Remain within the ambits of the PWP and EA.
	Soil compaction.	•	When clearing is required, raised blade clearing shall be carried out to minimize disturbances and rehabilitation aid. All compact roads and drill pads will be ripened and re- vegetated as part of rehabilitation.	At the same time as prospective activities are completed.	<ul> <li>Remain within the ambits of the PWP and EA.</li> <li>Retain integrity of topsoil for reuse during recovery.</li> </ul>
	Poor control of access resulting in impacts on the movement of cattle, breeding and pasture.		Procedures for access control shall be agreed with trained farm owners and staff.	At the same time as prospective activities are completed.	Remain within the ambits of the PWP and EA.
	Potential heritage resources destruction.		A HIA must be carried out and management measures for resource protection shall be implemented before the establishment of new access roads.	At the same time as prospective activities are completed.	Comply with SAHRA requirements. No damage to significant sites of heritage and culture.
<ul> <li>Site establishment activities including:</li> <li>Vegetation clearing.</li> <li>Topsoil stripping and stockpiling.</li> <li>Excavation and lining of drill water sump.</li> <li>Establishment of temporary shaded area of the site, drinking ablutions and storage water tanks and central bay.</li> <li>Erection of fuel storage tank.</li> <li>Erection of safety barrier.</li> <li>Generation and management of waste.</li> </ul>	Soil disturbance and storage lead to compacting and erosion of the soil.	•	The lower blade clearing will take place before the topsoil is stripped if the drill pad is clear of vegetation. Topsoil will be removed and stockpiled uphill of the pad, including remaining vegetation. The stock is designed to divert tempest water to the drill pad so that soil erosion is kept to a minimum. Topsoil is removed to a depth of 10 cm where practical. Vegetation is mixed with topsoil to increase the organic content and maintain the seed bank for rehabilitation. Topsoil will be stockpiled to a maximum height of	At the same time as prospective activities are completed.	<ul> <li>Remain within the ambits of the PWP and EA.</li> <li>Retain integrity of the topsoil for reuse.</li> </ul>

	<ul> <li>1.5 m with a side slope of not more than 1:3.</li> <li>Mechanical erosion control methods (e.g., Remain within the ambits of the PWP and EA.</li> </ul>		
Emission of dust clearing, soil deg and construction vehicle entrained	radation carried out to control the emissions of vehicle dust.	At the same time as prospective activities are completed.	<ul> <li>Remain in the miningarea designated.</li> <li>Remain within the NEMA: AQA Dust Regulation guidelines for rural communities.</li> </ul>
Visual Character "Sense of Place" affected by visua	are temporary toilets, vertical	At the same time as prospective activities are completed.	<ul> <li>Remain within the ambits of the PWP and EA.</li> <li>There will be no vegetation clearance outside of the delineated zones.</li> </ul>
Increased activit and opportunistic a result of an inf seekers to the si	y, theft, c crime as ux of job To discourage people from coming to the site looking for work, no casual labor will be	At the same time as, prospective activities are completed.	Maintain a crime-free zone under the management of miningactivities and the applicant.
Potential destruc heritage resourc	tion of • An HIA must be completed	At the same time as prospective activities are completed.	Comply with SAHRA requirements. No damage to heritage and cultural significant sites.

<ul> <li>Exploration drilling and core sample collection and storage including:</li> <li>Scout and delineation drilling.</li> <li>Drill maintenance and re-fuelling.</li> <li>Collection and storage of core samples.</li> <li>Drill fluid collection, storage and evaporation.</li> <li>Waste generation and management.</li> </ul>	Soil erosion from the topsoil stockpile is continuing, as is soil compaction from the drill pad platform.	•	If raised blade clearing is not undertaken and the drill pad is cleared, topsoil will be stockpiled to a maximum height of 1.5 m with a side slope of not more than 1:3. To prevent soil erosion, the topsoil stockpile will be shaped to divert storm water away from the drill pad. If necessary, management efforts involving mechanical erosion control methods (e.g., geotextiles) will be implemented.	At the same time as prospective activities are completed.	•	Remain within the ambits of the PWP and EA. Maintain the integrity of the topsoil so that it can be reused in the rehabilitation process.
	Water and soil pollution resulting from disposal of drill fluids.	•	The sump will be large enough to hold drill fluids while also allowing for evaporation. To avoid clean stormwater intake, the sump will be built to deflect storm water away from and/or around the sump.	At the same time as prospective activities are completed.	•	Remain within the ambits of the PWP and EA. Maintain the integrity of the topsoil so that it can be reused in the rehabilitation process.
	Hydrocarbon spills and drill maintenance activities have the potential to pollute water and soil.	•	A secondary containment structure will be built around the fuel storage tanks (at 110 percent of total tank capacity). Secondary containment buildings will be used to store oils and lubricants. Vehicle maintenance will be done off-site wherever possible. To prevent spills and leaks onto the soil, drip trays and/or UPVC sheets must be used if vehicle maintenance is performed on-site (e.g., breakdown maintenance). To avoid leaks, all unused machinery must be properly emptied of oil and other hydrocarbons.	At the same time as prospective activities are completed.	•	Remain within the ambits of the PWP and EA. Maintain the integrity of the topsoil so that it can be reused in the rehabilitation process

	Vehicle inspections should be performed on a regular basis to ensure that leaks are detected and repaired as soon as possible.		
	<ul> <li>Enough waste receptacles will be provided.</li> <li>Separation of waste will be done at the source, and separate receptacles will be provided (general waste, recyclables and hazardous waste).</li> <li>To prevent animal access overnight, receptacles will be closed (i.e., provided with a lockable lid).</li> <li>Waste will be removed and</li> </ul>		
	disposed of at a properly licensed landfill (facility disposal licenses will be verified), with recyclables going to a licensed recycling facility.		
Dust emission drilling and ge activities (inclu entrained dust	<ul> <li>vehicle dust emissions, wet dust suppression will be used.</li> <li>Chemical suppression solutions must be examined depending on the requirement and quantity of water utilized for wet suppression in order to conserve water resources.</li> </ul>	At the same time as prospective activities are completed.	<ul> <li>Remain within the ambits of the PWP and EA.</li> <li>Remain within the NEM: AQA Dust Regulation guidelines for rural communities.</li> </ul>
Visual Impact visual characte "sense of plac	er and e" structures will be reduced according to the steps outlined in Item 35. • Visual dust dispersion will be mitigated through measures as included in Item 33.	At the same time as prospective activities are completed.	<ul> <li>Remain within the ambits of the PWP and EA.</li> <li>There will be no vegetation clearance outside of the delineated zones</li> </ul>
Vehicle traffic noise have an wildlife, game farm animals.	influence on disturbances, site operations	At the same time as prospective activities are completed.	<ul> <li>Remain within the ambits of the PWP and EA.</li> </ul>

	. Cattle movement, breeding, and grazing habits are all impacted as a result of poor access control.	Farm owners must agree on access control protocols.	At the same time as prospective activities are completed.	<ul> <li>Remain within the ambits of the PWP and EA.</li> </ul>
	Increased activity, theft, and opportunistic crime as a result of an influx of job seekers to the site.	<ul> <li>To discourage people from looking for work on-site, no casual labor will be hired.</li> <li>Unauthorized individuals will be reported to the landowner (Department of Rural Development and Land Reform).</li> <li>Unauthorized persons encountered on site will be reported to the South African Police Service if necessary.</li> </ul>	At the same time as prospective activities are completed.	Maintain a crime-free zone under the management of miningactivities and the applicant.
	Impact on the area's pans and adjacent ecosystems.	<ul> <li>The miningareas mustbe clearly demarcated.</li> <li>No miningmay be undertaken in pan areas.</li> <li>All site plans must indicate the presence of pans.</li> </ul>	At the same time as prospective activities are completed.	Remain within the ambits of the PWP and EA.
<ul> <li>Removal of temporary infrastructure including:</li> <li>Temporary site office shaded area, potable ablution facilities, water storage tanks, and core bay are all being removed.</li> <li>Borehole capping</li> <li>Drill pad rehabilitation including:</li> <li>Ripping of drill pad and access road.</li> <li>Re-spreading of stockpiled topsoil.</li> <li>Re-Vegetation.</li> </ul>	Destruction and/or disturbance of on-site fauna.	<ul> <li>Drill holes must be temporarily sealed as soon as they are finished drilling and must stay plugged until they are permanently plugged below ground to prevent fauna from being harmed.</li> <li>As soon as feasible, drill holes must be permanently capped.</li> </ul>	At the same time as prospective activities are completed.	<ul> <li>Remain within the ambits of the PWP and EA.</li> </ul>
	Dust emissions from drilling and general site activities (including vehicle entrained dust)	<ul> <li>When necessary to control vehicle dust emissions, wet dust suppression will be used.</li> <li>Chemical suppression solutions must be examined</li> </ul>	At the same time as prospective activities are completed.	<ul> <li>Remain within the ambits of the PWP and EA.</li> <li>Remain within the NEM: AQA Dust Regulation guidelines for rural communities.</li> </ul>

Cattle movement, breeding, and grazing methods are all impacted by poor access control.	depending on the requirement and quantity of water utilized for wet suppression in order to conserve water resources.At the same time as prospective activities are completed.• Remain within the PWP and	
Hydrocarbon spills have the potential to pollute both water and soil.	All fuel storage tanks will be emptied before removal. To avoid groundwater contamination, drill holes must be permanently closed as soon as possible. Waste will be removed and 	
Soil erosion caused by topsoil re-spreading before vegetation is re- established.	If necessary, mechanical erosion control technologies such as geotextiles will be used. Hand-seeding exposed areas with indigenous grass species identified by a sufficiently skilled ecologist will be used to re-vegetate. For the first six months following sowing, re- vegetation activities will be assessed every two months. A 45 percent effective vegetation cover must be attained. If this cover is not obtained after 6 months, re- seeding will be done.	

#### g) Financial Provision

#### (1) Determination of the amount of Financial Provision.

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

For a miningoperation such as this, the primary closure and environmental objectives are to:

- Minimize the area that will be disturbed and ensure that any areas that are disturbedduring miningactivities are repaired and stabilized in accordance with the EMP's commitments;
- Sustain the pre-mining land use; and
- To record and communicate the results of the monitoring programme during decommissioning to the participating stakeholders.

The restoration of former land use capacities, the zero-net loss of biodiversity, and the satisfaction of community expectations are all part of the international and South African mining closure objectives.

Rehabilitation measures have been designed to meet closure objectives.

The objectives of rehabilitation and closure are:

- To ensure closure complies with the Mineral and Petroleum Resources Development Act28 of 2002;
- To ensure that mining footprints are rehabilitated to an acceptable degree, that ecosystems are functioning, and that all environmental and social risks have been reduced to the point that they do not pose a threat to the environment after the mine hasclosed;
- To guarantee that the restoration plan's goals have been completed and that the landmay be used in a sustainable manner;
- To implement management techniques that will ensure that the Borrow pit's negative impacts (risks) are eradicated or reduced to acceptable levels;
- To leave the area in an environmentally friendly manner that poses no health threats to he surrounding communities.

## b) Confirm specifically that the environmental objectives in relation to closure have beenconsulted with landowner and interested and affected parties.

Farmers and other affected parties will be consulted on the environmental goals of the closure. It will be explained that if the mining yields negative results, the area's end use will revert to whatit was before the mining (minutes to be incorporated on the final report). As a result, the mining operations will have no impact on the area's end-use.

## (c) Provide a rehabilitation plan that describes and shows the scale and aerial extentof the main mining activities, including the anticipated mining area at the time of closure.

The main goal of this rehabilitation plan is to reduce the negative effects of miningactivities while also restoring the land to a suitable state. It is recommended that the rehabilitation plan be developed as soon as possible to ensure the best possible management of any rehabilitationchallenges that may occur. Before the process commences, it is critical that the project's closure plan is specified and understood, and that it is compatible to the rehabilitation goals. The rehabilitation and closure goals must be specific to the project and in line with the EMPR. The following are the project's overarching rehabilitative goals:

- Maintain and minimize impacts to the ecosystem within the project area.
- Re-establishment of the pre-developed land capability to allow for a suitable postmining land use.
- Prevent soil, surface water and groundwater contamination.
- Comply with all applicable local and national regulations.
- Maintain and monitor the places that have been rehabilitated.

To ensure that the rehabilitation programme is a success, it must be sustainable and involve a grasp of the underlying baseline environment as well as project management. It should be mentioned that an application for environmental authorization for closure must be made in compliance with the following:

Listing Notice 1 Activity 22:

The decommissioning of any activity requiring -

- A closure certificate in terms of Section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).
- (ii) A prospecting right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years, excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure.

## (d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

The closure plan will assist the proposed mining operation to achieve the following objectives:

- Comply with relevant legislation and policy requirements with regards to mine rehabilitation.
- Avoid or reduce project-related environmental consequences.
- Land rehabilitation to a predetermined and agreed upon state that allows sustainable land use and capability of the site, that is to return the site to the condition that existedprior to mining or an agreed upon state.
- Closing mining operations in a cost-effective and efficient manner.
- ✤ After the closure, the area will be managed and monitored.

To achieve these goals, the rehabilitation strategy will relate to the closure objectives andtailored to the project. It will outline how rehabilitation will be carried out and contain information about the site before to the mining operation. It will also include information on the maintenance of resources required for the rehabilitation process. It will also include information on the management and monitoring of disturbances in order to avoid or minimize negative consequences, as well as a financial closure provision estimate. It will also contain details about the site's post-closure environmental monitoring to ensure that the rehabilitation plan is implemented, and the goals are met.

## (e) Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.

Refer to Section S(i) of the BAR for a detailed breakdown.

#### (f) Confirm that the financial provision will be provided as determined.

Atok Mining House (Pty) Ltd has agreed to fund the mining costs as well as the site rehabilitation once the mining is completed.

#### Mechanisms for monitoring compliance with and performance assessment against the environmental management programme

#### and reporting thereon, including

- (g) Monitoring of Impact Management Actions
- (h) Monitoring and reporting frequency
- (i) Responsible persons
- (j) Time period for implementing impact management actions
- (k) Mechanism for monitoring compliance

Table 16: Mechanisms for monitoring compliance with a performance assessment against the environmental management programme and reporting.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Phase 1: Data collection and desktop study.	None identified.	None.	None.	N/A.
Phase 2: Target generation and ground truthing.	Noise impacts on cattle and game farm animals as a result of site fly-overs.	Adjacent landowners will be notified of the airborne geophysics survey's intended dates, and a grievance process will be accessible.	Project manager.	<ul> <li>Once-off upfront consultation with affected parties.</li> <li>As grievances are received, as needed.</li> <li>Environmental Management must approve off on the consultation.</li> <li>Environmental Management must sign off on corrective action and the closure of grievances.</li> <li>At the end of the project phase, record grievances, take corrective action, and submit a closeout to the DMRE.</li> </ul>
Phase 3: Mining	Visual inspection of soil erosion and/or compaction.	Erosion must be checked on a regular basis, especially after rain, in all exposed locations, access roads, the drill pad, and soil stockpiles.	Project manager.	<ul> <li>Weekly and post-rain events are scheduled.</li> <li>The Environmental Manager must sign off on monthly monitoring reports.</li> <li>The Environmental Manager must validate and sign off on the corrective action.</li> </ul>

				<ul> <li>Monthly monitoring reports (including corrective action done) to be sent to the DMRE in a consolidated format.</li> </ul>
	Visual observation will be used to assess the amount of dust generated.	A monitoring program based on the input of a trained air quality specialist must be launched if dust outfall is excessive and affects sensitive receptors.	Project manager.	<ul> <li>On-going.</li> <li>The Environmental Manager must sign off on monthly monitoring reports.</li> <li>The Environmental Manager must validate and sign off on the corrective action.</li> <li>Monthly monitoring reports (including corrective action done) to be sent to the DMRE in a consolidated format.</li> </ul>
	Visual evaluation of biodiversity effects and invader species occurrence.	There will be a visual inspection of clearance activities and other potential secondary impacts on biodiversity. It will be determined whether or not foreign invasive vegetation species will be introduced.	Project manager.	<ul> <li>Once-off during clearing activities.</li> <li>Weekly inspection of secondary impacts.</li> <li>The Environmental Manager must sign off on monthly monitoring reports.</li> <li>The Environmental Manager must validate and sign off on the corrective action.</li> <li>Monthly monitoring reports (including corrective action done) to be sent to the DMRE in a consolidated format.</li> </ul>
	Visual inspection of pollution incidents, secondary containment structure integrity, and waste management.	<ul> <li>Secondary containment structures will be inspected on a regular basis to ensure their integrity and to detect potential leaks.</li> <li>All spills will be identified, and corrective action will be taken in accordance with a spill response procedure that has been established.</li> <li>To avoid contamination and littering, waste management procedures will be regulated.</li> </ul>	Project manager.	<ul> <li>The Environmental Manager must sign off on monthly monitoring reports.</li> <li>The Environmental Manager must validate and sign off on the corrective action.</li> <li>Monthly monitoring reports (including corrective action done) to be sent to the DMRE in a consolidated format.</li> </ul>
Post-closure monitoring.	Follow-up inspections and monitoring of rehabilitation.	<ul> <li>Inspection of rehabilitated areas to detect soil erosion and, if necessary, take corrective measures.</li> <li>After six months, confirm that the 45 percent target of cover for all re-vegetated areas has been met; re-seed if needed.</li> <li>Identify regions of subsidence around drill holes and, if necessary, backfill them.</li> </ul>	Project manager.	<ul> <li>Monthly for six months after rehabilitation conclusion.</li> <li>The Environmental Manager must sign off on monthly monitoring reports.</li> <li>The Environmental Manager must validate and sign off on the corrective action.</li> <li>Monthly monitoring reports (including corrective action done) to be sent to the DMRE in a consolidated format.</li> <li>The DMRE must approve the final</li> </ul>

				impact and risk assessment report for the site closure.
Phase 3: Exploration drilling.	Visual inspection of soilerosion and/or compaction.	Erosion must be checked on a regular basis, especially after rain, in all exposedlocations, access roads, the drill pad, andsoil stockpiles.	Project manager.	<ul> <li>Weekly and post-rain events arescheduled.</li> <li>The Environmental Managermust sign off on monthly monitoring reports.</li> <li>The Environmental Manager must validate and sign off on thecorrective action.</li> <li>Monthly monitoring reports (including corrective action done) to be sent to the DMRE ina consolidated format.</li> </ul>
	Visual observation will beused to assess the amount of dust generated.	A monitoring program based on the inputof a trained air quality specialist must be launched if dust outfall is excessive and affects sensitive receptors.	Project manager.	<ul> <li>On-going.</li> <li>The Environmental Managermust sign off on monthly monitoring reports.</li> <li>The Environmental Manager must validate and sign off on thecorrective action.</li> <li>Monthly monitoring reports (including corrective action done) to be sent to the DMRE ina consolidated format.</li> </ul>
	Visual evaluation of biodiversity effects andinvader species occurrence.	There will be a visual inspection of clearance activities and other potential secondary impacts on biodiversity. It willbe determined whether or not foreign invasive vegetation species will be introduced.	Project manager.	<ul> <li>Once-off during clearingactivities.</li> <li>Weekly inspection of secondaryimpacts.</li> <li>The Environmental Managermust sign off on monthly monitoring reports.</li> <li>The Environmental Manager must validate and sign off on thecorrective action.</li> <li>Monthly monitoring reports (including corrective action done) to be sent to the DMRE ina consolidated format.</li> </ul>

	Visual inspection of pollution incidents, secondary containment	Secondary containment structures will be inspected on a regular basis to	Project manager.	The Environmental Manager must sign off on monthlymonitoring reports.
	structure integrity, andwaste management.	<ul> <li>ensure their integrity and to detectpotential leaks.</li> <li>All spills will be identified, and corrective action will be taken in accordance with a spill response procedure that has been established.</li> <li>To avoid contamination and littering, waste management procedures will be regulated.</li> </ul>		<ul> <li>The Environmental Manager must validate and sign off on thecorrective action.</li> <li>Monthly monitoring reports (including corrective action done) to be sent to the DMRE ina consolidated format.</li> </ul>
Post- closure monitoring.	Follow-up inspectionsand monitoring of rehabilitation.	<ul> <li>Inspection of rehabilitated areas to detect soil erosion and, if necessary,take corrective measures.</li> <li>After six months, confirm that the 45percent target of cover for all re- vegetated areas has been met; re- seed if needed.</li> <li>Identify regions of subsidence arounddrill holes and, if necessary, backfill them.</li> </ul>	Project manager.	<ul> <li>Monthly for six months afterrehabilitation conclusion.</li> <li>The Environmental Managermust sign off on monthly monitoring reports.</li> <li>The Environmental Manager must validate and sign off on thecorrective action.</li> <li>Monthly monitoring reports (including corrective action done) to be sent to the DMRE ina consolidated format.</li> <li>The DMRE must approve thefinal impact and risk assessment report for the site closure.</li> </ul>

# a) Indicate the frequency of the submission of the performance assessment/environmental audit report.

Environmental monitoring and compliance with the authorized EMPR will be carried out on an annual basis and submitted to the DMRE in the form of an environmental performance assessment. The following pertinent information will be included in the report:

- The time frame in which the performance evaluation was carried out.
- Scope of the assessment.
- The procedures used for conducting the assessment.
- Information gained via EMPR monitoring that has been interpreted.
- Evaluation criteria used during the assessment.
- The assessment's findings must be discussed, and any deficiencies in the EMPR must bementioned.
- And how it can be rectified.
- Yearly updated layout plans.

Any emergency or unanticipated consequences will be immediately reported to the DMRE and other appropriate government agencies.

#### a) Environmental Awareness Plan

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

All necessary staff must be trained and capable of carrying out their tasks in an environmentallyresponsible and compliant way, as well as complying with the relevant environmental regulations, according to the Applicant and Contractor. Individual employees must be involved in the following activities to gain employee buy-in:

- Identifying the relevant risks.
- Understanding the nature of risks.
- Incentives in the form of legal duties are provided to encourage the implementation of controls.

Prior to the start of the mining operations, training and/or awareness should be raised and successfully communicated. The management plans mentioned in the EMPr, as well as any new information and documentation, should be included in training sessions.

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

The following procedures are in place to prevent pollution or environmental degradation duringminingactivities:

- Contain potential pollutants and contaminants at the source (if at all possible).
- Handling of potential pollutants and contaminants should be done in bunded areas andon impermeable substrates whenever practicable.
- Ensure that any spills are cleaned up as soon as possible.
- Set up a waste management system for all waste streams on site.
- Any I&AP accusations of pollution or contamination as a result of mining activity shouldbe investigated.

#### n) Specific information required by the Competent Authority

No specific information requirements have been made by the Competent Authority at this stage.

#### o) UNDERTAKING

The EAP herewith confirms

- **a.** the correctness of the information provided in the reports  $\square$
- **b.** the inclusion of comments and inputs from stakeholders and I&APs ;  $\square$
- **c.** the inclusion of inputs and recommendations from the specialist reports where relevant;
- **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:

Moepathutsi Geo-Environmental Solutions (Pty) Ltd Name of Company:

01-05-2023 Date:

#### **APPENDIX A: COMPETENT AUTHORITY**



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Atok Mining House (Pty) Ltd P.O. Box 557 **ROSSLYN** 0200

Attention: Mr. Nkwane A. Mahlatji

Email: ariel@atok.co.za

APPLICATION FOR MINING PERMIT IN TERMS OF SECTION 27 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (THE ACT) (AS AMENDED): A PORTION OF PORTION 11 OF THE FARM LEEUWENFONTEIN 284 IR; IN THE MAGISTERIAL DISTRICT OF NIGEL.

- 1. This is to inform you that your application for a mining permit in terms of section 27 of the Act (as amended) for Coal and Clay (general) in respect of the abovementioned property has been accepted.
- 2. In terms of section 27(5)(b) (as amended) read with regulation 52(1) of the said Act, you are therefore required to:
  - a) Consult in the prescribed manner with the landowners, lawful occupiers and any other interested and affected parties and include the result of the consultation in the relevant environmental reports.

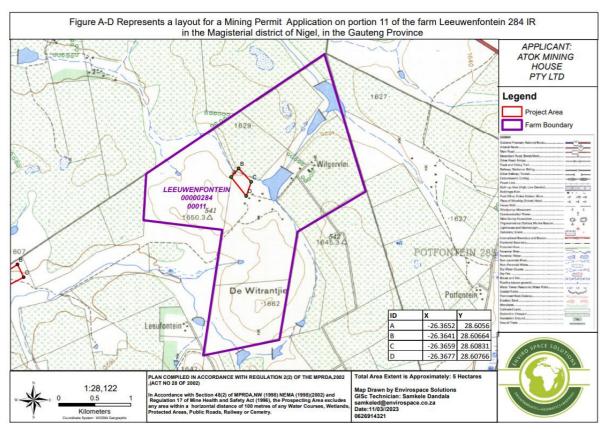
GP 30/5/1/3/2/10480 MP: Atok Mining House (Pty) Ltd: An application for a Mining Permit in terms of Section 27 of the MPRDA, Act 28 of 2002: For Coal and Clay (general) in respect of a portion of portion 11 of the farm Leeuwenfontein 284 IR: in the Magisterial District of Nigel.

- 3. Apply for a Water Use Licence at the Department of Water Affairs and Sanitation in accordance with the National Water Act and associated Regulations, where applicable.
- 4. Acceptance of your application does not grant you the right to commence with any mining activities. It only signifies that your application will be processed in order for the Minister or his delegate to consider same and make a decision within **197** days from the date of acceptance of your application.

Regards

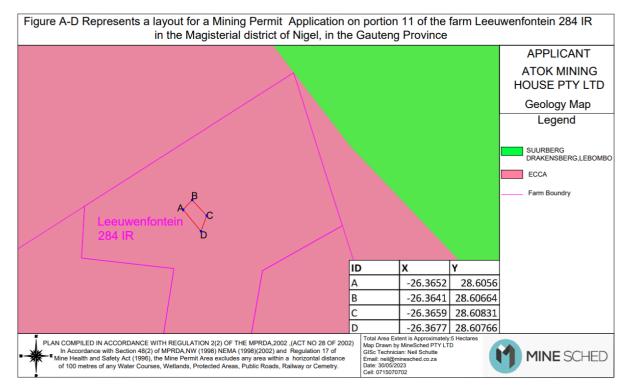
ional Manager Re **Gauteng Region** BRAAMFONTEIN Date 🤉 19073

GP 30/5/1/3/2/10480 MP: Atok Mining House (Pty) Ltd: An application for a Mining Permit in terms of Section 27 of the MPRDA, Act 28 of 2002: For Coal and Clay (general) in respect of a portion of portion 11 of the farm Leeuwenfontein 284 IR: in the Magisterial District of Nigel.



#### **APPENDIX B: PROJECT MAPS**

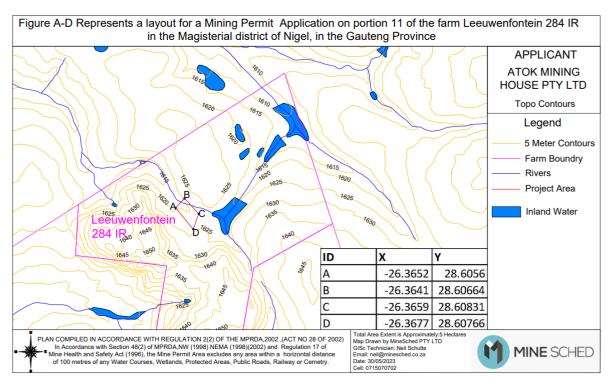
**REGULATION MAP** 



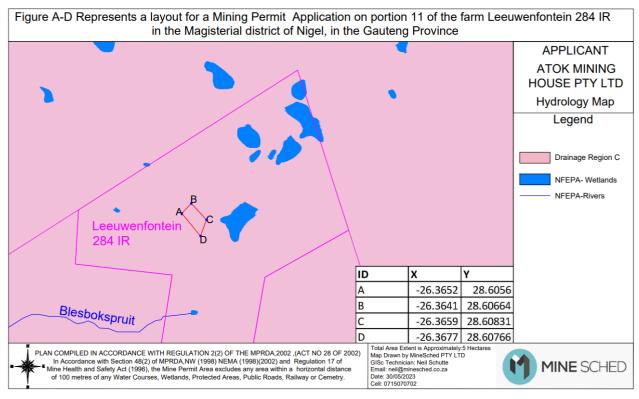
GEOLOGY MAP



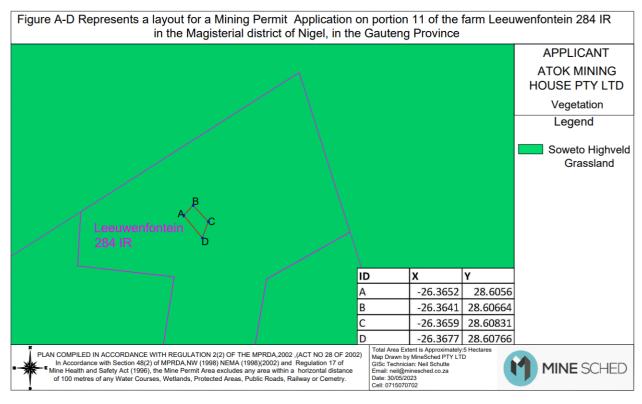
#### LOCALITY MAP



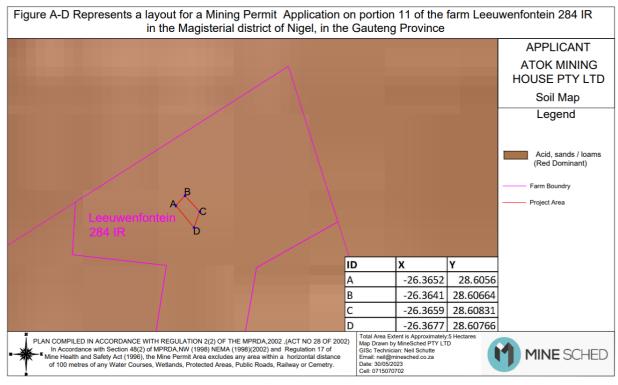
**TOPOGRAPHICAL MAP** 



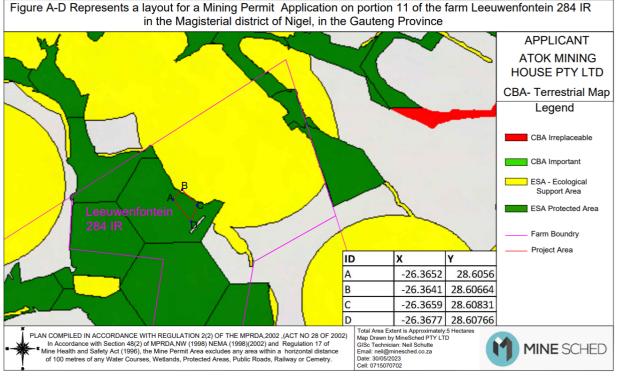
HYDROLOGICAL MAP



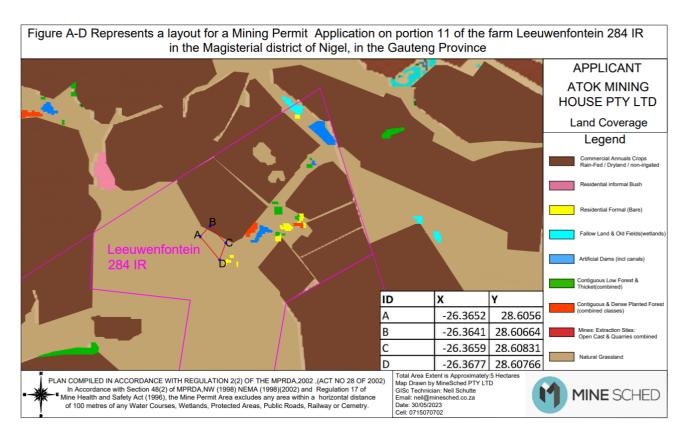
**VEGETATION MAP** 



SOIL CLASS MAP



**CRITICAL BIODIVERSITY MAP** 



LAND USE MAP

# APPENDIX C: BACKGROUND INFORMATION DOCUMENT



# **BACKGROUND INFORMATION DOCUMENT**

FOR THE PROPOSED MINING PERMIT APPLICATION AND ENVIRONMENTAL AUTHORIZATION APPLICATION ON PORTION OF PORTION 11 OF THE FARM LEEUWENFONTEIN 284 IR, SITUATED IN THE MAGISTERIAL DISTRICT OF NIGEL, GAUTENG PROVINCE.

#### PURPOSE OF THIS DOCUMENT

The purpose of this Background Information Document (BID) is to provide Interested and Affected Parties (I&APs) with background information about the proposed mining permit application and introduce the Environmental Impact Assessment (EIA) process to be followed. It also aims to inform I&APs on how to fully participate in the EIA and encourages response to documents distributed for review and active attendance meetings.

#### **PROJECT DESCRIPTION**

Atok Mining House (Pty) Ltd applied for Mining Permit (DMRE Ref: GP 30/5/1/3/2/10480 MP) and Environmental Authorization in terms of section 27 of the Mineral and Petroleum Resources Development Act (MPRDA), Act No 28 of 2002, for coal and clay (general) on portion of portion 11 of the farm Leeuwenfontein 284 IR.

Atok Mining House (Pty) Ltd appointed Moepathutsi Geo-Environmental Solutions (Pty) Ltd as an independent Environmental Assessment Practitioner (EAP), to conduct Environmental Impact Assessment process for the proposed project.

Notice is hereby given in terms of the Mineral and Petroleum Development Act (MPRDA) (Act 28 of 2002) and EIA regulations 2014, published under Government Notice No.982 in Gazette No. 3822 of 4 December 2014, amended on 7 April 2017, that Atok Mining House (Pty) Ltd has applied for a Mining Permit.

#### **PROJECT LOCATION**

The Mining Permit area is located on a portion of portion 11 of the farm Leeuwnfontein 284 IR, situated under the Magisterial District of Nigel in the Gauteng province. The proposed mining area is located approximately 15 km northeast of Nigel and 17 km west of Devon, along N17 towards Springs.

Please refer to Figure 2 for the locality map.

#### LEGISLATIVE REQUIREMENTS

In terms of the National Environmental Management Act (Act 107 of 1998) (NEMA) and its promulgated EIA Regulations of 2017 (GNR 982, 983, 984 and 985) the prospecting activities require an Environmental Authorisation.

An Environmental Authorisation in terms of Section 24 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) read with Regulation 19 of the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) and Section 27 of the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended by Section 12 of the MPRDA, 2008 (Act No. 49 of 2008) is required for a Mining Permit

#### WHAT IS ENVIRONMENTAL IMPACT ASSESSMENT?

An Environmental Impact Assessment (EIA) is a planning and decision-making tool that is used to identify the environmental consequences of a proposed project, before the development takes place. The purpose of the EIA is to describe the potential consequences of the proposed development in environmental, economic, and social terms. Public issues and concerns must therefore be identified timeously so that these can be recorded and responded to in the EIA. All comments received in writing are included in the submission to the competent authority for their consideration.



The EIA process consists of two stages. The first stage is a Scoping Study, which identifies potential issues requiring more detailed investigation via specialist studies. A complete list of specialist studies and the issues they should address will be detailed in the Draft Scoping Report, which will be made available for public and authority review.

The second stage is the Impact Assessment phase, during which detailed investigations of the issues identified during scoping, will be undertaken.

# ENVIRONMENTAL IMPACT ASSESSMENT PROCESS.

The flow diagram below provides an overview of the EIA process according to the 2014 EIA Regulations:

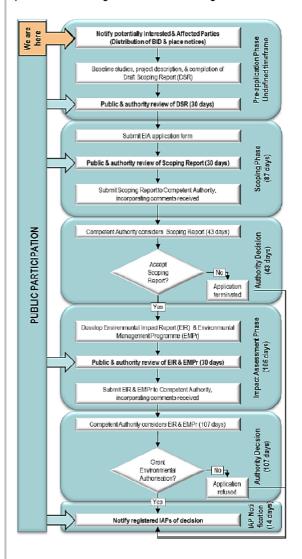


Figure 1: A typical Environmental Impact Assessment process and stages where public comment will be invited.

## POTENTIAL IMPACTS

A number of potential impacts have been identified which will be considered further in the process as required. Typical impacts that may be investigated as part of this EIA include:

- Heritage (archaeology and palaeontology).
- Impacts on fauna and flora.
- Agricultural impacts.
- Air quality and noise impacts.
- Terrestrial and aquatic ecology and wetlands.
- Visual impacts

Additional impacts can be added based on the findings of the desktop and site inspection as well as input from the public during Public Participation Process.

## PUBLIC PARTICIPATION PROCESS

Public participation is the cornerstone of the Environmental Impact Assessment process. The principles of the National Environmental Management Act (NEMA) govern most aspects of Environmental Impact Assessments, including public participation. These include the ongoing provision of sufficient information (in a transparent manner) to Interested and Affected Parties (IAPs).

During the Public Participation Process, input from the applicant, technical experts, government authorities and the general public will be gathered to result in a better understanding of the project for all involved, and more informed decision-making throughout the process. IAPs will be given the opportunity to comment on the findings of both the Scoping and EIA Reports, and findings of the Specialist studies during the specified comment periods. IAPs are hereby invited to comment on environmental, social, and economic issues relating to the proposed project.

# HOW TO REGISTER AS AN INTERESTED AND AFFECTED PARTY.

To receive further communications regarding this development, please register by sending the completed and signed registration sheet on the last page of this document by 23 May 2023, to:

> Miss Avela Mantshontsho Tel: 071 628 9187 Email: <u>avela@mges.co.za</u>



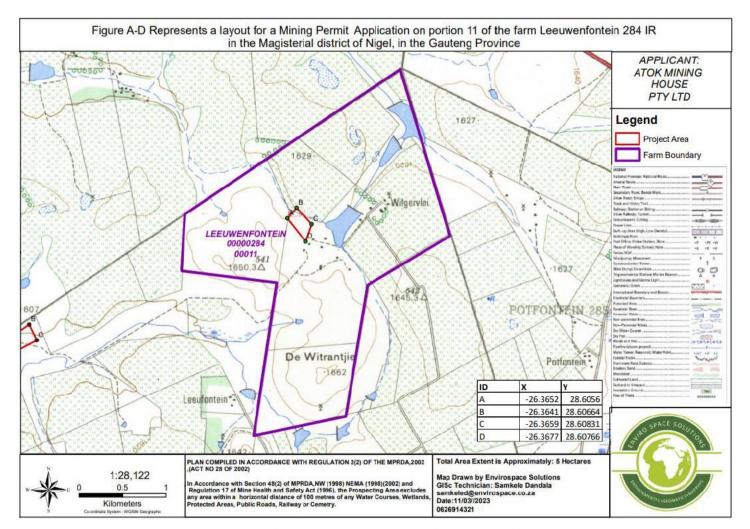


Figure 2: Locality map of the proposed project area.





Address: 100 Booted Eagle, Elandspoort, Pretoria,0184 Tel: +27 (0) 71 628 9187 Email: avela@mges.co.za

# **REGISTRATION AND COMMENT SHEET**

# MINING PERMIT APPLICATION FOR COAL AND GENERAL CLAY ON PORTION OF PORTION 11 OF THE FARM LEEUWENFONTEIN 284 IR (DMRE REF: GP30/5/1/3/2/10480 MP), GAUTENG PROVINCE.

### Attention: Miss Avela Mantshontsho

I wish to register an Interested and Affected Party and/or bring to the attention of Moepathutsi Geo-Environmental Solutions the following comments:

CONTACT INFORMATION		
Title:	Name:	
Organization:	Nature of interest:	
Postal Address:	Telephone:	
	Mobile:	
	Email:	
* The NEMA EIA Regulations, 2014, require that an IAP discloses any direct business, financia **Preferred method of communication. The absence of email / facsimile facilities may result in a		
COMMENTS (Please use ad	ditional sheets of paper if required)	

# **APPENDIX D: LANDOWNER CONSULTATION**

# WinDeed Database D/O Property - List IR, 284, PRETORIA

Lexis<sup>®</sup> WinDeed

# Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

SEARCH CRITERIA			
Search Date	2022/08/11 14:56	Farm Number	284
Reference	•	Registration Division	IR
Report Print Date	2022/08/11 14:58	Portion Number	-
Farm Name	-	Remaining Extent	NO
Deeds Office	Pretoria	Search Source	WinDeed Database

PORTION LIST			
Owner	Title Deed	Registration Date	Purchase Price (R)
** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
RIA-LOIS JACOBS TRUST	T7870/1987	1987/02/23	500 000
KARAN IVOR MICHAEL	T35071/2019	2019/06/10	167 006 391
KARAN IVOR MICHAEL	T35071/2019	2019/06/10	167 006 391
** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
NATIONAL GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA	T39867/2008	2008/04/23	8 721 000
NATIONAL GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA	T39867/2008	2008/04/23	8 721 000
** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	•	-
** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
NTIONL GOVERNMENT REPUBLIC OF SOUTH FRIC	T3911/2008	2008/01/17	5 800 000
PISTORIUS CHRISTINA MARGRIETHA	T104234/2000	2000/08/24	-
BEUKES HESTER CATHARINA	T78539/2011	2011/11/03	
	Owner  '' FOR INFO REFER TO REGISTRAR OF DEEDS '' RIA-LOIS JACOBS TRUST KARAN IVOR MICHAEL  KARAN IVOR MICHAEL  '' FOR INFO REFER TO REGISTRAR OF DEEDS '' NATIONAL GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA NATIONAL GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA '' FOR INFO REFER TO REGISTRAR OF DEEDS ''	OwnerTitle Deed** FOR INFO REFER TO REGISTRAR OF DEEDS **REPLACEDRIA-LOIS JACOBS TRUSTT7870/1987KARAN IVOR MICHAELT35071/2019KARAN IVOR MICHAELT35071/2019** FOR INFO REFER TO REGISTRAR OF DEEDS **REPLACEDNATIONAL GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICAT39867/2008** FOR INFO REFER TO REGISTRAR OF DEEDS **T39867/2008** FOR INFO REFER TO REGISTRAR OF DEEDS **REPLACED** FOR INFO REFER TO REGISTRAR OF DEEDS **T1911/2008** FOR INFO REFER TO REGISTRAR OF DEEDS **T104234/2000MARGRIETHABEUKES HESTERT78539/2011	OwnerTitle DeedRegistration Date'' FOR INFO REFER TO REGISTRAR OF DEEDS ''REPLACED-RIA-LOIS JACOBS TRUSTT7870/19871987/02/23KARAN IVOR MICHAELT35071/20192019/06/10KARAN IVOR MICHAELT35071/20192019/06/10KARAN IVOR MICHAELT35071/20192019/06/10KARAN IVOR MICHAELT35071/20192019/06/10'' FOR INFO REFER TO REGISTRAR OF DEEDS ''REPLACED-NATIONAL GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICAT39867/20082008/04/23NATIONAL GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICAREPLACED-'' FOR INFO REFER TO REGISTRAR OF DEEDS ''REPLACED-'' FOR INFO REFER TO REGISTRAR OF DEEDS ''T3911/20082008/01/17NTIONL GOVERNMENT REPUBLIC OF SOUTH FRICT3911/20082000/08/24NTIONL GOVERNMENT REPUBLIC OF SOUTH FRICT104234/20002000/08/24PISTORIUS CHRISTINA MARGRIETHAT104234/20012011/11/03

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Page 1 of 1

### Notification of Mining Permit and Prospecting Right Applications for Coal and General Clay



Good day, Mr Ndlovu.

#### I trust this email finds you well.

Moepathutsi Geo-Environmental Solutions (Pty) Ltd hereby informs you of submitted applications for Mining Permits together with Environmental Authorization to the Mpumalanga Department of Mineral Resources & Energy (DMRE), for the purpose of extracting Coal and Clay (general). The prospective projects are situated within the Magisterial District of Nigel in Gauteng and have been proposed by the following companies:

Company Name	DMRE Reference	Proposed Project Area
Jansen Mining Group (Pty) Ltd	GP 30/5/1/3/2 (10477) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Nebo Coal CC	GP 30/5/1/3/2/ (10478) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Motalane Mining CC	GP 30/5/1/3/2/ (10479) MP	Portion of Portion 11 of
_		Leeuwenfontein 284 IR
Atok Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10480) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Tafelkop Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10481) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Atok Mining House	GP 30/5/1/1/2/ (10801) PR	Portion of Portion 11 of
		Leeuwenfontein 284 IR

Notice is given in compliance with the terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No.28 of 2002) (MPRDA), National Environmental Management Act, 1998 (Act No.107 of 1998), and EIA Regulations (as amended, 07 April 2017) which requires that stakeholders must be notified of the intentions of the above-mentioned companies to obtain Mining Permits for Coal.

The purpose of this notification is to make sure that your department is notified about the proposed projects, and that you are given the opportunity to:

Register as Interested & Affected Parties (I&APs);

- Raise issues and/or concerns and provide suggestions for enhanced benefits;
- Contribute to local knowledge;
- Comment on the draft Basic Assessment Report (DBAR) and Environmental Management Plan report (EMPr); and
- Inform any other person/organization

Moepathutsi Geo-Environmental Solutions (Pty) Ltd has been appointed by the above-mentioned companies as an independent Environmental Assessment Practitioner (EAP) to undertake and manage the environmental authorization process, by conducting Public Participation Process (PPP), Environmental Impact Assessment and compile Basic Assessment Report and Environmental Management Plan report for the proposed projects.

Please find the attached Background Information Documents (BID) for a brief description of the projects and timelines. Draft BAR & EMPr reports will be made available to you through email, hand delivery or courier once they are ready, to address your issues, concerns, comments, or questions you might have during the review period.

Should you need any clarity on the attached documents or have any queries regarding the proposed projects, please do not hesitate to contact us using the details below.

#### Kind regards,

# Avela Mantshontsho

Junior Environmental Consultant Tel: 071 628 9187

#### Email: avela@mges.co.za Website: www.moepathutsiges.co.za





#### Landowner Notification and Invitation to Comment

avela@mges.co.za To O'phumudzo.maphaha@labour.gov.za'	$\begin{array}{ c c c c c c } \hline & \hline $
BID_Atok Mining House_MP.pdf 470 KB BID_Atok Mining House_MP.pdf 471 KB V House_MP.pdf	f BID_Nebo Coal_MP.pdf 472 KB
BID_Tafelkop_MP.pdf	

Good day,

I trust this email finds you well.

The Department of Labour has been identified by Lesedi Municipality as the Landowners of Portion 11 of the farm Leeuewnfontein, Gauteng.

Moepathutsi Geo-Environmental Solutions (Pty) Ltd hereby informs you of submitted applications for Mining Permits together with Environmental Authorization to the Gauteng Department of Mineral Resources & Energy (DMRE), for the purpose of extracting Coal and Clay (general). The prospective projects are situated within the Magisterial District of Nigel in Gauteng and have been proposed by the following companies:

Company Name	DMRE Reference	Proposed Project Area
Jansen Mining Group (Pty) Ltd	GP 30/5/1/3/2 (10477) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Nebo Coal CC	GP 30/5/1/3/2/ (10478) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Motalane Mining CC	GP 30/5/1/3/2/ (10479) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Atok Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10480) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Tafelkop Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10481) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR

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The purpose of this notification is to make sure that your department is notified about the proposed projects, and that you are given the opportunity to:

Register as Interested & Affected Parties (I&APs);

- Raise issues and/or concerns and provide suggestions for enhanced benefits;
- Contribute to local knowledge;
- Comment on the draft Basic Assessment Report (DBAR) and Environmental Management Plan report (EMPr); and
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Kind regards,

#### Avela Mantshontsho

Junior Environmental Consultant Tel: 071 628 9187 Email: avela@mges.co.za Website: www.moepathutsiges.co.za



#### Landowner Notification and Invitation to Comment

avela@mges.co.za		C Reply	Reply All $\rightarrow$ Forward $\cdots$
To O'Rachel.Aphane@labour.gov.za'			Mon 2023/05/29 11:45
BID_Atok Mining House_MP.pdf V BID_Jansen_ 470 KB 465 KB	MP.pdf	✓ BID_Nebo Coal_MP.pdf 472 KB ✓	
BID_Tafelkop_MP.pdf 469 KB			

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		Leeuwenfontein 284 IR
Motalane Mining CC	GP 30/5/1/3/2/ (10479) MP	Portion of Portion 11 of
-		Leeuwenfontein 284 IR
Atok Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10480) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Tafelkop Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10481) MP	Portion of Portion 11 of
	. ,	Leeuwenfontein 284 IR

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The purpose of this notification is to make sure that your department is notified about the proposed projects, and that you are given the opportunity to:

Register as Interested & Affected Parties (I&APs);
Raise issues and/or concerns and provide suggestions for enhanced benefits;

Contribute to local knowledge;

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Inform any other person/organization

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Should you need any clarity on the attached documents or have any queries regarding the proposed projects, please do not hesitate to contact us using the details below.

Kind regards,

#### Avela Mantshontsho

#### **Junior Environmental Consultant**

Tel: 071 628 9187 Email: avela@mges.co.za Website: www.moepathutsiges.co.za



#### FW: Landowner Notification and Invitation to Comment



# Greetings, FYL as attached

I am not so sure if the Department owns a land as per the email herein below.

However, we will check the attachments for the purposes of MHI and the projects are outside of the Department's jurisdiction unless the projects are at mine tailings as well as surface mining that does not fall within DMER.

I will revert back by the 7<sup>th</sup> June 2023 after checking the attachments.

Best Regards,

Rachel Aphane (HQ)

#### Neighbouring Landowner Notification and Invitation to Comment

A	avela@mges.co.za To O'Siyibanifarmingbuthelezit@	'gmail.com'		🖄 🕤 Reply	$\underset{\text{Mon 2023/05/29 15:}}{\ll} \text{Reply All} \rightarrow \text{Forward}$
PDF	BID_Atok Mining House_MP.pdf 470 KB	BID_Jansen_MP.pdf 465 KB	BID_Motalane_MP.pdf 471 KB	✓ BID_Nebo Coal_MP.pdf 472 KB ✓	
PDF	BID_Tafelkop_MP.pdf 469 KB				
Good da	у,				

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Nebo Coal CC	GP 30/5/1/3/2/ (10478) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Motalane Mining CC	GP 30/5/1/3/2/ (10479) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Atok Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10480) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Tafelkop Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10481) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR

Notice is given in compliance with the terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No.28 of 2002) (MPRDA), National Environmental Management Act, 1998 (Act No.107 of 1998), and EIA Regulations (as amended, 07 April 2017) which requires that stakeholders must be notified of the intentions of the above-mentioned companies to obtain Mining Permits for Coal and Clay (general).

The purpose of this notification is to make sure that your department is notified about the proposed projects, and that you are given the opportunity to:

Register as Interested & Affected Parties (I&APs);

• Raise issues and/or concerns and provide suggestions for enhanced benefits;

Contribute to local knowledge;

• Comment on the draft Basic Assessment Report (DBAR) and Environmental Management Plan report (EMPr); and

Inform any other person/organization

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Kind regards,

#### Avela Mantshontsho

#### **Junior Environmental Consultant**

Tel: 071 628 9187 Email: avela@mges.co.za Website: www.moepathutsiges.co.za





# **APPENDIX E: PROOF OF I& APS CONSULTATION AND CORRESPONDENCE**

#### Notification of Mining Permit Applications for Coal and General Clay



Good day,

#### I trust this email finds you well.

Moepathutsi Geo-Environmental Solutions (Pty) Ltd hereby informs you of submitted applications for Mining Permits together with Environmental Authorization to the Gauteng Department of Mineral Resources & Energy (DMRE), for the purpose of extracting Coal and Clay (general). The prospective projects are situated within the Magisterial District of Nigel in Gauteng and have been proposed by the following companies:

Company Name	DMRE Reference	Proposed Project Area
Jansen Mining Group (Pty) Ltd	GP 30/5/1/3/2 (10477) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
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Atok Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10480) MP	Portion of Portion 11 of
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The purpose of this notification is to make sure that your department is notified about the proposed projects, and that you are given the opportunity to:

Register as Interested & Affected Parties (I&APs);

Raise issues and/or concerns and provide suggestions for enhanced benefits;
Contribute to local knowledge:

Comment on the draft Basic Assessment Report (DBAR) and Environmental Management Plan report (EMPr); and

Inform any other person/organization

Moepathutsi Geo-Environmental Solutions (Pty) Ltd has been appointed by the above-mentioned companies as an independent Environmental Assessment Practitioner (EAP) to undertake and manage the environmental authorization process, by conducting Public Participation Process (PPP), Environmental Impact Assessment and compile Basic Assessment Report and Environmental Management Plan report for the proposed projects.

Please find the attached Background Information Documents (BID) for a brief description of the projects and timelines. Draft BAR & EMPr reports will be made available to you through email, hand delivery or courier once they are ready, to address your issues, concerns, comments, or questions you might have during the review period.

Should you need any clarity on the attached documents or have any queries regarding the proposed projects, please do not hesitate to contact us using the details below.

Kind regards,

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#### RE: Notification of Mining Permit Applications for Coal and General Clay



#### Good day,

On behalf of the Director-General, Dr Sean Phillips, this email serves to acknowledge receipt of your correspondence below which will receive the necessary attention by the Department of Water and Sanitation (DWS).

Kindest regards

**Central Point** 

#### Notification of Mining Permit Applications for Coal and General Clay

avela@mges.co.za To O'maben@dwa.gov.za'			4	5	Forward
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#### Regards

#### Notification of Mining Permit Applications for Coal and General Clay

avela@mges.co.za To ○'abimbola.olowa@gauteng	.gov.za'		C Reply	$\begin{array}{ c c c c c } \hline & & & \\ \hline \hline & & & \\ \hline & & & \\ \hline \hline & & & \\ \hline \hline \\ \hline & & & \\ \hline \hline & & & \\ \hline \hline & & & \\ \hline \hline \\ \hline & & & \\ \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \hline \hline \hline \\ \hline \hline$
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BID_Tafelkop_MP.pdf 469 KB				

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-		Leeuwenfontein 284 IR
Atok Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10480) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Tafelkop Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10481) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR

🏀 Reply All

← Reply

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....

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Mon 2023/05/29 22:47

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- Register as Interested & Affected Parties (I&APs);
  - Raise issues and/or concerns and provide suggestions for enhanced benefits;
  - Contribute to local knowledge;
  - Comment on the draft Basic Assessment Report (DBAR) and Environmental Management Plan report (EMPr); and
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Please find the attached Background Information Documents (BID) for a brief description of the projects and timelines. Draft BAR & EMPr reports will be made available to you through email, hand delivery or courier once they are ready, to address your issues, concerns, comments, or questions you might have during the review period.

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Kind regards.

#### **Avela Mantshontsho**

#### **Junior Environmental Consultant**

Tel: 071 628 9187 Email: avela@mges.co.za Website: www.moepathutsiges.co.za



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avela@mges.co.za	za'		🖄 🕤 Reply	≪ Reply All → Forward Mon 2023/05/29 14:38
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#### Notification of Mining Permit Applications for Coal and General Clay



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#### Land Restitution Enquiry for Mining Permit Applications for Coal and General Clay



Good day,

#### I trust this email finds you well.

You are kindly receiving this email as an enquiry about any possible land claims on the following prospective projects:

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Kindly review the attached BIDs for a detailed description of the projects.

The purpose of this enquiry is to ensure that the claimants are notified about the proposed projects and are given the opportunity to: -

- o Register as I&APs and respond to the environmental compliance process;
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Re: Land Restitution Enquiry for Mining Permit Applications for Coal and General Clay



(i) Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message

Good day

please note that receipt of your land claim enquiry is acknowledged. You are further advised that the office's turnaround time for responding to land claim enquiry is 14 working days.

regards

Fundiswa



•••

### FW: Land Restitution Enquiry for Mining Permit Applications for Coal and General Clay



Good day,

The receipt of your land claim inquiry is now acknowledged; take note that we will get back to you as soon as possible.

#### Regards,

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BID_Tafelkop_MP.pdf 461 KB						

#### Good Morning

Kindly assist with this enquiry as the properties falls under Lesedi Local Municipality in Gauteng.





RE: Land Restitution Enquiry for Mining Permit Applications for Coal and General Clay



(i) You replied to this message on 2023/05/30 14:18.

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

#### Good day

Avela: your land claim status enquiry of the properties in question is hereby acknowledged and further take note of the 14 day office turn around-time.

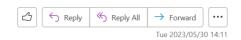
Amu & Fundiswa : herewith is an enquiry for your action

#### Regards

Desiree



Desirec Tsholofelo Rgole Information Management Support Office of the Regional Land Claims Commissioner: Gauteng Province Tel: 012 310 6578 | E-mail: <u>desirec.kgole@dalrrd.gov.za</u> Address: 09 Bailey Lane, Areadia, Pretoria, 0007, South Africa www.dalrrd.gov.za





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Tel: 071 628 9187 Email: avela@mges.co.za Website: www.moepathutsiges.co.za





avela@mges.co.za To `!wazi.mahlangu@dpw.gov	.za'			y $\bigcirc$ Reply All $\rightarrow$ Forward $\bigcirc$ Mon 2023/05/29 15:06
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BID_Tafelkop_MP.pdf PDF 469 KB				
Good day.				

#### I trust this email finds you well

Moepathutsi Geo-Environmental Solutions (Pty) Ltd hereby informs you of submitted applications for Mining Permits together with Environmental Authorization to the Gauteng Department of Mineral Resources & Energy (DMRE), for the purpose of extracting Coal and Clay (general). The prospective projects are situated within the Magisterial District of Nigel in Gauteng and have been proposed by the following companies:

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Motalane Mining CC	GP 30/5/1/3/2/ (10479) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Atok Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10480) MP	Portion of Portion 11 of
		Leeuwenfontein 284 IR
Tafelkop Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10481) MP	Portion of Portion 11 of
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Notice is given in compliance with the terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No.28 of 2002) (MPRDA), National Environmental Management Act, 1998 (Act No.107 of 1998), and EIA Regulations (as amended, 07 April 2017) which requires that stakeholders must be notified of the intentions of the above-mentioned companies to obtain Mining Permits for Coal and Clay (general).

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#### Notification of Mining Permit Applications for Coal and General Clay

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#### Notification of Mining Permit Applications for Coal and General Clay

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### Notification of Mining Permit Applications for Coal and General Clay

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#### Notification of Mining Permit Applications for Coal and General Clay



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Moepathutsi Geo-Environmental Solutions (Pty) Ltd hereby informs you of submitted applications for Mining Permits together with Environmental Authorization to the Gauteng Department of Mineral Resources & Energy (DMRE), for the purpose of extracting Coal and Clay (general). The prospective projects are situated within the Magisterial District of Nigel in Gauteng and have been proposed by the following companies:

Company Name	DMRE Reference	Proposed Project Area
Jansen Mining Group (Pty) Ltd	GP 30/5/1/3/2 (10477) MP	Portion of Portion 11 of Leeuwenfontein 284 IR
Nebo Coal CC	GP 30/5/1/3/2/ (10478) MP	Portion of Portion 11 of Leeuwenfontein 284 IR
Motalane Mining CC	GP 30/5/1/3/2/ (10479) MP	Portion of Portion 11 of Leeuwenfontein 284 IR
Atok Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10480) MP	Portion of Portion 11 of Leeuwenfontein 284 IR
Tafelkop Mining House (Pty) Ltd	GP 30/5/1/3/2/ (10481) MP	Portion of Portion 11 of Leeuwenfontein 284 IR

Notice is given in compliance with the terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No.28 of 2002) (MPRDA), National Environmental Management Act, 1998 (Act No.107 of 1998), and EIA Regulations (as amended, 07 April 2017) which requires that stakeholders must be notified of the intentions of the above-mentioned companies to obtain Mining Permits for Coal and Clay (general).

The purpose of this notification is to make sure that your department is notified about the proposed projects, and that you are given the opportunity to:

- Register as Interested & Affected Parties (I&APs);
  - Raise issues and/or concerns and provide suggestions for enhanced benefits;
  - Contribute to local knowledge;

• Comment on the draft Basic Assessment Report (DBAR) and Environmental Management Plan report (EMPr); and

Inform any other person/organization

Moepathutsi Geo-Environmental Solutions (Pty) Ltd has been appointed by the above-mentioned companies as an independent Environmental Assessment Practitioner (EAP) to undertake and manage the environmental authorization process, by conducting Public Participation Process (PPP), Environmental Impact Assessment and compile Basic Assessment Report and Environmental Management Plan report for the proposed projects.

Please find the attached Background Information Documents (BID) for a brief description of the projects and timelines. Draft BAR & EMPr reports will be made available to you through email, hand delivery or courier once they are ready, to address your issues, concerns, comments, or questions you might have during the review period.

Should you need any clarity on the attached documents or have any queries regarding the proposed projects, please do not hesitate to contact us using the details below.

Kind regards,

# Avela Mantshontsho

Junior Environmental Consultant Tel: 071 628 9187 Email: avela@mges.co.za Website: www.moepathutsiges.co.za



# APPENDIX F: PROOF OF SITE ASSESSMENT AND SITE NOTICES





NOTICE IS GIVEN FOR MINING PERMIT APPLICATION IN TERMS OF REGULATION 3 (6) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT NO 107 OF 1998): ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS 2014 (AS AMENDED), TOGETHER WITH SECTION 12 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2008 (ACT NO 49 OF 2008) AS AMENDED.	DIE NASIONALE OMGEWINGSBESTUURWET (WET NO 107 VAN 1998):
NATURE OF ACTIVITY, LOCATION AND PROPERTY DESCRIPTION:	AARD VAN AKTIWITEIT, LIGGING EN EIENDOM BESKRYWING:
Application for Mining Permit and Environmental Authorization in terms of the MPRDA and NEMA Act & Regulations, in the Magisterial District of Nigel, Gauteng Province.	Aansoek om Mynpermit en Omgewingsmagtiging ingevolge die MPRDA en NEMA Wet & Regulasies, in die landdrosdistrik van Nigel, Gauteng provinsie.
The Mining Permit area is located on portions of Portion 11 of the farm Leeuwenfontein 284 IR, situated in the Magisterial District of Nigel in the Gauteng Province. The proposed project area is located approximately	

15 km northeast of Nigel and 17 km west of Devon, along N17 towards Springs.

# MINERALS APPLIED FOR: COAL AND GENERAL CLAY

APPLICANT	DMRE REF NO:	PROPERTY DETAILS
Jansen Mining Group (Pty) Ltd	GP 30/5/1/3/2/104779 MP	Portion of Portion 11 of Leeuwenfontein 284 IR
Nebo Coal CC	GP 30/5/1/3/2/10478 MP	Portion of Portion 11 of Leeuwenfontein 284 IR
Motalane Mining CC	GP 30/5/1/3/2/10479 MP	Portion of Portion 11 of Leeuwenfontein 284 IR
Atok Mining House (Pty) Ltd	GP 30/5/1/3/2/10480 MP	Portion of Portion 11 of Leeuwenfontein 284 IR
Atok Mining House (Pty) Ltd	GP 30/5/1/1/2/10801 PR	Portion of Portion 11 of Leeuwenfontein 284 IR
Tafelkop Mining House (Pty) Ltd	GP 30/5/1/3/2/10481 MP	Portion of Portion 11 of Leeuwenfontein 284 IR

# REGISTRATION OF INTERESTED AND AFFECTED PARTIES

In terms of Regulations 42 & 43 of the EIA Regulation published in Government Notice No. 983 of 08 December 2014 the public is invited to register as interested and affected parties (I&APs) to express interest, comment and participate in the Public Participation Process (PPP). Draft Basic Assessment Reports will be available for review for a period of 30 days and will be placed at the local library and Municipality as well as electronically upon request.

PROJECT TIMEERAMES:

Project Announcement: April 2023

Consultation: 24 April 2023 to 23 May 2023

Draft Basic Assessment Report Review: 24 May 2023 to 22 June 2023 (Electronically upon request via the

EAP's contacts below).

Final Submission: 24 July 2023.

# REGISTRATION, QUERIES AND WRITTEN COMMENT SHOULD BE SUBMITTED TO:



Contact Person: Boipelo Mothathedi E-mail: boipelo@mges.co.za Cellphone No: 081 388 1187

Contact Person: Avela Mantshontsho E-mail: avela@mges.co.za Cellphone No: 071 628 9187

geleë in die landdrosdistrik van Nigel in die Gauteng provinsie. Die voorgestelde projekgebied is ongeveer 15 km noordoos van Nigel en 17 km wes van Devon, langs N17 na Springs geleë.

# MINERALE WAARVOOR AANSOEK WORD: STEENKOOL EN ALGEMENE KLEL

1			
	APPLICANT	DMRE REF NO:	PROPERTY DETAILS
	Jansen Mining Group (Pty) Ltd	GP 30/5/1/3/2/104779 MP	Portion of Portion 11 of Leeuwenfontein 284 IR
	Nebo Coal CC	GP 30/5/1/3/2/10478 MP	Portion of Portion 11 of Leeuwenfontein 284 IR
	Motalane Mining CC	GP 30/5/1/3/2/10479 MP	Portion of Portion 11 of Leeuwenfontein 284 IR
	Atok Mining House (Pty) Ltd	GP 30/5/1/3/2/10480 MP	Portion of Portion 11 of Leeuwenfontein 284 IR
	Atok Mining House (Pty) Ltd	GP 30/5/1/1/2/10801 PR	Portion of Portion 11 of Leeuwenfontein 284 IR
	Tafelkop Mining House (Pty) Ltd	GP 30/5/1/3/2/10481 MP	Portion of Portion 11 of Leeuwenfontein 284 IR

# REGISTRASIE VAN BELANGHEBBENDE EN GEAFFEKTEERDE PARTYE

Ingevolge Regulasies 42 & 43 van die OIB-regulasie gepubliseer in Staatskennisgewing No. 983 van 08 Desember 2014 word die publiek uitgenooi om te registreer as belanghebbende en geaffekteerde partve (B&GPe) om belangstelling uit te spreek, kommentaar te lewer en deel te neem aan die Openbare Deelnameproses (ODP)). Konsep Basiese Assesseringsverslae sal vir 'n tydperk van 30 dae beskikbaar wees vir hersiening en sal by die plaaslike biblioteek en Munisipaliteit sowel as elektronies op versoek deplaas word.

# PROJEKTYDRAAMME:

Projek Aankondiging: April 2023

Konsultasie: 24 April 2023 tot 23 Mei 2023

Konsep Basiese Assesseringsverslag Hersiening: 24 Mei 2023 tot 22 Junie 2023 (Elektronies op

versoek via die WHP se kontakte hieronder).

Finale verslag indiening: 24 Julie 2023.

# REGISTRASIE, NAVRAE EN SKRIFTELIKE OPMERKING MOET INGEDIEN WORD AAN:



Kontak persoon: Boipelo Mothathedi E-pos: boipelo@mges.co.za Selfoonnommer: 081 388 1187

Kontak persoon: Avela Mantshontsho E-pos: avela@mges.co.za Selfoonnomber No: 071 628 9187



26º 17' 55.9428"S 28º 36' 55.9428"E

26º 24' 53.838"S 28º 28' 10.3368"E



26° 24' 19.224"S 28° 37' 52.7592"E

26° 23' 25.9872"S 28° 40' 13.3212"E

26° 21' 42.6744"S 28° 36' 46.7454"E



Springs

# **APPENDIX G: IMPACT ASSESSMENT**

NAME OF ACTIVITY (E.g., For mining- drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etcetcetc 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, etcetc)	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts) (e.g., dust, 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)	SIGNIFICANCE 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
Construction of infrastructure.	Generation of fugitive dust.	Air Quality	Construction phase	High	nitor and manage through mine plan and dust suppression.	Moderate
	Topography and visual alteration.	Topography and visual environment.	Construction and operational phase	Medium	Avoid and minimize through mine plan.	Low
	Soil resources degradation.	Soils	Construction and operational	Medium/High	Prevent through soil rehabilitation and Stormwater Management Plan.	Low
	Influx of alien invasive vegetation.	Flora and fauna	Construction phase	Medium	Prevent through Stormwater Management Plan and alien invasive management.	Low
	Noise generation	Noise	Construction and operational	High	Monitor and prevent through regular vehicle inspections.	Moderate
	Sedimentation and siltation of watercourses.	Wetlands and surface water.	Construction phase	High	<ul> <li>Mining activities must take place at least 500m away from any watercourses</li> </ul>	Moderate

					<ul> <li>and wetlands.</li> <li>Monitor and prevent through Stormwater Management Plan.</li> </ul>	
Pollution Dam Control	Contamination of water resources.	Wetland and aquatic ecology	Operational phase	Medium/High	Monitor and manage through Stormwater Management Plan and Aquatic monitoring programme.	Low
		Surface water			Manage and prevent through Stormwater Management Plan.	
		Ground water			Monitor and manage through Stormwater Management Plan, Groundwater monitoring programme and emergency response plan.	
Social	Temporary job creation	Socio-economic	Operational	Positive		Positive
	Growth and investment in the local economy.					
Decommissioning	Loss of temporary employment.	Socio-economic	Decommissioning/closure	High	Temporary staff should be trained in management skills that can be applied to other employers.	Moderate
	Rehabilitation of the mining site.	Fauna and Flora	Decommissioning/closure	Medium/High	The site must be rehabilitated as close as to its pre- mining state as possible.	Low

# Boipelo Motlhatlhedi

Environmental Assessment Practitioner Address Pretoria, GP, 0184 Phone 083 473 8300 E-mail mothathedib04@gmail.com

Environmental Assessment Practitioner with over 3 years of successful experience in Environmental Impact Assessments and Project Management. Recognized consistently for performance excellence and contributions to success in the environmental industry. Strengths in communication, report writing, and presentation backed by Geological skills.

# Skills

Environmental Impact Assessments	****
Environmental Management and Monitoring	***☆☆
Organizational and Project Management skills	***☆
Communication and Report writing skills	****
Somme and Report Winnig skills	

# Work History

2018-05 - 2021-01	Environmental Assessment Practitioner
	<ul> <li>Singo Consulting (Pty) Ltd, Witbank, Mpumalanga</li> <li>Effectively managing projects and administrating the environmental legislative processes (e.g. Minerals and Petroleum Resources Development Act, No. 28 of2002).</li> <li>Actively involved in project management and Environmental Authorization processes.</li> <li>Basic Assessment and Scoping and Environmental Impact Assessment processes according to the EIA legislation.</li> <li>Environmental site assessment &amp; exploration drilling.</li> <li>Public, authority and stakeholder consultation.</li> <li>Public Participation Processes.</li> <li>Compiling Basic Assessment and Environmental Management Reports.</li> <li>Mining Permit and Prospecting Right Applications.</li> <li>Quickly learned new skills and applied them to daily tasks, improving efficiency and productivity.</li> </ul>
2016-02 - 2016-07	<ul> <li>Geophysicist Intern</li> <li>Open Grounds Resources (Pty) Ltd, Pretoria, Gauteng</li> <li>Assisting with conducting gravity, Ground Penetrating Radar (GPR) and Resistivity surveys for clients.</li> </ul>

Education	<ul> <li>Compiling, interpreting and integrating geophysical data for regional scale interpretations.</li> <li>Interpreting data using Surfer Software.</li> <li>Compiling reports for clients</li> </ul>
2017-01 - 2019-12	Bachelor of Technology: Geology
	Tshwane University of Technology – Pretoria
2013-01 - 2016-12	National Diploma: Geology
	Tshwane University of Technology – Pretoria
2010-01 - 2012-12	High School Diploma
	Mmametlhake High School - Mmametlhake, Mpumalanga
References	
	<ul> <li>Mr Alten Du Plessis (Professional)</li> </ul>

Open Grounds Resources Tel: 012 996 3003 Cell: 082 450 5077 Email: <u>alten@openground.co.za</u>

Dr Kenneth Singo (Professional)
 Singo Consulting (Pty) Ltd
 Tel: 013 692 0041
 Cell: 078 272 7839
 Email: kenneth@singoconsulting.co.za