ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR COAL MINING RIGHT, WATER USE LICENSE, WASTE MANAGEMENT LICENCE, AND ENVIRONMENTAL AUTHORISATION APPLICATIONS.

DMRE REF: MP 30/5/1/2/2/10383 MR.

PREPARED FOR:

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Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

2023

ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT-PROGRAMME

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR A MINING RIGHT ON THE FARM LEEUWFONTEIN 48 IS PORTIONS 7 AND 20 (EXCLUDING PORTION 26), SITUATED IN THE UNDER STEVE TSHWETE MAGISTERIAL DISTRICT MPUMALANGA PROVINCE.

DMRE REF NO: MP 30/5/1/2/2/10383 MR

APPLICANT: TORNOWIZE (PTY) LTD

COMPILED BY: SINGO CONSULTING (PTY) LTD

DATE: AUGUST 2023

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The opinion expressed in this, and associated reports are based on the information provided by [Tornowize] to Singo Consulting (Pty) Ltd ("Singo Consulting") and is specific to the scope of work agreed with Tornowize (Pty) Ltd.

Singo Consulting acts as an advisor to Tornowize and exercises all reasonable skill and care in the provision of its professional services in a manner consistent with the level of care and expertise exercised by members of the environmental profession.

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Where site inspections, testing or fieldwork have taken place, the report is based on the information made available by the Tornowize or their nominees during the visit, visual observations and any subsequent discussions with regulatory authorities. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Singo Consulting is both complete and accurate. It is further assumed that normal activities were being undertaken at the site on the day of the site visit(s), unless explicitly stated otherwise.

These views do not generally refer to circumstances and features that may occur after the date of this study, which were not previously known to Singo Consulting (Pty) Ltd or had the opportunity to assess.

EXECUTIVE SUMMARY

Tornowize (Pty) Ltd (2014/067373/07) (the applicant) has appointed Singo Consulting (Pty) Ltd (consultant) to apply for Water Use License (WUL) ref: WU28322 as well as the Waste Management License (WML) and to undertake an Environmental Impact Assessment (EIA) and Environmental Authorisation processes for the purpose of mining coal on the portion 7 & 20 (excluding portion 26) of the farm Leeuwfontein 48 IS located within the Steve Tshwete Local Municipality under the Middleburg Magisterial District.

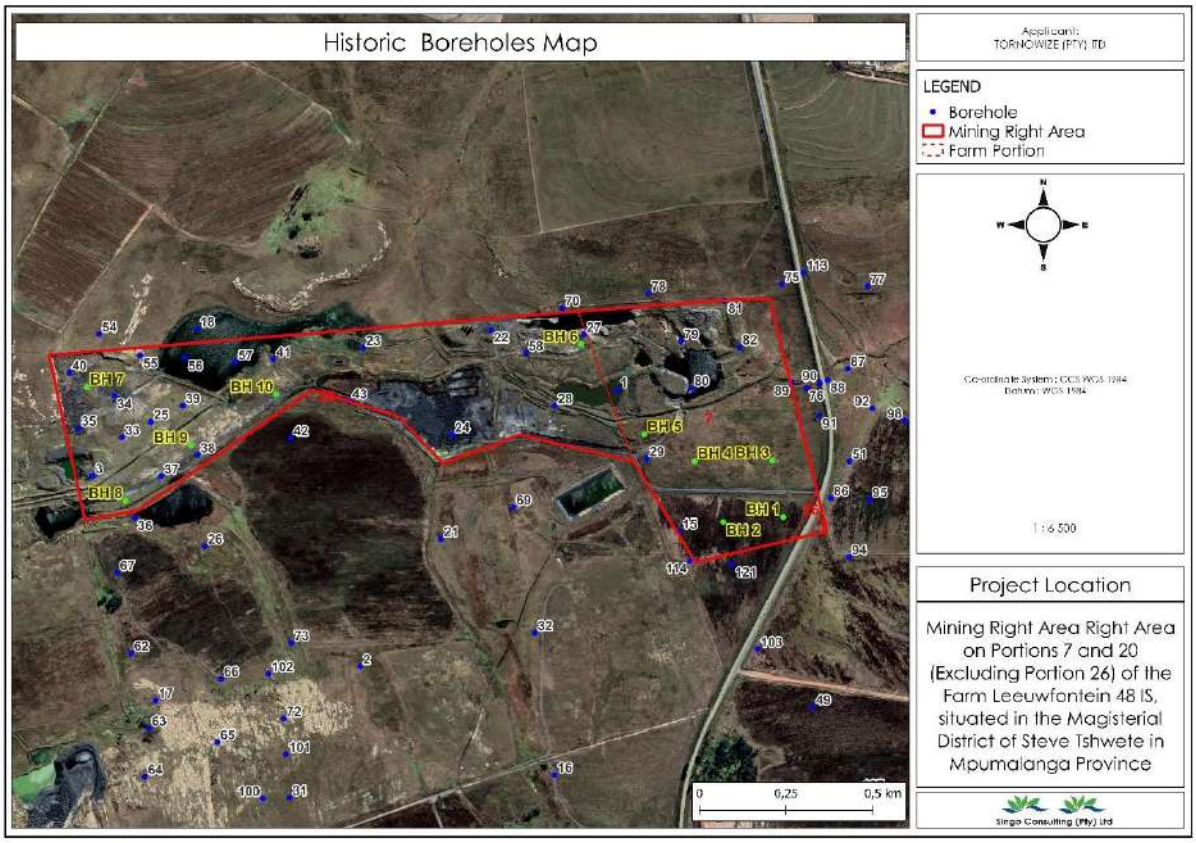
The proposed open cast/ surface coal mining operations constitute various listed activities, as contained in the scheduled activities in Government Notice Regulation No 324, 325 and 327 (amended 7 April 2017), now amended as GNR 517 (11 June 2021). As such, a full Scoping and EIA process must be followed. Prior to any listed activity being approved by the DMRE, an environmental process must be undertaken, and a report submitted to the relevant environmental authority for consideration.

A Mining right application was lodged with the DMRE on the 05th of October 2022 with reference number: and the acceptance letter was signed on the 9th of February 2023 by the regional manager with the DMRE Ref: MP 30/5/1/2/2/10383 MR, however the letter was written an incorrect farm name and it was received 6 days later by the applicant, the EAP requested the Competent Authority to readdress the acceptance letter content and replace portion 9 of the farm Bankfontein 215 IS with Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 (Refer to Appendix 23). The applicant withdrawn an application for the Prospecting right with DMRE ref: MP 30/5/1/1/2/16234 PR to be accepted in favour of this Proposed Mining Right on the same farm. Project Public participation process and review period proceeded on the 24th of February 2023. The EAP has published a newspaper, sent out a draft scoping report through e-mail and consulted the landowner face-face, conducted a community meeting with all the adjacent farms in the area which they are in support of the project see consultation report for this project for minutes and pictures of the meeting. A scoping report (SR) was submitted to the DMRE Mpumalanga offices on the 23rd of March 2023 and was respectfully accepted on the 16th of May 2023, see Appendix 23.

Tornowize (Pty) Ltd has submitted a mining permit application for coal extraction on a portion of Portion 19 of the Leeuwfontein 48 IS farm. The application is currently awaiting an acceptance letter. The project area can be accessed via the R35 provincial road, which stretches from Middleburg town to Bethal.

The proposed project area has a history of mining activity, as indicated by the landowner. Ukufisa Holdings (Pty) Ltd was involved in mining operations in certain sections of the area. Unfortunately, no rehabilitation efforts have been undertaken following the mining activities. Consequently, remnants of the mining activities, such as overburden, stockpiles, and a pit, still exist on the site. This makes the area to be found under a highly modified area which is also depicted in terrestrial biodiversity map however, according to screening report it shows that the area of interest is under a very high sensitivity to terrestrial biodiversity which contradict with the statement of the area being heavily modified. It was

then confirmed during the site assessment that the area of interest is highly modified making it less sensitive to terrestrial biodiversity.



Appendix 1: Historic boreholes (Singo Consulting, 2023)

Singo consulting drilling was appointed by Tornowise to conduct exploration drilling on the mining right area. 16 boreholes have been drilled within the project area, where 7 of the boreholes intercepted coal seams of the Witbank coalfield, borehole results are presented on figure 1 below.

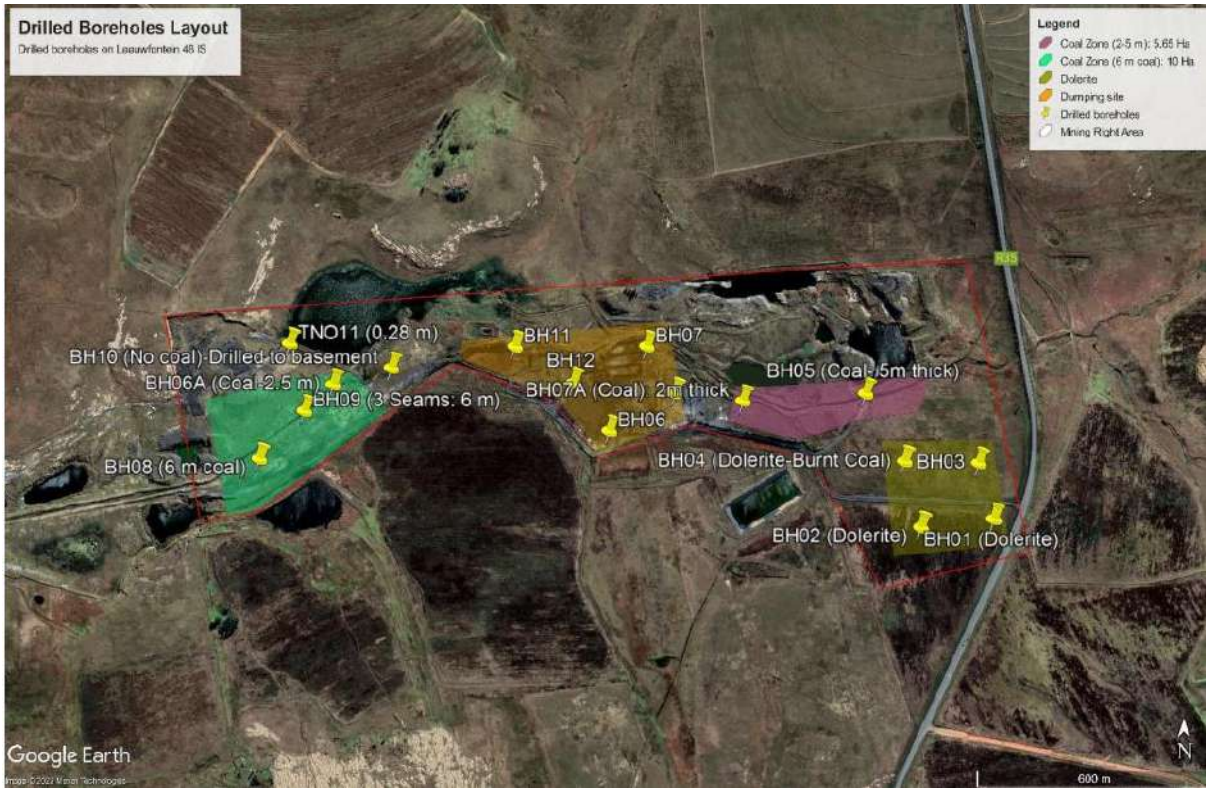


Figure 1:Drilled borehole layout

Coal zone layout present coal delineation zone within the project area

Figure 2: Coal Zone layout

Notably, the pit created during the previous mining activities has become a water-filled depression. There are naturally occurring streams and wetlands in the vicinity that were disturbed by the previous mining operations. In light of this, water samples have been collected to assess potential contamination resulting from the past mining activities. The project area features powerlines; however, they are not currently connected to the Eskom operating line system. Additionally, an electric transformer on-site has been identified as being damaged.

As per the acceptance letter, the Environmental Impact Assessment (EIA) phase may continue and the final EIA and EMPr should be submitted within 106 days from the date of SR approval. Accordingly, the draft scoping was prepared and submitted for public and stakeholder review in terms of the National Environmental Management Act, 1998 (NEMA) and the National Environmental Management Waste Act, 2008 (NEM:WA) 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).

The Integrated Environmental Authorisation (IEA) application includes the aforementioned property where the mining right area (MRA) has an estimated life of mine (LoM) of 15 years. Associated infrastructure is located on portion 7 & 20 (excluding portion 20) of Leeuwfontein 48 IS. The mining right application covers 98.600 ha and falls in the Karoo Dolerite Suite geology. Open cast coal mining recovers a greater proportion of the coal deposit than underground methods, as more of the coal seams in the strata may be exploited. The mineable in-situ (MTIS) on portions 7 and 20 (excluding portion 26) of the farm Leeuwfontein 48 IS is estimated at a high confidence level. The farm Leeuwfontein 48 IS has already been explored by Ingwe Coal Corporation Ltd and Anglo-American Corporation of S.A. Ltd, borehole information on the area of interest confirms the availability coal resource, all seams of the Witbank/Highveld coalfields were intersected during exploration drilling. From the historic borehole data, from the 7 seams, Seam 5, Seam 4 Upper, Seam 4 Lower, Seam 2 upper, Seam 2 lower, and Seam 1 fall inside the cut off limit average thickness of 0.5m according to SAMREC code in line with SASNS (10320:2004) standards. The mining right area is situated in a vicinity that was already mined out, also, there are countless coal mines adjacent to the mining right area. This increases the assurance and confidence of coal availability throughout the area of interest.

SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT (S&EIA) PROCESS

A S&EIA is conducted in two phases. The first phase is scoping, and the second phase is the EIA/EMPr report compilation. The scoping phase commence once the application has been submitted with the competent authority and the following tasks will be undertaken: identify interested and affected parties (I&APs) and stakeholders, identify relevant policies and legislation; consider the need and desirability of the project; consider alternative technologies and sites; identify the potential environmental issues;

determine the level of assessment and public participation process required for the EIA phase; and identify preliminary measures to avoid, mitigate or manage potential impacts. The objectives of the EIA phase will be to assess the potential impacts associated with the preferred project alternatives as per the terms of reference for the assessment that are set out in the scoping report. The EIA/EMPr report will document the assessment findings and will detail the measures required to avoid, mitigate and/or manage the potential impacts.

The requirements for the S&EIA process are specifically contained in Chapter 4 Part 3 of the NEMA Reg No 326 (amended on 7 April 2017). The EIA process can take up to 300 days to complete (87 days for scoping phase, 106 days for EIA phase, and 107 days for competent authority to review). EIA report is currently within the 106 days EIA phase which will be submitted to the DMRE for final decision making after the 30-day review period.

The details for the Project applicant are detonated in the table below:

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Project location.

Farm name:	Leeuwfontein 48 IS Portions 7 And 20 (Excluding Portion 26)
Application area (ha):	Approximately 98.600ha
Magisterial district:	Steve Tshwete

Distance and direction from nearest town:	Approximately 22.45 km North-East of Kriel Approximately 6.04 km South of Komati
21-Digit Surveyor General Code	T0IS00000000004800020 T0IS00000000004800007

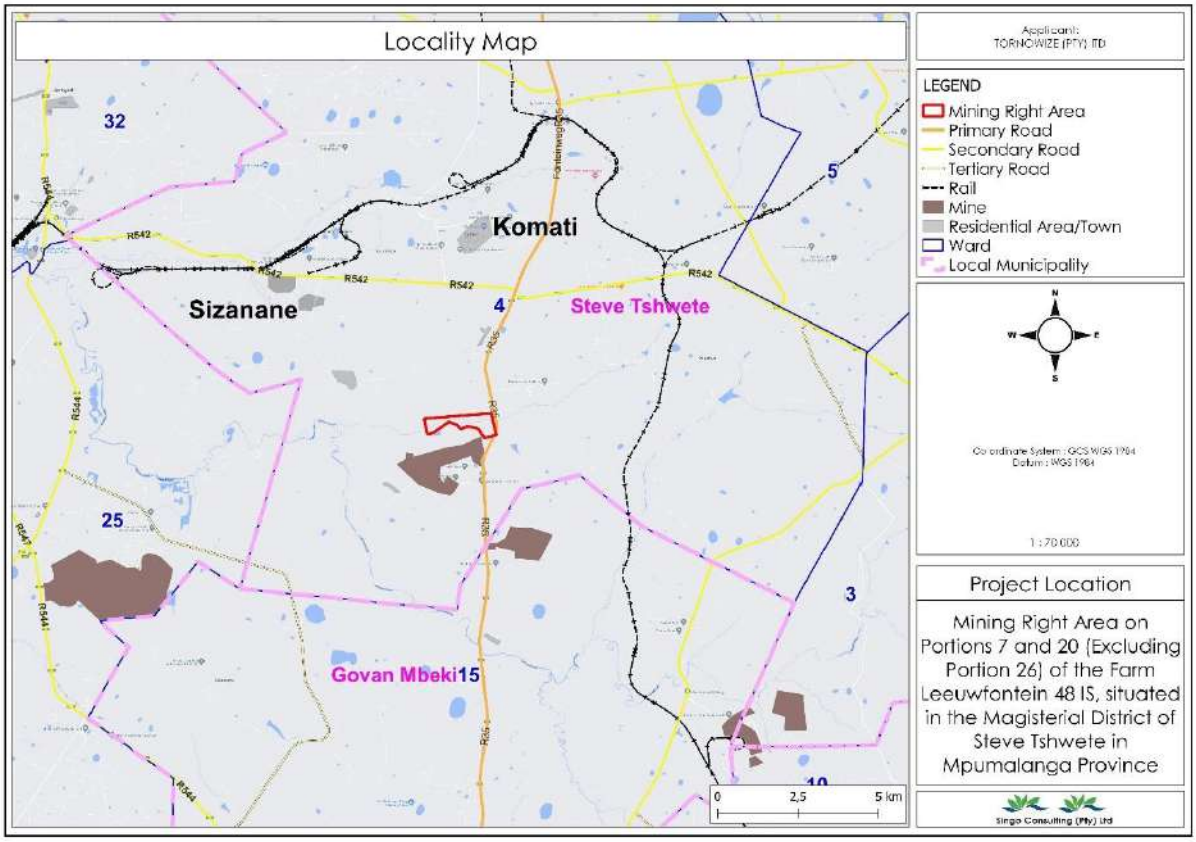

Figure 3: Locality Map (Singo Consulting)

PURPOSE OF THIS REPORT

The purpose of the EIA process is to ensure that potential environmental and socio-economic impacts associated with project are identified, assessed and appropriately managed where possible.

Various specialist studies were undertaken during the Scoping phase evaluation to inform the EIA report. These include:

- Soil, Land Capability, Agricultural Potential and Hydropedology Assessment;
- Surface Water Assessment;

- Hydrogeological (Groundwater) Assessment;
- Terrestrial Ecology Assessment;
- Wetland Assessment;
- Heritage and Palaeontological Assessment;
- Socio-economic Assessment/ Social and Labour Plan;

Conducted studies that are also incorporated in the EIA include:

- Blasting and Vibration Assessment;
- Soil, Land Capability, Agricultural Potential and Hydropedology Assessment;
- Surface Water Assessment;
- Hydrogeological (Groundwater) Assessment;
- Terrestrial Ecology Assessment;
- Wetland Assessment;
- Socio-economic Assessment/ Social and Labour Plan;
- Waste Classification (IWWMP);
- Rehabilitation, Decommissioning and Closure Assessment.
- Mine Work Programme

A summary of impacts identified include:

- Surface and Groundwater Contamination.
- Wetland habitat loss and associated habitat for fauna and flora.
- Impact on sensitive heritage features including graves and historical buildings.
- Removal of natural vegetation and fragmentation of habitats.
- Faunal displacement and mortality.
- Loss of species of conservation concern.
- Dust emissions.

- Soil contamination and loss of soil resources.
- Loss of high agricultural potential land.
- Land use conversion (agricultural to mining).
- Noise and vibration nuisance has been done on surrounding mining houses like (Jindal, foloyi).
- Decant of water and AMD (post-closure).
- Direct and Indirect Job creation.
- Economic stimulation and growth.
- Community based projects which benefits the community.
- Increased traffic volumes.
- The mine employing a small number of people

Table 1: Summary of Impact assessment

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Surface and groundwater		
Ground and surface water contamination	Negative	➢ Vegetation clearance and the exposure of soils must be kept to an absolute minimum. ➢ Temporary erosion control measures (e.g., sediment nets, berms, etc.) must be employed around working areas. ➢ The recommended water quality monitoring programme is implemented at least a year prior to construction, to obtain a suitable baseline for the wet and dry seasons. ➢ The proposed SWMP is implemented. Erosion and sediment control, as well as the containment and management of dirty water runoff, are the most important aspects to prevent negative impacts on the Olifants River. ➢ Energy dissipation measures are implemented

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		at steep sections as well as at the exits of the proposed stormwater channels. ➢ Sufficient freeboard in the PCDs and other dirty water dams must be ensured at all times. The dams must be strictly managed in accordance with GN704 regulations. ➢ Dirty water must not be discharged to the environment. Excess water within the mine water circuit, must be appropriately dealt with, in agreement with the DWS. ➢ Abstractions from the Olifants River during the dry season months should be avoided as far possible. The use of water from flooded surrounding historical adits, or the construction of suitably sized PCDs should be investigated. ➢ Stormwater management and erosion control along the proposed mine roads must beensured. It is recommended that runoff is diverted off the roads through suitably spaced berms. ➢ Exemption from GN704 is obtained for infrastructure that is located within the floodlines or watercourses, or 100 m horizontal distance from a watercourse. ➢ Suitably sized culverts are placed where linear infrastructure crosses the minor nonperennial drainage lines. ➢ Post mine closure, rehabilitation must ensure that erosion prevention is adequate for the long-term. ➢ The recommended mitigation measures and monitoring plans are implemented. **The following mitigation measures are recommended in the operation phase:** • The study area falls on a fractured aquifer system, the mine planning should take into consideration the fracture zones in the Vryheid formation, drilling activities should not contact the fractures as that is where most groundwater in the area is found and to prevent possible

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• groundwater pollution from residual explosive material used. • The numerical model should be recalibrated as soon as more hydrogeological data such as monitoring holes are made available. This would enhance model predictions and certainty. • It is recommended that there should be regular testing or monitoring of surrounding soil, water resources to detect any change in chemistry so that remedial measures are implemented in time. • The monitoring process throughout the existence of the project, the chemical and physical parameters of the water samples should be tested and compared with the SANS 241: 2015 • There should be soil, water resources and land pollution mitigation measures on site. • Wastewater source should be identified, and mitigation measures put in place to prevent groundwater contamination. • The stockpile, there should be regular monitoring of any heavy metal which could be exposed, as such could result in leaching during rainfall. • Proper and competent structure of the tailings dam should be built, to contain liquid, or solid waste and to prevent such waste from entering the outside environment. • According to section 21(S21) of the National Water Act 36 of 1998, if a proposed project triggers any of the listed S21 activities, a water use license must be applied for. For this project, there will be activities which includes abstraction of water from groundwater, mining activities from the water courses dust suppression, dewatering, and ROM stockpiles. It is therefore recommended that a water use license be applied for. • It is recommended that to protect the wetlands onsite, it should be made easy to identify them, and further development is required before the operations commence such as planting of various plants.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• It is recommended that compliance of relevant legislations be ensured, NEMA Act 107 of 1998, NWA Act 36 of 1998, NEM: waste Management Act 59 of 2008. • It is recommended that during the existence of the project there should also be regular maintenance of the mobile ablutions, to avoid leakage of waste into the ground. • There should be boreholes in and around the mining right area, to monitor the groundwater quality and quantity.
Wetland/River/ Hydrology/Geomorphology	Negative	• Include environmental awareness aspects into the site induction program to ensure all staff are aware of the location and importance of wetland habitats. • Establish emergency response measures and a clearly defined chain of communication to rapidly deal with any unforeseen impacts to wetlands, e.g. spills. • No stockpiling of the material may take place within the wetland/watercourse areas and temporary construction camps and infrastructure should also be located outside the wetland footprint. • Regular cleaning up of the wetland areas should be undertaken to remove litter. • Design and implement a construction stormwater management plan that aims to minimise the concentration of flow and increase flow velocity, as well as minimise sediment transport off-site. • Where practically possible, the major earthworks should be undertaken during the dry season (roughly from April to August) to limit erosion due to rainfall runoff. • Store and handle potentially polluting substances and waste in designated, bunded facilities. • Waste should be regularly removed from the construction site by suitably equipped and qualified operators and disposed of in approved facilities. • Locate temporary waste and hazardous substance storage facilities a minimum of 100m from any wetland edge.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• Keep sufficient quantities of spill clean-up materials on site.
Potential reduction of catchment yield of the aquifers through dewatering	Negative	• Regularly monitor groundwater levels as per the recommendations of the geohydrological report.
Excavated materials that are stockpiled in incorrect areas can interfere with the natural drainage, cause sedimentation and water pollution	Negative	• The areas excavated must have vegetated berms to separate dirty and clean water systems and serve as an erosion control measure. • The stockpiles must be vegetated to prevent erosion and subsequent siltation of clean and dirty water streams, as well as surface water resources. • Upslope diversion and down-slope silt containment structures should be constructed. • Surface water resources must be monitored pre-mining and during construction, as per the monitoring programme.
Terrestrial ecology		
Not rehabilitating the disturbed areas to allow for the agricul Specific	Negative	• This study aims to provide sufficient transparent and technically robust information on the impacts of mining to enable informed decision-making by the authorities. During site assessment, a CBA of perennial river and ESA of seep wetlands were observed onsite. The • Identified river and wetlands have high ecological function and high conservation importance. • Since river and wetlands are highly sensitive areas or no goes areas, no mining should occur within 100m of the identified river without determining the conditions for WUL from the DWS to avoid unnecessary disturbance of water resources. In case if mining must occur in the regulated area, a permit application needs to be lodged with DWS prior to any disturbance of the river and wetlands. A permit application should be lodged in terms of Section 21 (I) and (C) of the (National water Act NO. 36 of 1998). • It was discovered that the most sensitive parts of the mining right area is the dam

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		wetlands. The identified water resources have high ecological function and high conservation importance. They provide habitat for aquatic animals, water source for livestock, and form part of the sources of freshwater in South Africa. Since wetlands and rivers are highly sensitive area or no-go areas, no mining should occur within 500 m of the identified wetlands and 100 m from the identified rivers without determining the conditions for WUL from the DWS • Proper rehabilitation and after-care of the disturbed area during mining should take place to prevent colonisation by invader species. All mitigation measures proposed in this report must be implemented during all phases of the proposed project. It is recommended that the management measures stipulated in this report be included in the proposed project's official EMPr and that these be assessed for efficacy during all phases of the project and adapted accordingly to ensure minimal disturbance of the study area ecology. The Ecology study for mining right significance of the impacts will be determined by the success of the mitigation measures implemented and the rehabilitation programme for the mined area.
Geology and soils		
• Land use change which will affect the soil and land use capability both during construction phase and post-mining operations. Loss of agricultural soils and land expected.	Negative	• In order to minimize effects, mining operations must be situated on ground with low- to medium-potential for agriculture. • Compensate landowners. • Wherever possible, restore areas damaged by mining so they may be used as agricultural land. If not, additional land uses that are regarded socially, economically, or ecologically appropriate throughout the decommissioning period must be taken into account. • Storm water management should be implemented daily throughout the site establishment / construction phase

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• Minimise the period of exposure of soil disturbances through a planning schedule • Bulk delivery of materials should be maximised to reduce the frequency of deliveries • Implementation of waste management during construction phase and throughout mining operation • Soils will be stripped according to the soil types and recommended depths.
Hydrocarbon spills can occur when using heavy machinery, as they all use oils and diesel to run. There is a chance of these breaking down and/or leaking during construction activities of roads, removal of topsoil and digging excavations for building and plant foundations. Contamination of area with hydrocarbons or hazardous waste materials.	Negative	• Prevent any spills from occurring • If a spill occurs, it is to be cleaned up immediately and reported to the appropriate authorities • All storage areas (for fuels and lubricants) will be compacted and have bunded containers to prevent soil pollution and appropriate oil separators installed • Water runoff traps should be constructed at the vehicle service sites to prevent polluted water runoff into areas that are not impacted upon • All vehicles are to be serviced regularly in a correctly bunded area • Hydrocarbon management procedure to contain details of emergency clean-up procedures and • Leaking vehicles will have drip trays place under them where the leak is occurring
Storage of topsoil	Negative	• The topsoil will be stripped, and loaded onto dump truck • Topsoil will be stripped from all areas where physical surface disturbance will occur and stored at a designated area for future topsoil backfilling • Topsoil is to be stripped when the soil is dry (as far as practical possible), as to reduce compaction; and • To be stripped according to the stripping guideline and management plan, contained within this report and further recommendations contained within the rehabilitation plan, and stockpiled accordingly.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• The handling of the stripped topsoil will be minimized to ensure the soil's structure does not deteriorate • Ensure stockpiles are placed on a free draining location so as to limit erosion loss • The movement of heavy vehicle should be limited to existing roads and be limited to areas where construction of haul road is to take place. • Compaction of the removed topsoil should be avoided by prohibiting traffic on stockpiles • Prevent unauthorised borrowing of stockpiled soil • Minimise the period of exposure of soil disturbances through a planning schedule • The stockpiles will be vegetated where the natural establishment of vegetation by the natural occurring seed bank is not sufficient (details contained in rehabilitation plan) in order to reduce the risk of erosion, prevent weed growth and to reinstitute the ecological processes within the soil and • Soils will be stripped according to the soil types and recommended depths.
Pollution		
Waste Management/Pollution Control	Negative	• Completely remove all the waste material from the site and transport it to another location for treatment and proper disposal. This so-called off-site solution is usually the most expensive option. An alternative is on-site remediation, which reduces the production of leachate and lessens the chance of groundwater contamination. On-site remediation may include temporary removal of the hazardous waste, construction of a secure landfill on the same site, and proper replacement of the waste. It may also include treatment of any contaminated soil or groundwater. Treated soil may be replaced on-site and treated groundwater returned to the aquifer by deep-well injection. • A less costly alternative is full containment of the waste. This is done by placing an

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		impermeable cover over the hazardous-waste site and by blocking the lateral flow of groundwater with subsurface cut-offs walls. It is possible to use cut off walls for this purpose when there is a natural layer of impervious soil or rock below the site. The walls are constructed around the perimeter of the site, deep enough to penetrate to the impervious layer. They can be excavated as trenches around the site without moving or disturbing the waste material. The trenches are filled with bentonite clay slurry to prevent their collapse during construction, and they are backfilled with a mixture of soil and cement that solidifies to form an impermeable barrier. Cut-off walls thus serve as vertical barriers to the flow of water, and the impervious layer serves as a barrier at the bottom. • Samples were classified as Type 4 waste, requiring landfill design of Class D. According to GNR 636: " Type 4 waste may only be disposed of at a Class D landfill designed in accordance with section 3(1) and (2) of this standard, or, subject to section 3(4) of this standard, Type 4 Waste may be disposed of at a landfill site designed in accordance with the
Social		
Recruitment strategies for the mine	Positive	N/A
Advantage to previously disadvantage individuals	Positive	N/A
Community development programmes	Positive	N/A
Upgrades and expansion of services will benefit local area	Positive	N/A

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Increased income generation for local community	Positive	N/A
Increased job opportunities for local mining communities	Positive	N/A
Economic injection to the area and Mpumalanga	Positive	N/A
Noise		
Noise emanating from heavy machinery and transport vehicles	Negative	• Noise barriers in the form of berms should be constructed as close to the noise sources as possible. • Mining-related machines and vehicles must be serviced regularly to ensure noise suppression mechanisms are effective, e.g. installing exhaust mufflers where possible. • Noisy machinery must be used predominately during daylight hours. • Grievance mechanism to record complaints should be kept on site and investigated. • Regular monitoring of noise to take place.
Noise from blasting	Negative	• Blasting operations are generally intermittent and should be limited to the day when ambient noise levels are highest.
Infrastructure (e.g. contractor's yard, weighbridge, workshop and stores)	Negative	• To reduce the visual impact of permanent structures, colours for roofing, walls, etc. should have a matt finish to reduce reflection. • Infrastructure must be located away from sensitive and elevated areas.
Location of stockpiles, pollution control dams and discard dumps	Negative	• Place as far away as possible from roads and settlements. • Topsoil stockpiles must be vegetated as soon as possible, to reduce erosion and decrease visual disturbance. • Keep stockpiles as low as possible to reduce visua impact. • Plant fast-growing indigenous trees around the dams to enhance visual.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Lighting pollution	Negative	• Avoid up-lighting of structures but rather direct the light downwards and focused on the object to be illuminated. • Use non-UV lights where possible, as light emitted at one wavelength has a low level of attraction to insects. This will reduce the likelihood of attracting insects and their predators specifically in the site camps.
Heritage and cultural		
Heritage resources disturbed/destroyed	Negative	▪ From an archaeological and heritage point of view, the proposed mining right application may be approved subject to mitigation measures implemented on the identified burial sites. ▪ The identified burial sites must be preserved *in situ* and properly mapped before any mining activity commences. ▪ The planners for the proposed mine must provide for a 100m buffer zone for the recorded burial sites. ▪ No heritage mitigation work is allowed without the consent of descendant families. ▪ The mining right application may be approved to proceed as planned under observation that project work does not extend beyond the surveyed site. ▪ Recorded buildings and structures should be preserved in situ accordance to section 34 of the NHRA. ▪ A 100m buffer zone should be provided to protect the identified building structures. ▪ Should chance archaeological materials or human burial remains be exposed during
Paleontological sites disturbed/destroyed	Negative	
Cultural places disturbed/destroyed	Negative	

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		subsurface mining work on any section of the proposed development laydown sites, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in mining scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations. ▪ Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMPr, there are no other significant cultural heritage resources barriers to the proposed mining development. The Heritage authority may approve the mining right application to proceed as planned with special commendations to implement the recommendations here in made. ▪ If during development, operational or closure phases of this project, any person employed by the applicant, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the site manager. ▪ The site Manager must then make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area before informing an archaeological practitioner.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		▪ It is the responsibility of the applicant to protect the site(s) from publicity (i.e., media) until a mutual agreement is reached. ▪ Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by MPHRA. ▪ The applicant is reminded that unavailability of archaeological materials (e.g., pottery, stone tools, remnants of stonewalling, graves, etc.) and fossils does not mean they do not occur, archaeological material might be hidden underground, and as such the client is reminded to take precautions during mining. ▪ Overall, impacts to heritage resources are not considered to be significant for the project receiving environment. It is thus concluded that the project may be cleared to proceed as planned subject to the Heritage Authority ensuring that detailed heritage monitoring procedures are included in the project EMPr for the mining phase, include chance archaeological finds mitigation procedure in the project EMPr). ▪ The findings of this report, with approval of the MPHRA, may be classified as accessible to any interested and affected parties within the limits of the laws. .
Traffic		

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Increased traffic volumes on the existing road networks	Negative	• It is expected that the majority of the workers will use public transport and the proposed development of the project can be supported from a traffic flow point of view with provision be made on site to accommodate the safe loading and off-loading of staff using public transport as well as an in-house traffic management plan. • Since the proposed development will generate less than 150 vehicles per hour during the peak hours, only a Traffic Impact Statement (TIS) is required.
Blasting and vibration		
Blasting and vibration	Negative	• Blast designs can be reviewed prior to first blast planned and done. Site conditions may change, or present certain difficulties not envisaged now. This will confirm if planned designs are applicable and expected outcomes are still within acceptable norms and standards. • The current proposed stemming lengths used provides for some control on fly rock. Consideration can be given to increase this length for better control. Specific designs where distances between blast and point of concern are known should be considered. Recommended stemming length should range between 20 and 30 times the blasthole diameter. In cases for better fly control this should range between 30 and 34 times the blast holes diameter. Increased stemming lengths will also contribute to more acceptable air blast levels. • Calculated minimum safe horizontal distance is 500m. The final blast designs that may be used will determine the final decision on safe distance to evacuate people and animals. This distance may be greater pending the final code of practice of the mine and responsible blaster's decision on safe distance. The blaster has a legal obligation concerning the safe distance and he needs to determine this distance.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• During blasting care must be taken to ensure all people and animals cleared to outside the unsafe area as determined by the blaster. • A further consideration of blasting times is when weather conditions could influence the effects yielded by blasting operations. It is recommended not to blast too early in the morning when it is still cool or when there is a possibility of atmospheric inversion or too late in the afternoon in winter. Do not blast in fog. Do not blast in the dark. Refrain from blasting when wind is blowing strongly in the direction of an outside receptor. Do not blast with low overcast clouds. These 'do nots' stem from the influence that weather has on air blast. The energy of air blast cannot be increased but it is distributed differently and therefore is difficult to mitigate. It is recommended that a standard blasting time is fixed. • Video of each blast will help to define if fly rock occurred and from were. Immediate mitigation measure can then be applied if necessary. The video will also be a record of blast conditions.
Safety		
Blasting	Negative	• Clearly demarcated areas and erect signs to indicate blasting zones.
Roads and vehicles	Negative	• Speed limits must be in place on site and before access roads on a provincial or national road. • Ensure drivers are trained in road safety.
Surrounding neighbours	Negative	• Personnel are not permitted on other property without permission. • Avoid conflict with surrounding landowners. • Safety specialist will be appointed, and assessments will be conducted. Recommendations will be implemented.
Air quality		

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Dust pollution	Negative	• The removal of vegetation will be minimised during stripping to reduce the effects of dust pollution as a result of exposed soil. • Water or dust control agents must be used in working areas, and roads will be sprayed for dust suppression on a regular basis in designated susceptible areas during heavy usage. • Dust monitoring must be undertaken in accordance to the monitoring programme. It is recommended that topsoil stockpiles be vegetated to sustain biological components and prevent dust emissions. • Reduction of dust fallout levels and particulate matter. • All coal haul trucks must be covered by a tarpaulin. • The overland conveyor bult should be covered and coal on the conveyor should be sprayed to reduce emissions.
Geotechnical Investigation		
Mine Infrastructures Development	Negative	The purpose of this report is to provide a general overview of the prevailing geotechnical conditions on the site, to guide decision-making with regards to the proposed Mine infrastructures establishment including foundation and structural designs. The classifications were based on desk study information and fieldwork. • A wide range of geotechnical conditions were evaluated to characterise the site into prevailing geotechnical zones. • Site investigations and laboratory test results indicated that the site is underlain mainly by colluvial, alluvial and residual soils characterised by a low active condition. • A poorly developed to well-developed pedogenic horizon is characteristic of the area. • Shallow groundwater seepage was not encountered in all the excavated test pits.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• Signs seepage and shallow pedigenic soils were encountered across the site. Good site drainage and damp proofing in foundations must be implemented across the site. • Outcrops and sub-outcrops were not encountered in the area however shallow hardpan ferricete do occur extensively across the site; therefore excavatability problems are anticipated. • The geotechnical zonation show that the site is developable albeit with precautions and/or remedial measures. • Backfill/dumping areas were not encountered on site. Local areas of such material may be present between the points of investigation. • Imported engineered soil will be required for road building and construction of pavements. • The investigated site is characterised by a minor slope however flat areas do occur across the site. Shallow well developed pedogenic soils were encountered across the site which may lead to poor stormwater drainage. The site must be shaped to improve stormwater runoff and extensive stormwater management must be considered. • The recommended foundation designs for the prevailing conditions across the major part of the site include lightly reinforced strip footings.

CONCLUSION

Tornowize (Pty) Ltd has an intention to develop the proposed area and from the geological point of view the area is exploitable. This is because:

• The mining right area is situated in a vicinity that a small portion of it have been mined.

• Based on the geological information available, Singo Consulting (Pty) Ltd believes that the farm

Leeuwfontein 48 IS is in a highly prospective area for economic qualities and quantities of coal.

• The historic borehole data supplied from CGS confirms the occurrence of typical coal seams of the Witbank/Highveld Coalfield namely the Seam 5, Seam 4 Upper, Seam 4 Lower, Seam 3, Seam 2 upper, Seam 2 lower, and Seam 1. The area of interest has already by explored by Ingwe Coal Corporation Ltd and Anglo-American Corporation of S.A. Ltd, borehole information on the area of interest confirms the availability coal resource.

• Exploration drilling was conducted by SC Drilling, where a total of 16 boreholes were drilled within the project area. 8 of the drilled boreholes intercepted coal, and coal zone was delineated.

• BH08 and BH09 intercepted seam 2 with over 6 m of thickness.

• The eastern region of the mining right area is chacterised by dolerites activities that tend to burn the coal resource (BH01, BH02, BH04, BH05, and BH07)

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mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR A MINING RIGHT APPLICATION ON THE FARM LEEUWFONTEIN 48 IS PORTIONS 7 AND 20 (EXCLUDING PORTION 26), SITUATED IN THE UNDER STEVE TSHWETE MAGISTERIAL DISTRICT MPUMALANGA PROVINCE.

Submitted for environmental authorisation in terms of the National Environmental Management Act (Act 107 of 1998), the National Environmental Management Waste Act (Act 59 of 2008) and the integrated Water Use License in terms of the National Water Act (Act 36 of 1998) in respect of listed activities that have been triggered by an application.

Name of applicant	TORNOWIZE (PTY) LTD
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File reference number (DMR)	MP 30/5/1/2/2/10383 MR

AUGUST 2023

1. Important notice

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

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

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

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or 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 environmental impact process

a) Determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context
b) Describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location

c) Identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment

d) Determine the

   i. Nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives

   ii. Degree to which these impacts:

      aa. can be reversed

      bb. may cause irreplaceable loss of resources

      cc. can be avoided, managed or mitigated

e) Identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment

f) Identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity

g) Identify suitable measures to manage, avoid or mitigate identified impacts

h) Identify residual risks that need to be managed and monitored

LIST OF ABBREVIATIONS

STLM	Steve Tshwete Local Municipality
AMD	Acid Mine Drainage
ASAPA	Association of Southern African Professional Archaeologists
BID	Background Information Document
DEA	Department of Environmental Affairs
DEM	Digital Elevation Model
DMRE	Department of Mineral Resources and Energy
DoL	Department of Labour
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIAr	Environmental Impact Assessment report
EIS	Ecological Importance and Sensitivity
EMPr	Environmental Management Programme
GIS	Geographic Information System
GN	Government Notice
HDSA	Historically Disadvantaged South African
HIA	Heritage Impact Assessment
I&APs	Interested & Affected Party(ies)
IBA	Important Bird Area
IDP	Integrated Development Plan
IEA	Integrated Environmental Authorisation
IWULA	Integrated Water Use Licence Application
IWWMP	Integrated Water and Waste Management Plan
LED	Local Economic Development
LoM	Life of Mine
MDARD	Mpumalanga Department of Agriculture and Rural Development
MHSA	Mine Health and Safety Act (Act 29 of 1996) as amended
MPRDA	Minerals and Petroleum Resources Development Act, 2002
MTPA	Million tons per annum
MRA	Mining Right Area
MWP	Mining Works Programme
NEM:WA	National Environmental Management: Waste Amendment Act, 2008
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)

NEMBA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NFEPA	National Freshwater Ecological Priority Areas
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PCD	Pollution Control Dam
PES	Present Ecological State
PoS	Plan of Study
PPP	Public Participation Process
RoM	Run of Mine
S&EIA	Scoping and Environmental Impact Assessment
S&LP	Social and Labour Plan
SACNASP	South African Council for Natural Scientific Professions
SAHRA	South African Heritage Resources Agency
SAMRAD	South African Mineral Resources Administration System
SANBI	South African National Biodiversity Institute
SANS	South African National Standard
SCC	Species of Conservation Concern
SDF	Spatial Development Framework
SEMA	Specific Environmental Management Acts
SMME	Small, Medium and Micro-Sized Enterprises
SOP	Standard Operating Procedure
SPLUMA	Spatial Planning and Land Use Management Act (Act No.16 of 2013)
SR	Scoping Report
StatsSA	Statistics South Africa
WMA	Water Management Area
WML	Waste Management License in terms of NEM:WA

PART A – SCOPE OF ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT

1 INTRODUCTION AND BACKGROUND

Tornowize (Pty) Ltd (2014/067373/07) (the applicant) has appointed Singo Consulting (Pty) Ltd (consultant) to apply for Water Use License (WUL) ref: WU28322 as well as the Waste Management License (WML) and to undertake an Environmental Impact Assessment (EIA) and Environmental Authorisation processes for the purpose of mining coal on the portion 7 & 20 (excluding portion 26) of the farm Leeuwfontein 48 IS located within the Steve Tshwete Local Municipality under the Middleburg Magisterial District.

The proposed open cast/ surface coal mining operations constitute various listed activities, as contained in the scheduled activities in Government Notice Regulation No 324, 325 and 327 (amended 7 April 2017), now amended as GNR 517 (11 June 2021). As such, a full Scoping and EIA process must be followed. Prior to any listed activity being approved by the DMRE, an environmental process must be undertaken, and a report submitted to the relevant environmental authority for consideration.

A Mining right application was lodged with the DMRE on the 05th of October 2022 with reference number: and the acceptance letter was signed on the 9th of February 2023 by the regional manager with the DMRE Ref: MP 30/5/1/2/2/10383 MR, however the letter was written an incorrect farm name and it was received 6 days later by the applicant, the EAP requested the Competent Authority to readdress the acceptance letter content and replace portion 9 of the farm Bankfontein 215 IS with Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48. The applicant has withdrawn Prospecting right application with DMRE ref: MP 30/5/1/1/2/16234 PR in favour of this Proposed Mining Right to be accepted on the same farm. Project Public participation process and review period proceeded on the 24th of February 2023. The EAP has published a newspaper, sent out a draft scoping report through e-mail and consulted the landowner face-face, conducted a community meeting with all the adjacent farms in the area of which they are in support of the project see consultation report for this project for minutes and pictures of the meeting as attached on appendix 21. A scoping report (SR) was submitted to the DMRE Mpumalanga offices on the 23rd of March 2023 and was respectfully accepted on the 16th of May 2023, see Appendix 23.

Tornowize (Pty) Ltd has submitted a mining permit application for coal extraction on a portion of Portion 19 of the Leeuwfontein 48 IS farm. The application is currently awaiting an acceptance letter. The project area can be accessed via the R35 provincial road, which stretches from Middleburg town to Bethal.

In order for the proposed mine to operate, the applicant is required to submit an application for a mining right with the DMRE. In support of the application to obtain the mining right, the applicant is required to conduct a Scoping and Environmental Impact Assessment (S&EIA) for submission to the DMRE for adjudication. This assessment must include activities triggered under the Environmental Impact Assessment Regulations of 2014 (as amended) promulgated under the National Environmental Management Act, 1998 (Act 107 of 1998) and activities triggered under the National Environmental Management: Waste Act, 2008 (NEM: WA) (Act 59 of 2008).

The proposed open-cast/ surface coal mining operations constitute various listed activities, as contained in the scheduled activities in Government Notice Regulation No 324, 325 and 327 (amended 7 April 2017), now amended as GNR 517 (11 June 2021). As such, a full Scoping and EIA process must be followed. Prior to any listed activity being approved by the DMRE, an environmental process must be undertaken, and a report submitted to the relevant environmental authority for consideration.

The purpose of the S&EIA process is to ensure that potential environmental, economic, and social impacts associated with operation and closure/rehabilitation of a project are identified, assessed, and appropriately managed. This is done in two primary phases: the scoping phase and the impact assessment phase, both of which are discussed in more detail in the following:

1.1 Scoping phase

The scoping phase is conducted as a precursor to the EIA process, during which:

- Project and baseline environmental information is collated. Baseline information for the scoping report is gathered through visual inspections during field visits to the proposed project area and surroundings, desktop studies (including GIS mapping), and review of existing reports, guidelines, and legislation.
- Landowners, adjacent landowners, local authorities, environmental authorities, and other stakeholders who may be affected by/or have an interest in the environmental impacts of the project, are identified.
- Interested and affected parties (I&APs) are informed about the proposed project.
- Environmental authorities are consulted to confirm legal and administrative requirements.
- Environmental issues and impacts are identified and described.
- Development alternatives are identified and evaluated, and non-feasible development alternatives are eliminated.
- The nature and extent of further investigations and specialist input required in the EIA phase is identified.
- The draft and final scoping reports are submitted for review by authorities, relevant organs of state and I&APs.
- Key I&AP issues and concerns are collated into an issues and response section for consideration in

the EIA phase.

A scoping report (SR) was submitted to the DMRE Mpumalanga offices on the 23rd of March 2023 and was respectfully accepted on the 16th of May 2023, see Appendix 1. Accordingly, approval to continue with the EIA phase has been granted and the 106-day period in which to submit the EIA report and EMPr has commenced.

1.2 Environmental Impact Assessment process

The EIA phase started on the 16th of May 2023. During this period, consultation with Interested and Affected Parties continued, including the 30-Day review period of the draft EIA report and EMPr.

The EIA phase of the application includes:

- Specialist investigations are undertaken in accordance with the terms of reference established in the scoping assessment (plan of study for EIA appended to the scoping report). The scope for specialist work is determined by the nature and scale of the project impacts.
- Evaluation of development alternatives and identification of a proposed option.
- Assessment of existing impacts (no-go development option), environmental impacts that may be associated with the proposed project option, and cumulative impacts using the impact assessment methodology.
- Identification of mitigation measures to address the environmental impacts and development of actions required to achieve the mitigation required.
- Consultation with I&APs.
- Incorporation of public comments received during scoping into the Environmental Impact Assessment (EIA) and Environmental Management Programme report (EMPr), and finalisation of the EIA report.
- Issuing of the final EIA report for review.
- The requirements for the S&EIA process are contained in Chapter 4, Part 3 of the NEMA Reg No 326 (amended on 7 April 2017). The EIA process can take up to 300 days to complete (87 days for the scoping phase, 106 days for the EIA phase, and 107 days for the competent authority review).

1.3 Mining Process Summary

Mining will be conducted via opencast method by employing truck and shovel rollover mining technique. Burden material will be moved back into the pit in order to fill the voids and soils remove from subsequent strips will be used to dress the levelled spoils as part of the rehabilitation programmes. Coal that is removed from the initial pit will be transported via trucks to the washing plant area.

- Mineral: Coal
- Mining Method: Opencast “Rollover Method”.
- Depth of mineral below service: 25.08 m
- Product Market: Eskom
- Life of Mine (LoM): 15 years for operational, rehabilitation and decommissioning.
- Life of Mine ROM Tonnage: 969 990.00
- Coal Transport System: Opencast – Haul truck

2 CONTACT PERSON AND CORRESPONDENCE ADDRESS

a) Details of:
   i. The EAP who prepared the report

Environmental Assessment Practitioner	Singo Consulting (Pty) Ltd
Contact person (s)	Senior: Kenneth Singo Junior 1: Mutali Guduvheni Public Participation Officer: Rofhiwa Nemutandani
Address	Office 870, 05 Balalaika St Tasbet Part Ext 2 Witbank 1040
Postal address	P/Bag X7297, Postnet Suite 87, Witbank, 1035
Contact number(s):	+27 7 3 020 7361/ +27 13 692 0041
Telephone:	013 692 0041
Email(s):	Senior: kenneth@singoconsulting.co.za Junior EAP: mutali@singoconsulting.co.za PPO: rofhiwa@singoconsulting.co.za

3 EXPERTISE OF THE EAP

3.1 The qualifications of the EAP

With evidence attached as appendices.

See Appendix 1 and Appendix 2.

3.2 Specialist Studies

To address the effects linked to mining activities, specialized studies have been conducted, and more are being completed. The data needed to identify and evaluate potential impacts of the proposed project is gathered as part of the specialist studies. Additionally, the experts suggested suitable mitigation, control, or optimization techniques to reduce any negative effects or increase potential advantages, as applicable. The EMPr, which will act as a guide for the project's building, operation, and decommissioning stages

(including rehabilitation), contains the mitigation strategies and suggestions given by the experts. The Environmental Attributes linked to the development footprint for each specialized study's related.

3.3 Summary of EAP's past experience

Due to POPIA ACT the CV of the EAP will be included in a final report.

4 DESCRIPTION OF THE PROPERTY

Farm name:	Leeuwfontein 48 IS Portions 7 And 20 (Excluding Portion 26)
Application area (ha):	Approximately 98.600ha
Magisterial district:	Steve Tshwete
Distance and direction from nearest town:	Approximately 22.45 km North-East of Kriel Approximately 6.04 km South of Komati
21-Digit Surveyor General Code	T0IS000000000004800020 T0IS000000000004800007

5 LOCALITY DESCRIPTION

Show nearest town, scale not smaller than 1:250000, attached as Appendix 3.

The proposed area is approximately 22.45 kilometers northeast of Kriel, 6.04 kilometers south of Komati, and approximately 2 kilometers from the Kleinfontein colliery, which is located along the R35 provincial road; the area can be accessed via a gravel road that extends to the R35, making the area accessible; other areas of the farm have previously been mined using opencast mining methods, and there are no observable powerlines in the vicinity. The hydrological map confirms that a perennial river runs through the project area. The proposed coal mining right area for Tornowize is approximately 98.600 ha. The area is administered by the Steve Tshwete Local Municipality, which is located in South Africa's Mpumalanga province.

See Figure 4 (locality map), Figure 5(Reg 2.2 map) and historical borehole map (Figure 6) for Tornowize (Pty) Ltd proposed mining area.

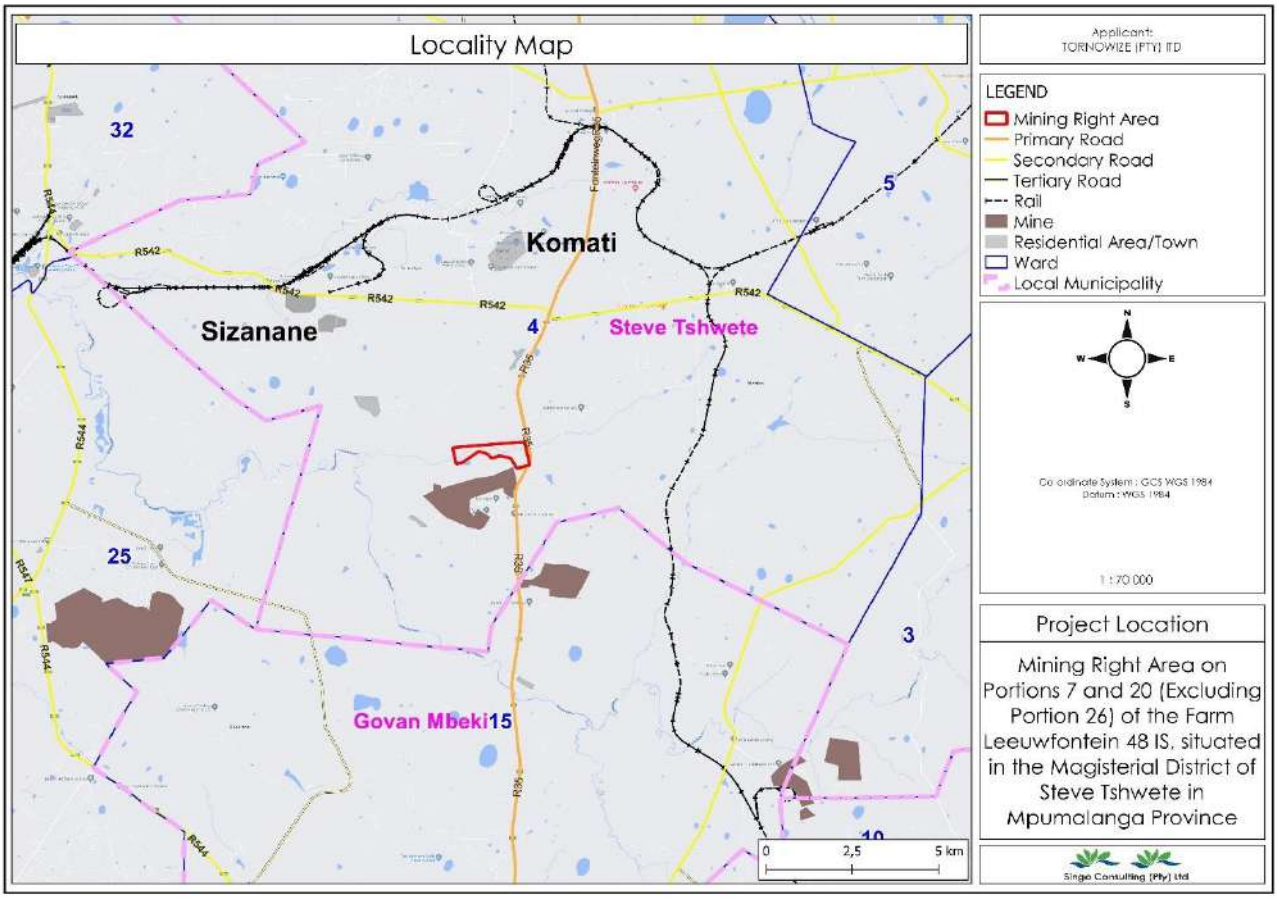


Figure 4: Locality map of the area of interest (Singo Consulting, 2022)

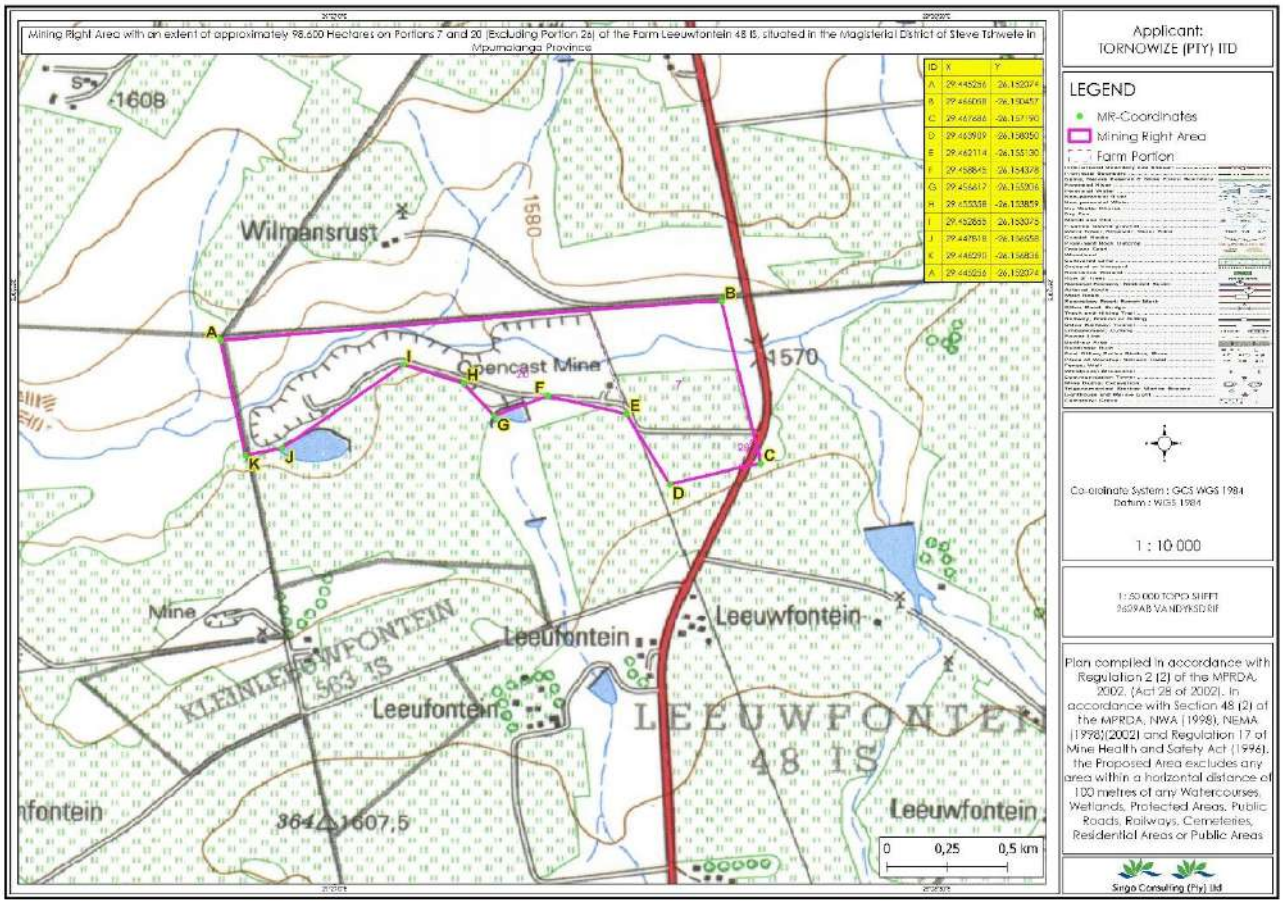


Figure 5: Reg 2.2 map of the area of interest (A: -26.152074: 29.445256) *(source: Singo consulting (pty) Ltd)*

Historic borehole data was retrieved from CGS, Ingwe Coal Corporation Ltd and Anglo-American Corporation of S.A. Ltd undertook the drilling on and outside the area of interest, scrutiny confirmed that over 120 boreholes were drilled in and adjacent the mining right area. The layout (see figure 8) below presents historic boreholes.

Drilled Boreholes by Applicant

Singo consulting drilling was appointed by Tornowise to conduct exploration drilling on the mining right area. 16 boreholes have been drilled within the project area, where 7 of the boreholes intercepted coal seams of the Witbank coalfield, borehole results are presented on figure 6. Coal zone layout present coal delineation zone within the project area (Refer to figure 7).

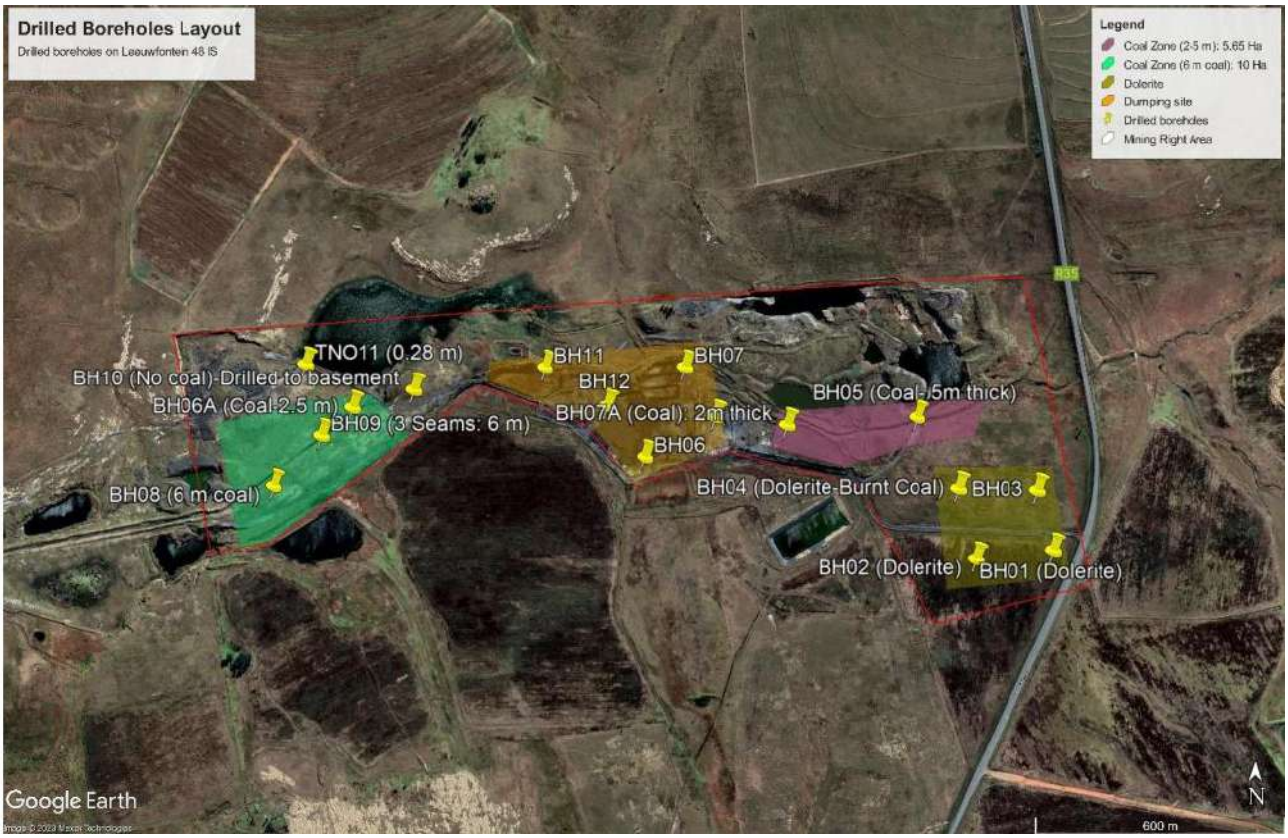


Figure 6: Drilled Boreholes Layout

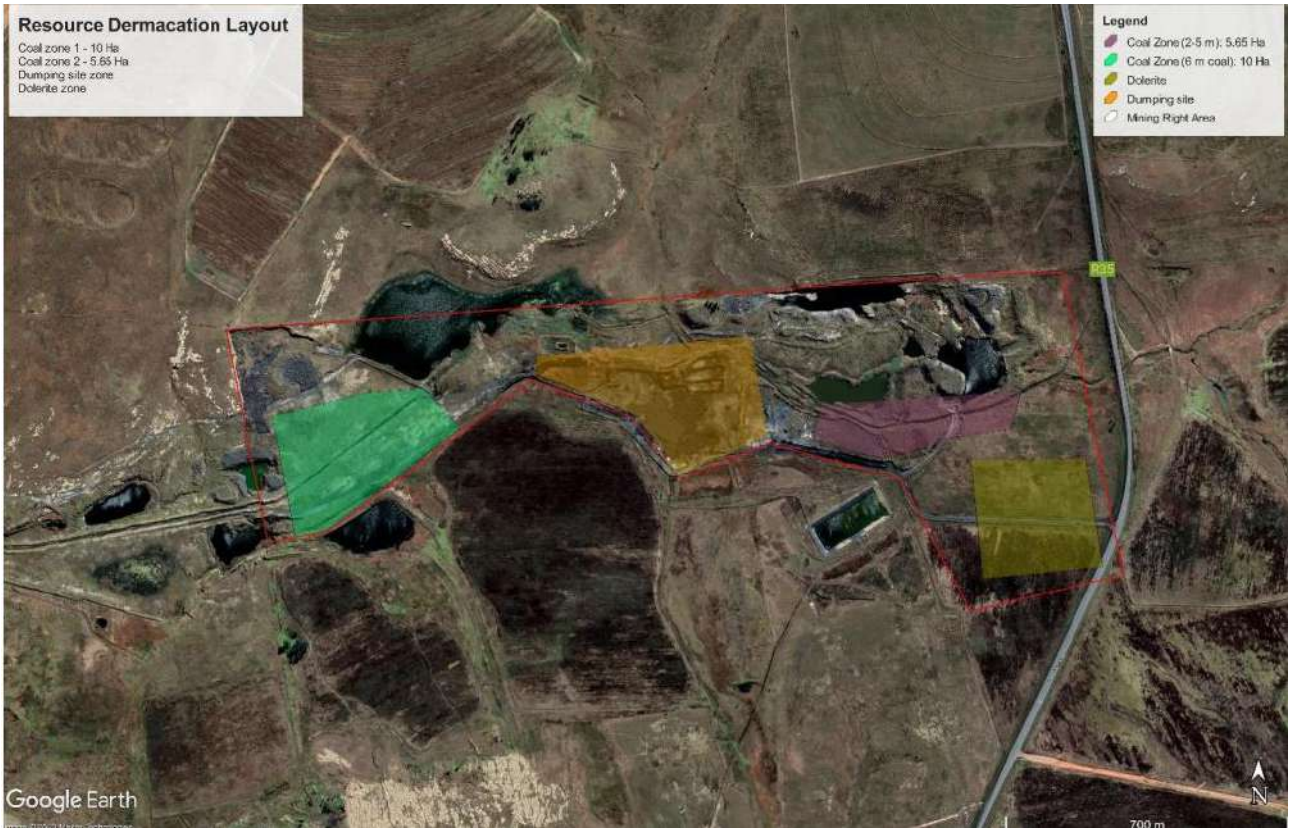


Figure 7: Coal Zone Layout

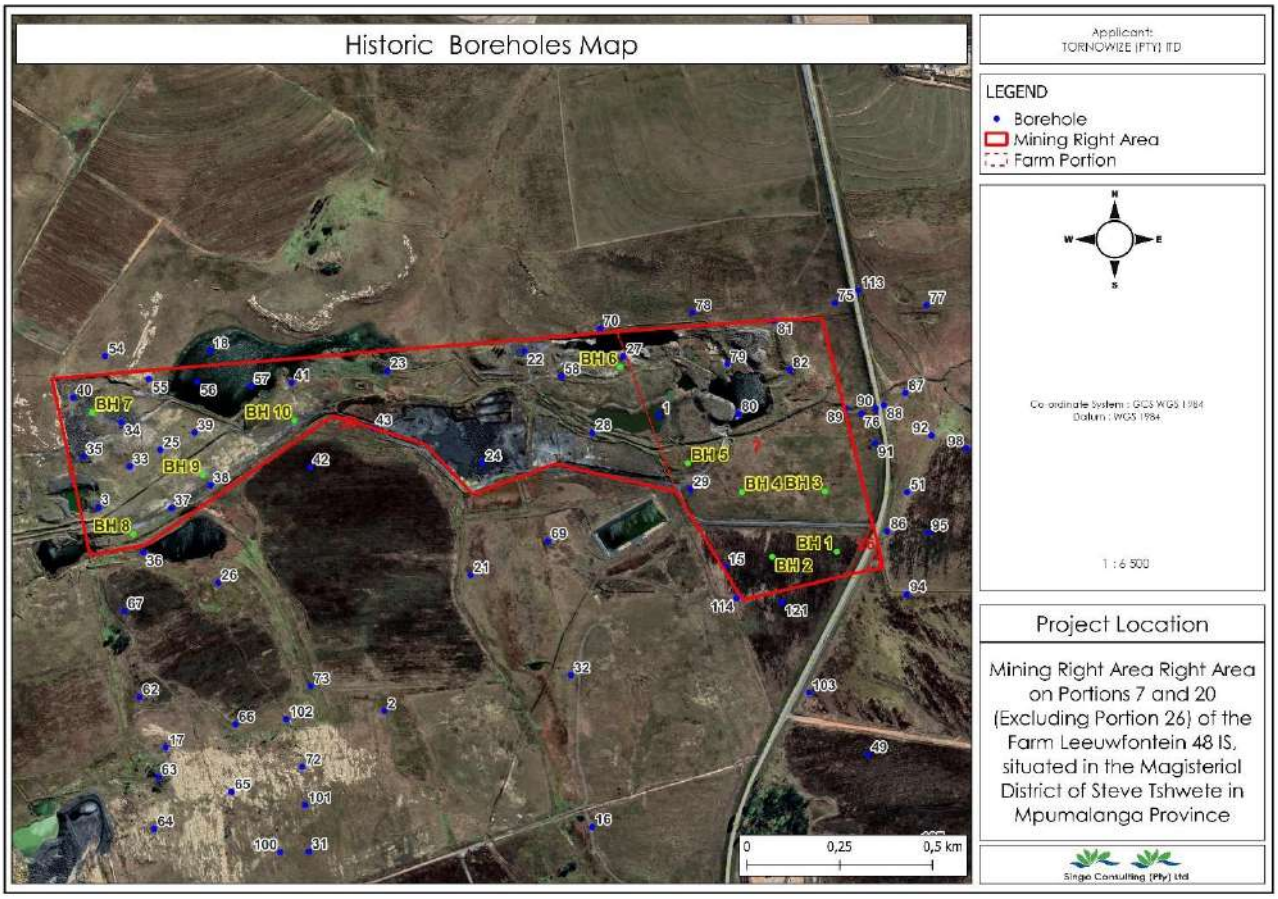


Figure 8: Historic Boreholes Map *(source: Singo consulting (pty) Ltd)*

6 DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

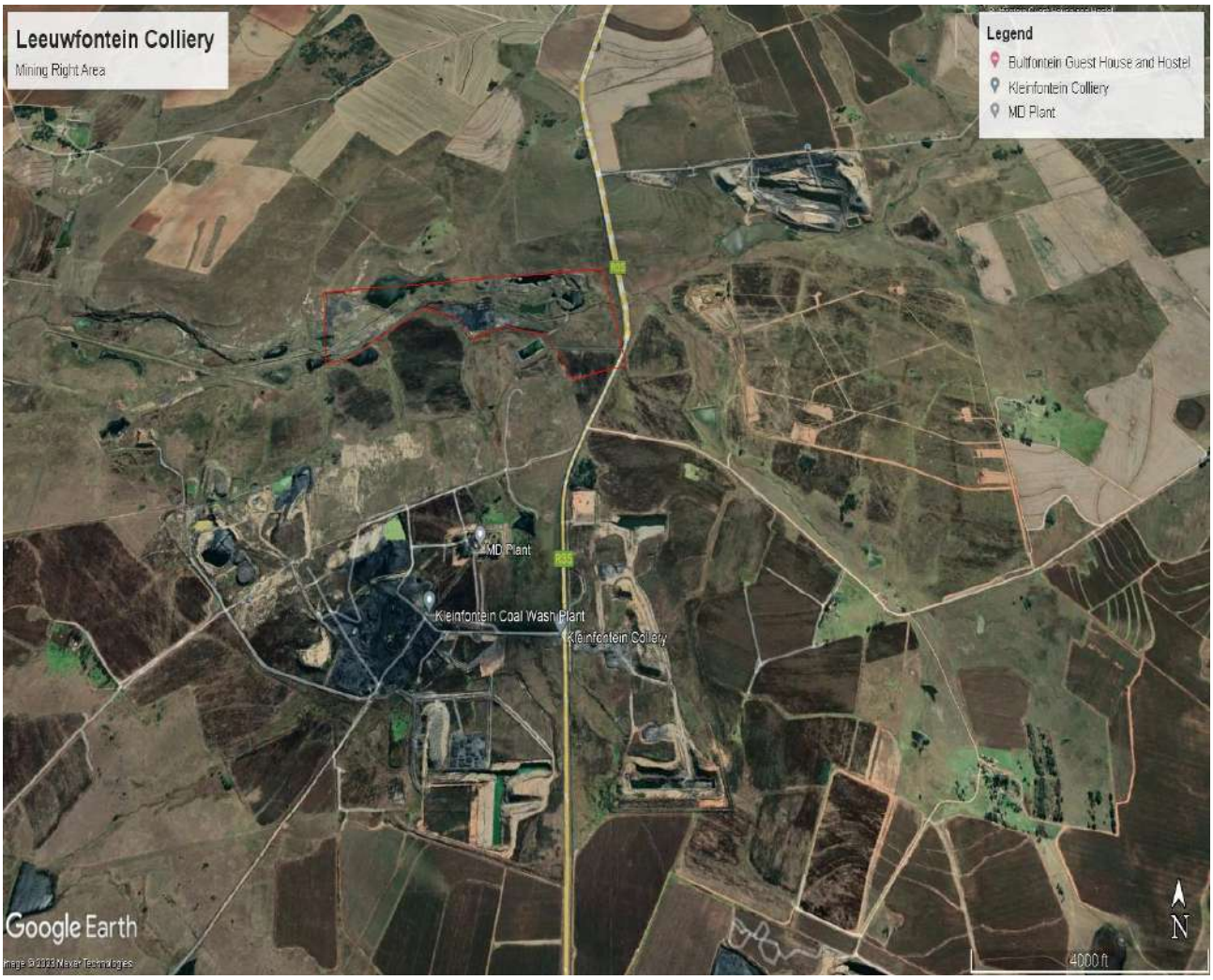
The proposed mining activity will entail opencast mining activities, some portions of the proposed mining area has been mined before, there is Kleinfontein colliery (Refer to figure 5 below) which is located not more than 3km away South of the project area. There is an existing coal processing plant within 500m of the proposed area. Geology and existing mine around the area is the primarily driver for the applicant to be interested. The proposed project area will be accessed using a gravel road which extend from the R35. There is no alternative for the proposed access road to the project area, the area can only be accessed through a tar road that extents towards the R35.

West

East

South

North


Leeuwfontein Colliery
Mining Right Area
Legend
Bultfontein Guest House and Hostel
Kleinfontein Colliery
MD Plant
MD Plant
Kleinfontein Coal Wash Plant
Kleinfontein Colliery
Google Earth
N
4000 ft

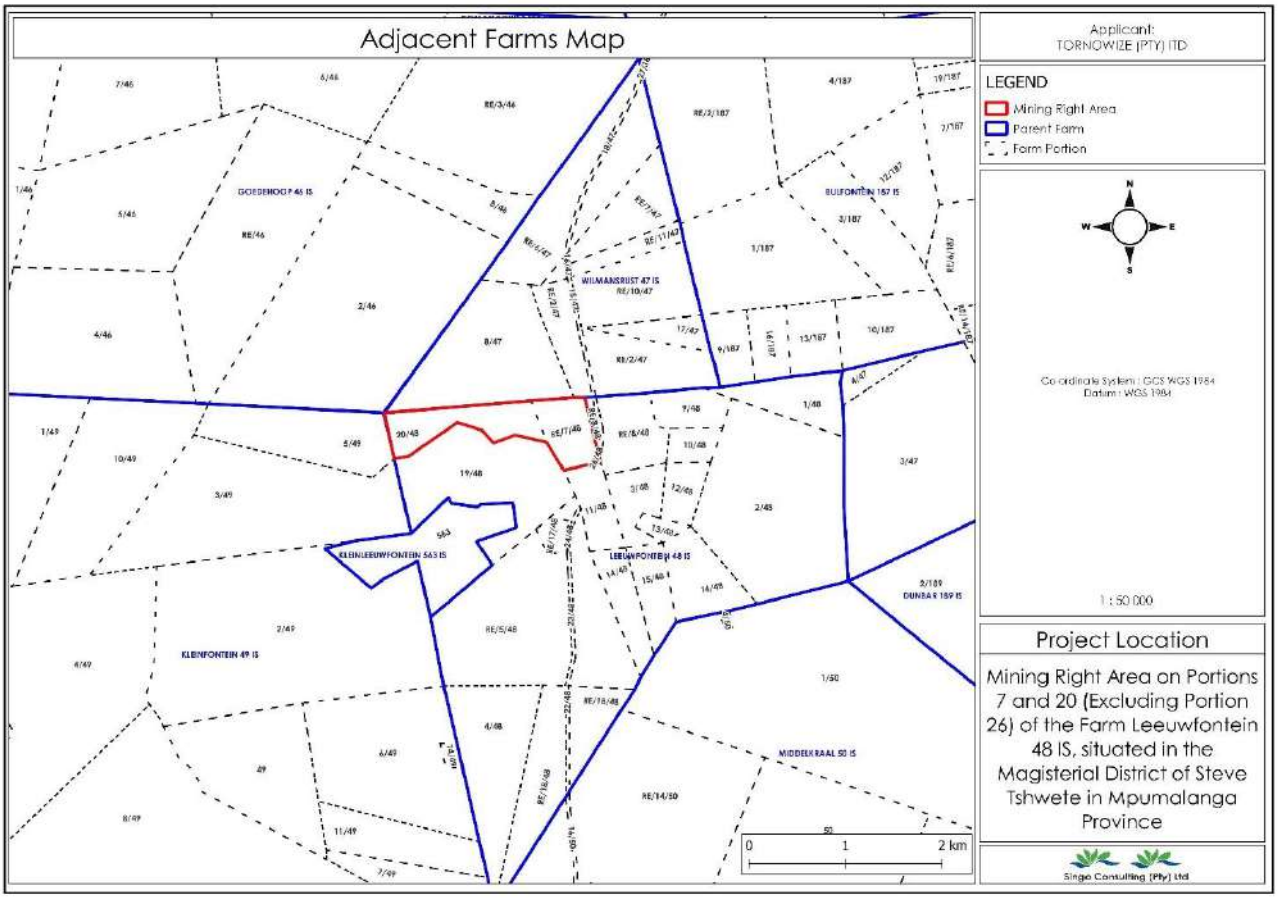


Figure 9: Access Road (site assessment, 2023), Surrounding Mines around the proposed area (Google Earth, 2023) & Adjacent farms Map (Singo Consulting, 2023)

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site and attach as Appendix 5. i).

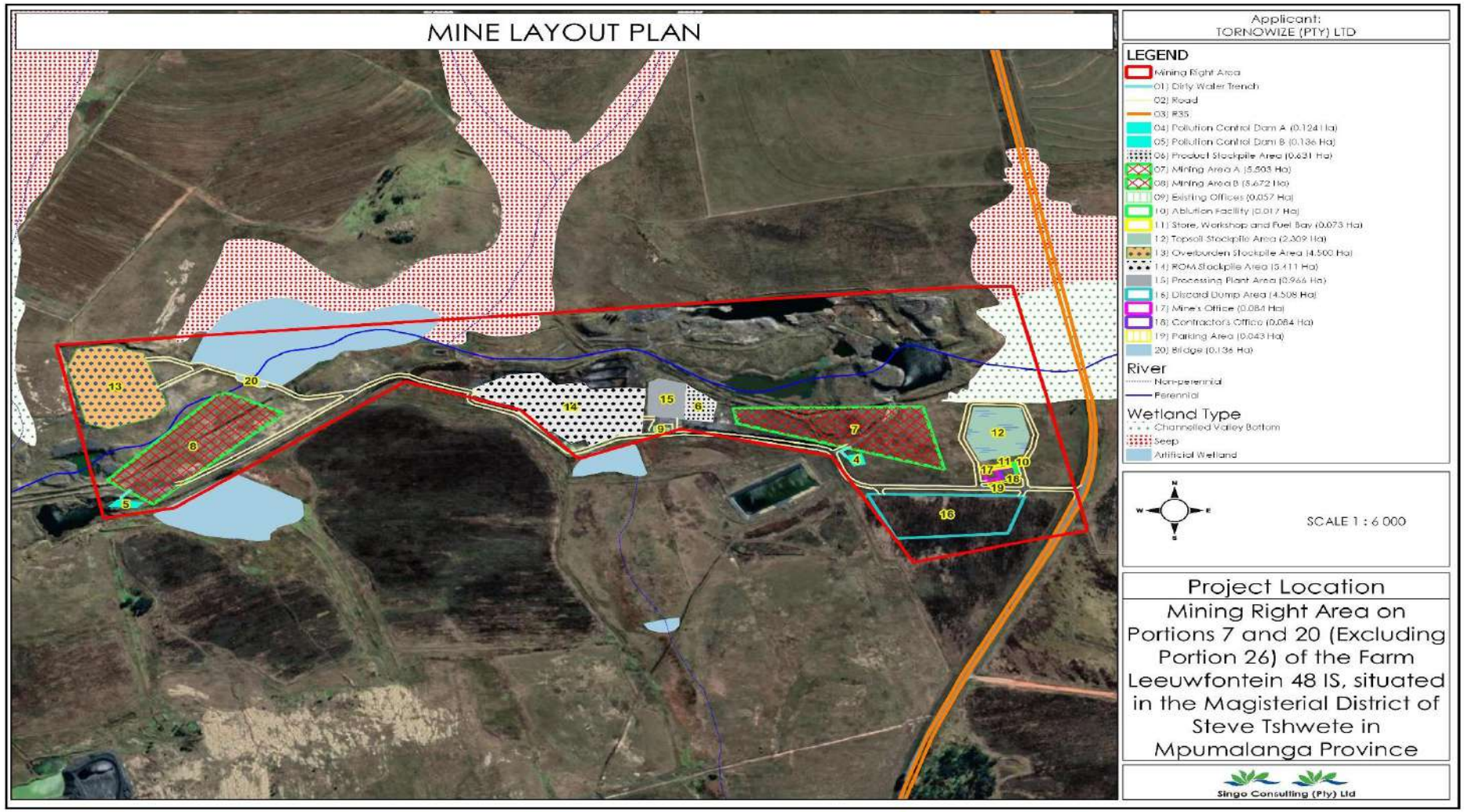


Figure 10: Surface mining layout *(source: Singo consulting (pty) Ltd)*

6.1 Landowner

The mining right is applicable for the portions 7 and 20 (excluding portion 26) of the farm Leeuwfontein 48 IS. The attached Figure 7 below shows identified landowner using Windeed Search. As observed on the Windeed results below all the applied portions 7 and 20 is owned by Puckree Farming (Pty) Ltd with the following title deeds numbers T13984/2021 and T13984/2021 respectively.

PORTION LIST

Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
0	*** NO LONGER EXISTS - SEE ENDORSEMENTS ***	-	-	-
1	UMCEBO PROP PTY LTD	T18090/2008	-	-
2	BLACK ROYALTY MINERALS KOORNFONTEIN PTY LTD	T5662/2022	-	-
3	BLACK ROYALTY MINERALS KOORNFONTEIN PTY LTD	T5662/2022	-	-
4	UMCEBO PROP PTY LTD	T18090/2008	-	-
5	UMCEBO PROP PTY LTD	T18090/2008	-	-
6	*** NO LONGER EXISTS - SEE ENDORSEMENTS ***	-	-	-
7	PUCKREE FARMING PTY LTD	T13984/2021	-	-
8	BLACK ROYALTY MINERALS KOORNFONTEIN PTY LTD	T5661/2022	-	-

PORTION LIST

Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
	KOORNFONTEIN PTY LTD			
13	BLACK ROYALTY MINERALS KOORNFONTEIN PTY LTD	T5661/2022	-	-
14	UMCEBO PROP PTY LTD	T18090/2008	-	-
15	UMCEBO PROP PTY LTD	T18091/2008	-	-
16	UMCEBO PROP PTY LTD	T18091/2008	-	-
17	KLEINFONTEIN COLLIERY PTY LTD	T8615/2012	-	-
18	UMCEBO PROP PTY LTD	T18089/2008	-	-
19	UMCEBO PROP PTY LTD	T18092/2008	-	-
20	PUCKREE FARMING PTY LTD	T13984/2021	-	-
21	*** NO LONGER EXISTS - SEE ENDORSEMENTS ***	-	-	-
22	SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD	T843/2021	-	-

Figure 11: Windeed search results

6.2 Scope of the proposed overall and specified activities

The applicant has applied for a mining right and environmental authorisation for the development of a mine and supporting infrastructure for the farm portion proposed. This application was accepted by the DMRE on the 09 February 2023 (see Appendix 24). The respective listed activities that require environmental authorisation in terms of the NEMA EIA regulations GN R.326 (amended on 7 April 2017), GN 517 (amended on 11 June 2021) and the waste management activities listed in terms of the NEM:WA GN R. 921 (2013) and GN R.633 (amended 2015) as well as the Integrated Water Use License in terms of section 21 of the National Water Act (36 of 1998) which are indicated in the following tables.

Table 2: **Listed activities according to NEMA requiring environmental authorisation**

Government notice	Activity number	Description
Listing Notice 1: GN 517 (11 June 2021)	9	The development of infrastructure exceeding 1,000 m in length for the bulk transportation of water or storm water— (i) with an internal diameter of 0,36 m or more; or (ii) with a peak throughput of 120 l per second or more; excluding where— (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.
	10	The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, wastewater, return water, industrial discharge or slimes- (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, wastewater, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.
	12	The development of—

		a) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 m^2; or b) infrastructure or structures with a physical footprint of 100 m^2 or more; where such development occurs – • within a watercourse; • in front of a development setback; or • if no development setback exists, within 32 m of a watercourse, measured from the edge of a watercourse
	13	The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50,000 m^3 or more.
	14	The development and related operation of facilities or infrastructure for the storage/storage and handling of dangerous good, where such storage occurs in containers with a combined capacity of 80 m^3 or more, but not exceeding 500 m^3.
	19	The infilling or depositing of any material of more than 10 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles, or rock of more than 10 m^3 from a watercourse. Mining activities associated with the physical mining activities, construction of wetland and stream crossing or any other related mining activities that trigger this activity.
	25	The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater, or sewage with a daily throughput capacity of more than 2,000 m^3 but less than 15,000 m^3. Pollution Control Dams.
	28	Residential, mixed, retail, commercial, industrial, or institutional developments where such land was used for agriculture, game farming, equestrian purposes, or afforestation on or after 1 April 1998 and where such development:

		a) will occur inside an urban area, where the total land to be developed is bigger than 5 ha; or b) will occur outside an urban area, where the total land to be developed is bigger than 1 ha.
	31	The decommissioning of existing facilities, structures, or infrastructure for – i. any development and related operation activity or activities listed in this Notice, Listing Notice 2 of 2014 or Listing Notice 3 of 2014 ii. Any expansion and related operation activity or activities listed in this Notice, Listing Notice 2 or Listing Notice 3 of 2014; iii. … iv. Any phased activity or activities for development and related operation activity or expansion or related operation activities listed in this Notice or Listing Notice 3 of 2014; or v. Any activity regardless the time the activity was commenced with, where such activity: a. Is similarly listed to an activity in i. or ii. above; and b. Is still in operation or development is in progress.
Listing Notice 2: GN.517 (11 June 2021)	4	The development and related operation of facilities or infrastructure, for the storage/storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 m^3. Storage of diesel and other hydrocarbons.
	15	The clearance of an area of 20 ha or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

	17	Any activity including the operation of that activity which requires a mining right in terms of section 22 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the mining right.
	19	The removal and disposal of a mineral, which requires a permission stated in terms of section 20 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the permission. Relates to coal crushing, screening, and washing on site.
	24	The extraction or removal of peat or peat soils, including the disturbance of vegetation or soils in anticipation of the extraction or removal of peat or peat soils, but excluding where such extraction or removal is for the rehabilitation of wetlands in accordance with a maintenance management plan.
Listing Notice 3: GN.517 (11 June 2021)	4	*(The development of a road wider than 4 metres with a reserve less than 13,5 metres.)* f) Mpumalanga i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding disturbed areas; (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an international convention; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Core areas in biosphere reserves; or

		(gg) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas, where such areas comprise indigenous vegetation; or ii. Inside urban areas: (aa) Areas zoned for use as public open space; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose.
	10	*(The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.)* f. Mpumalanga i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an international convention; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Core areas in biosphere reserves; (gg) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, where such areas comprise indigenous vegetation; or (hh) Areas within a watercourse or wetland, or within 100 metres of a watercourse or wetland; or

		ii. Inside urban areas: (aa) Areas zoned for use as public open space; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose.
	12	*(The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.)* f. Mpumalanga i. Within any critically endangered or endangered ecosystem listed in terms of Section 52 of the NEM:BA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; or iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning or proclamation in terms of NEMPAA.
	14	*(The development of-* *(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or* *(ii) infrastructure or structures with a physical footprint of 10 square metres or more;* *where such development occurs-* *(a) within a watercourse;* *(b) in front of a development setback; or* *(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;*

		excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.) f. Mpumalanga i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) World Heritage Sites; (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (ee) Sites or areas identified in terms of an international convention; (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Core areas in biosphere reserves; or (hh) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve, where such areas comprise indigenous vegetation; or ii. Inside urban areas: (aa) Areas zoned for use as public open space; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for a conservation purpose.

Table 3: Waste management listed activities according to NEM:WA requiring environmental authorisation

Government Notice	**Activity**	Description
R.921: Category A	**7**	Treatment of hazardous waste using any form of treatment at a facility withthe capacity to process between 10 and 100 tonnes.
	12	Construction of a facility for a waste management activity listed in Category Aof this schedule.
R.921: Category B	**1**	Storage of hazardous waste in lagoons, excluding storage of effluent,wastewater, or sewage.
	7	Disposal of any quantity of hazardous waste to land (Discard Dump).
	10	Construction of a facility for a waste management activity listed in Category Bof this schedule.
R.633: Category B	**11**	Establishment/reclamation of a residue stockpile or deposit resulting from activities that require a mining, exploration, or production right in terms ofthe MPRDA.
R.921: Category C	**2**	Storage of hazardous waste at a facility with the capacity to store more than80m^3 of hazardous waste at any time, excluding the storage of hazardous waste in lagoons or temporary storage of such waste

Table 4: **Water uses according to NWA requiring environmental authorisation.**

Section 21 water use	Description
21 (a)	Abstraction of water
21 (b)	Storage of water
21 (c)	Impeding or diverting the flow of water in a watercourse
21 (g)	Disposing of waste in a manner which may detrimentally impact a water resource.
21 (i)	Altering the bed, banks, course, or characteristics of a watercourse
21 (j)	Removing, discharging, or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people

The section provides a description of the policy and legislative context within which the project is proposed.

6.3 Policy and Legislature Applicable to the Project

6.3.1 Constitution of the Republic of South Africa

The Constitution of the Republic of South Africa, Act 108 of 1996 (as amended) Section 24 states that:

"Everyone has the right— (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that—

a) prevent pollution and ecological degradation;
b) Promote conservation; and

Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

6.3.2 Mineral and Petroleum Resources Development Act

The Mineral and Petroleum Resources Development Act, 2002 (MPRDA), outlines the procedural requirements an applicant must follow to obtain a mining right before proceeding with a mining project. Applicants are required to obtain Environmental Authorisation (EA) in terms of the National Environmental Management Act 107 of 1998, as amended (NEMA).

The MPRDA is administered by the Department of Mineral Resources (DMRE) and governs the sustainable utilisation of South Africa's mineral resources. The MPRDA aims to "make provision for equitable access to, and sustainable development of, the nation's mineral and petroleum resources".

6.3.3 National Environmental Management Act

The aim of the NEMA is to provide for co-operative governance by establishing decision-making principles on matters affecting the environment. In terms of the NEMA EIA regulations, the applicant is required to appoint an EAP to undertake the EIA, as well as conduct the public participation process (PPP). In South Africa, EIAs became a legal requirement in 1997 with the promulgation of regulations under the Environment Conservation Act (ECA). Subsequently, NEMA was passed in 1998. Section 24(2) of NEMA empowers the Minister and any MEC, with the concurrence of the Minister, to identify activities which must be considered, investigated, assessed, and reported on to the competent authority responsible for granting the relevant environmental authorisation.

On 21 April 2006, the Minister of Environmental Affairs and Tourism promulgated regulations in terms of Chapter 5 of the NEMA. These regulations, in terms of the NEMA, were amended in June 2010 and December 2014. The December 2014 NEMA regulations apply to this project. Mining activities officially became governable under the NEMA EIA in December 2014. The objective of the Regulations is to establish

the procedures that must be followed in the consideration, investigation, assessment and reporting of the identified activities. The purpose of these procedures is to provide the competent authority with adequate information to refuse authorisation of activities which may impact negatively on the environment to an unacceptable degree. These procedures also aim to ensure that authorised activities are undertaken in a manner that responsibly manages environmental impacts.

In accordance with the provisions of Section 24 (5) and Section 44 of the NEMA, the Minister has published regulations (GN R. 982) pertaining to the required process for conducting EIAs in order to be considered for the issuing of EA. These regulations provide a detailed description of the EIA process to be followed when applying for EA for any listed activity.

The regulations differentiate between a simple Basic Assessment Process (required for activities listed in GN R. 983 and 985) and a more complete EIA process (activities listed in GN R. 984). In the case of this project, activities under GN R. 984 are triggered, requiring a full EIA process. On 7 April 2017, the NEMA 2014 regulations were amended, making activities triggered under GN R. 324, 325 and 327, now amended as GNR 517 OF 11 June 2021 applicable to this application.

A scoping and EIA process is reserved for activities with potentially significant impacts that are complex to assess. Scoping and EIA provides a mechanism for the comprehensive assessment of activities that are likely to have significant environmental impacts.

6.3.4 National Water Act

The National Water Act, 1998 (NWA) also has a role to play in regulating mining. Mining almost always uses water and/or has an impact on water resources, like streams, wetlands, or rivers. The NWA is administered by the Department of Water and Sanitation (DWS).

The NWA Section 21 defines eleven water uses that require EA:

21 (a): taking water from a water resource

21 (b): storing water

21 (c): impeding or diverting the flow of water in a watercourse

21 (d): engaging in a stream flow reduction activity contemplated in section 36

21 (e): engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1)

21 (f): discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit

21 (g): disposing of waste in a manner which may detrimentally impact on a water resource

21 (h): disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process

21 (i): altering the bed, banks, course, or characteristics of a watercourse

21 (j): removing, discharging, or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people

21 (k): using water for recreational purposes. The proposed mine is in the process of applying for an Integrated Water Use Licence (IWUL) as per the water uses indicated.

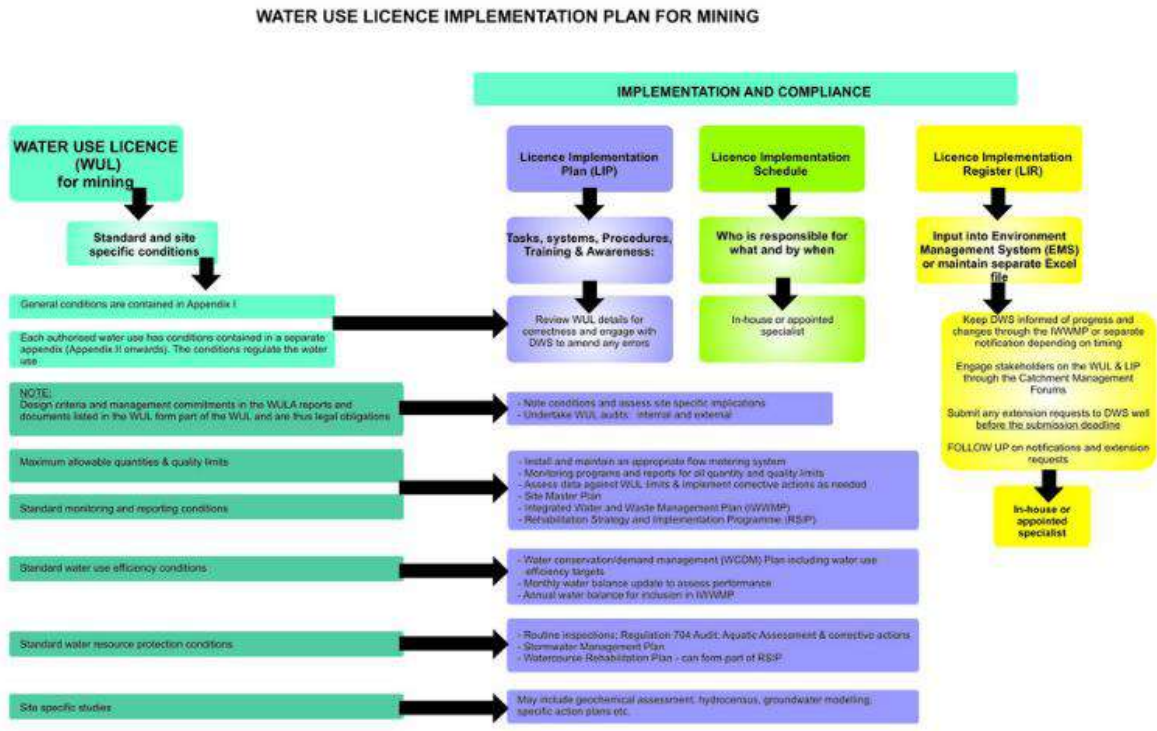


Image 1: Wula process and guidelines (https://www.dws.gov.za/WULA/default.aspx)

6.3.5 National Environmental Management: Waste Act

The National Environmental Management: Waste Act, 2008 (NEM:WA) (Act 59 of 2008) lists mining activities that must be undertaken to manage waste generated by the project and prevent environmental pollution and littering. On 2 June 2014, the NEM:W (amended) came into force. As per the amended Act, waste is longer governed by the MPRDA, but is subject to all the provisions of the NEM:WA). As per Section 16 of the NEM:WA, "a holder of waste must, within the holder's power, take all reasonable measures to:

- Avoid the generation of waste and where such generation cannot be avoided, to minimise the toxicity and amounts of waste that are generated;

- Reduce, re-use, recycle and recover waste;

- Where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner;

- Manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour, or visual impacts;

- Prevent any employee or any person under his or her supervision from contravening the Act; and

- Prevent the waste from being used for unauthorised purposes."

These general principles of responsible waste management will be incorporated into this project's EMPr requirements . The NEM:WA provides for specific waste management measures to be implemented and provides for the licensing and control of waste management activities. Waste management activities apply to Category A, B and C according to GN R 921 (Nov 2013) and the proposed residue stockpiles in terms of Category B, Activity 11 of GNR 921, and, therefore, form part of the application process (NEM: WA – Planning and Management of Residue Stockpiles and Residue Deposits Regulations, 2015 (GN R 632)

This regulates the planning and management of residue stockpiles and deposits from a prospecting, mining, exploration or production operation.

6.3.6 NEM: WA – National Norms and Standards for the Assessment of Waste for Landfill Disposal, 2013 (GN R 635)

These norms and standards prescribe the requirements for the assessment of waste prior to disposal to landfill. The aim of the waste assessment tests is to characterise the material to be deposited or stored in terms of the above-mentioned waste assessment guidelines set by the DEA.

6.3.7 NEM: WA – Waste Classification and Management Regulations, 2013 (GN R 634)

Chapter 9 of the NEM: WA stipulates the requirements for a motivation for and consideration of listed Waste Management Activities that do not require a Waste Management License. The motivation must:

- Demonstrate that the waste management activity can be implemented without unacceptable impacts on, or risk to, the environment or health

- Must provide a description of the waste

- Description of waste minimisation or waste management plans

- Description of potential impacts, etc.

- The transitional provisions under Chapter 6 of this Regulation prescribes timeframes in which all waste must be classified within 18 months from the date of commencement of these regulations (23 August 2013)

Waste streams generated from mine activities will, where applicable, be classified to determine their nature (i.e. general or hazardous), managed and disposed of in accordance with the relevant legislation.

6.4 National Environmental Management: Air Quality Act

The National Environmental Management: Air Quality Act (NEM: AQA) (Act No. 39 of 2004 as amended) is the main legislative tool for the management of air pollution and related activities.

The objectives of the Act are to protect the environment by providing reasonable measures for:

- The protection and enhancement of the quality of air in the republic
- The prevention of air pollution and ecological degradation
- Securing ecologically sustainable development while promoting justifiable economic and social development
- Generally, to give effect to Section 24(b) of the constitution in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and wellbeing of people

The NEM:AQA mandates the Minister of Environmental Affairs to publish a list of activities that result in atmospheric emissions and consequently cause detrimental effects on the environment, human health and social welfare. The Listed Activities and Minimum National Emission Standards were published on 22 November 2013 (Government Gazette No. 37054).

According to NEM:AQA, air quality management control and enforcement is the responsibility of local government, with district and metropolitan municipalities being the licensing authorities. Provincial government is primarily responsible for ambient monitoring and ensuring municipalities fulfil their legal obligations, with national government primarily as policy maker and coordinator. Each sphere of government must appoint an Air Quality Officer responsible for coordinating matters pertaining to air quality management. Under the old Act, air quality management was the sole responsibility of national government, with local authorities only being responsible for smoke and vehicle emission control. The National Pollution Prevention Plan Regulations, which came into effect on 21 July 2017, tie in with The National Greenhouse Gas Emission Reporting Regulations, which took effect on 3 April 2017.

These regulations aim to prescribe the requirements that greenhouse gas (GHG) pollution prevention plans need to comply with (in terms of priority air pollutants), as per NEM:AQA. The regulations specify who needs to comply, and by when, and prescribes the content requirements. Mines do have an obligation to report on the GHG emissions under these regulations.

6.5 The National Heritage Resources Act

The National Heritage Resources Act (NHRA) (Act 25 of 1999) stipulates that cultural heritage resources may not be disturbed without authorisation from the relevant heritage authority. Section 34(1) of the NHRA

states that, "no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority…".

The NHRA informs the identification, evaluation, and management of heritage resources and, in the case of Cultural Resource Management (CRM), affected by development (as stipulated in Section 38 of NHRA) and those developments administered through the NEMA, MPRDA and NEMWA legislation. In the latter cases, the feedback from the relevant heritage resources authority is required by the state and provincial departments managing these Acts before any authorizations are granted for development. The last few years have seen a significant change towards the inclusion of heritage assessments as a major component of EIAs required by NEMA and MPRDA. This change requires an evaluation of the section of these Acts relevant to heritage. The NEMA 23(2)(b) states that an integrated environmental management plan should, "…identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage".

Subsections (23)(2)(d), (29)(1)(d), (32)(2)(d) and (34)(b) require the (compulsory) inclusion of the identified cultural resources, the evaluation of the impacts of the proposed activity on these resources, the identification of alternatives and the management procedures for such cultural resources for each of the documents noted in the environmental regulations. Regulations under NEMA's regulations on the Specialist Report requirements must be considered when compiling such a report.

The MPRDA and NEMA have similar definitions of "environment". Both acknowledge cultural resources as part of the environment. Section 39(3)(b) of this Act specifically refers to the evaluation, assessment and identification of impacts on all heritage resources as identified in Section 3(2) of the NHRA. Section 40 of the same Act requires consultation with any state department administering any law relevant to such an application through Section 39 of the MPRDA. This implies the evaluation of Heritage Assessment Reports in Environmental Management Plans or Programmes by the relevant heritage authorities (Fourie, 2008b).

In accordance with the legislative requirements and EIA rating criteria, the regulations of the South African Heritage Resources Agency (SAHRA) and Association of Southern African Professional Archaeologists (ASAPA) have been incorporated to ensure that a comprehensive and legally compatible Heritage Impact Assessment (HIA) is compiled.

6.6 National Environmental Management: Biodiversity Act

The overarching aim of the National Environmental Management: Biodiversity Act (No 10 of 2004) (NEM:BA), within the framework of NEMA, is to provide for:

- The management and conservation of biological diversity in South Africa and of the components of such diversity.

- The use of indigenous biological resources in a sustainable manner.

- The fair and equitable sharing, among stakeholders, of benefits arising from bioprospecting involving indigenous biological resources.

- The South African National Biodiversity Institute (SANBI) was established on 1 September 2004 through the signing into force of the NEM:BA, its purpose being (inter alia) to report on the status of the country's biodiversity and the conservation status of all listed threatened or protected species and ecosystems.

- Other objectives include the identification, control, and eradication of declared weeds and alien invaders in South Africa. These are categorised according to one of the following categories, and require control or removal:

o Category 1a Listed Invasive Species: Category 1a Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be combated or eradicated.

o Category 1b Listed Invasive Species: Category 1b Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be controlled.

o Category 2 Listed Invasive Species: Category 2 Listed Invasive Species are those species listed by notice in terms of section 70(1)(a) of the Act as species which require a permit to carry out a restricted activity within an area specified in the Notice or an area specified in the permit, as the case may be.

o Category 3 Listed Invasive Species: Category 3 Listed Invasive Species are species that are listed by notice in terms of section 70(1)(a) of the Act, as species which are subject to exemptions in terms of section 71(3) and prohibitions in terms of section 71A of Act, as specified in the Notice.

o The provisions of this Act have been considered and, where relevant, incorporated into the proposed mitigation measures and requirements of the EMPr. It is also appropriate to undertake a Fauna and Flora Impact Assessment for developments in an area that is considered ecologically sensitive which require environmental authorisation in terms of NEMA, with such Assessment taking place during the EIA phase.

6.7 The Conservation of Agricultural Resources Act

This Act informs the utilisation of the natural agricultural resources in South Africa to promote soil, water and vegetation conservation, as well as combat weeds and invader plants.

6.8 Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA)

The Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA) is a framework law, which means that the law provides broad principles for a set of provincial laws that will regulate planning for the country. The Act introduces provisions to cater for development principles; norms and standards; inter-governmental support; Spatial Development Frameworks (SDFs) across national, provincial, regional and municipal areas; Land Use Schemes (LUS); and municipal planning tribunals.

SPLUMA also provides clarity on how planning law interacts with other laws and policies. It is a uniform, recognisable and comprehensive system that addresses the past spatial and regulatory imbalances and

promotes optimal exploitation of minerals and mineral resources. SPLUMA achieves this by strengthening the position of mining right holders when land needs to be rezoned for mining purposes. SPLUMA's impact on optimal exploitation is particularly evident where conflict exists between mining right holders and landowners. Economic and policy considerations, as well as practical necessities, often motivate the state to grant mining rights to entities other than landowners. SPLUMA is a new national framework Act that provides clear principles and standards for provincial and local governments to formulate their own new spatial planning and land use policies. The new provincial legislation can regulate, among other things, land development, land use management, spatial planning, and municipal planning.

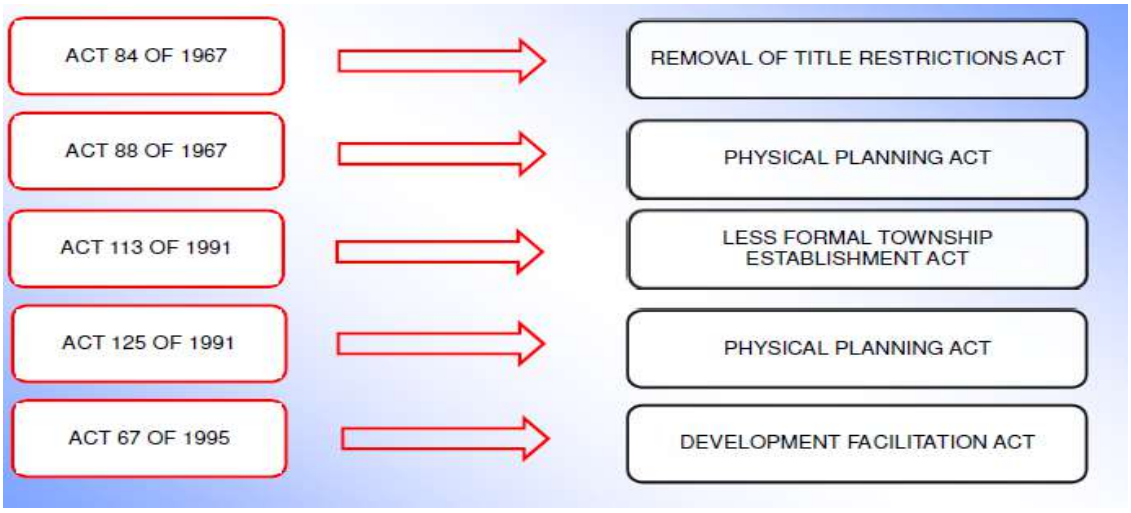


Image 2: Repealed legislation as a results of SPLUMA.

6.9 Environment Conservation Act, 1989 (Act 73 of 1989) – Noise control regulations

In terms of section 25 of the ECA, the national Noise Control Regulations (GN R154 in Government Gazette No. 13717 dated 10 January 1992) were promulgated. The NCRs were revised under GN R. 55 of 14 January 1994 to make it obligatory for all authorities to apply the regulations. The Gauteng Province promulgated provincial regulations: Noise Control Regulations of Gauteng 1999, (Provincial Gazette, Extraordinary no 75 of August 1999).

The noise control regulations must be considered in relation to the potential noise that may be generated during the construction and decommissioning phases of the proposed project. The two key aspects of the noise control regulations relate to disturbing noise and noise nuisance. Section 4 of the regulations prohibits a person from making, producing or causing a disturbing noise, or allowing it to be made produced or caused by any person, machine, device or apparatus or any combination thereof.

A disturbing noise is defined in the regulations as "a noise level which exceeds the zone sound level or if no zone sound level has been designated, a noise level which exceeds the ambient sound level at the same measuring point by 7 dBA or more". Section 5 of the noise control regulations prohibits the creation of a noise nuisance. A noise nuisance is defined as "any sound which disturbs or impairs or may disturb or impair

the convenience or peace of any person". Noise nuisance is anticipated from the proposed project particularly to those residents that are situated near the project sites. South African National Standard 10103 also applies to the measurement and consideration of environmental noise and should be considered in conjunction with these regulations. A noise specialist study is proposed for the EIA.

6.10 Noise standards

The following South African Bureau of Standards (SABS) requirements relate to noise from mines, industry, and roads:

- South African National Standard (SANS) 10103:2008. "The measurement and rating of environmental noise with respect to annoyance and to speech communication".
- SANS 10210:2004. "Calculating and predicting road traffic noise".
- SANS 10328:2008. "Methods for environmental noise impact assessments".
- SANS 10357:2004. "The calculation of sound propagation by the Concave method".
- SANS 10181:2003. "The Measurement of Noise Emitted by Road Vehicles when Stationary".
- SANS 10205:2003. "The Measurement of Noise Emitted by Motor Vehicles in Motion".

The relevant standards use the equivalent continuous rating level as a basis to determine what is acceptable. The levels may take single event noise into account, but single event noise by itself does not determine whether noise levels are acceptable for land use purposes. With regards to SANS 10103:2008, the recommendations are likely to inform decisions by authorities, but non-compliance with the standard will not necessarily render an activity unlawful. The noise assessment will take these noise standards and impacts into consideration.

6.11 Description of the activities to be undertaken

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

The proposed Tornowize (Pty) Ltd mining project will be located on the farm Leeuwfontein 48 IS on Portions 7 and 20 (Excluding Portion 26), as described in section 4 above; mining will take the form of surface mining on 98.600 ha. Tornowize (Pty) Ltd has decided to apply for a mining right. The mining operations at Tornowize colliery are planned to run continuously, operating 24 hours a day, 7 days a week. Due to the round-the-clock operation, lighting facilities will be required on-site to ensure safe and efficient working conditions. The estimated life of the mine (LoM) is projected to be approximately thirty (30) years, starting

from the time of the when application is granted. This estimate considers the anticipated coal reserves and the expected production rate over the course of the mining operation.

The activities to be undertaken at Tornowize colliery will include, but may not be limited to:

- Site Preparation: Clearing and preparing the designated areas for mining operations, including removal of vegetation and topsoil as necessary.
- Surface Mining: Extracting coal from the designated mining areas using surface mining methods, such as strip mining or open-pit mining.
- Coal Processing: Processing and sorting the extracted coal to meet the required quality standards.
- Haulage and Transportation: Transporting the processed coal from the mine site to the designated storage and loading areas.
- Rehabilitation: Implementing progressive rehabilitation measures to restore mined-out areas to a stable and environmentally sustainable condition during the mining process.
- Water Management: Implementing water management practices to minimize impacts on local water resources, including sedimentation control and water recycling.
- Air Quality Management: Implementing dust control measures and monitoring air quality to ensure compliance with environmental regulations.
- Community Engagement: Engaging with local communities and stakeholders to address their concerns, provide information, and foster positive relationships.
- Health and Safety: Ensuring strict adherence to health and safety regulations to safeguard the well-being of workers and nearby communities.
- Environmental Monitoring: Conducting regular environmental monitoring to assess and mitigate potential impacts on the environment.
- Compliance and Reporting: Ensuring compliance with all relevant environmental regulations and reporting requirements.

It is important to note that the specific activities and their implementation will be subject to the outcomes of the granting of the mining right. Tornowize (Pty) Ltd is committed to conducting the mining project responsibly and sustainably, taking into account environmental considerations and the well-being of local communities throughout the proposed thirty-year mine life.

6.11.1 Planning phase

During this phase of the proposed mining project by Tornowize (Pty) Ltd, detailed designs of the mining operation will be developed, and various plans will be updated to ensure comprehensive project planning and compliance with regulatory requirements. The key activities in this phase include:

Detailed Mining Operation Design: Tornowize (Pty) Ltd will conduct a thorough and detailed design of the proposed mining operation. This design will include specific technical aspects, such as the mining methods to be employed, the sequence of mining activities, waste management strategies, and environmental protection measures. The aim is to optimize the mining process and minimize potential environmental impacts.

Social Labour Plan (SLP) Update: The Social Labour Plan, which outlines the company's commitments to local communities and socio-economic development, will be updated in line with the project's current scope and objectives. The updated SLP will reflect the company's initiatives to provide employment opportunities, support local businesses, and contribute to community development in the project area.

Mine Work Programme Update: The Mine Work Programme will be revised to align with the proposed mining operation's detailed design and schedule. It will outline the various stages of the mining project, including exploration, development, production, and closure, along with their associated timelines and milestones.

Full Environmental Impact Assessment (EIA) and Scoping Process: A comprehensive Environmental Impact Assessment (EIA) is being conducted to assess the potential environmental impacts of the proposed mining project. The EIA involved a scoping process which was to identify key environmental issues and determine the scope of the assessment. The EIA is covering aspects such as air and water quality, biodiversity, social impacts, and potential risks to the environment and nearby communities.

Negotiation with Landowners and Municipality: Tornowize (Pty) Ltd will engage in negotiations with landowners and the municipal authorities regarding the socio-economic impact, land use, and direct effects of the mine on them. These negotiations aim to address any concerns, ensure proper compensation for land use, and establish mutually beneficial agreements with affected stakeholders.

Socio-Economic Impact Assessment: In addition to the environmental assessment, a socio-economic impact assessment has been conducted to evaluate the potential effects of the mining project on local communities, livelihoods, and overall socio-economic well-being.

Environmental and Social Management Plans: Based on the findings of the full EIA and socio-economic impact assessment, Tornowize (Pty) Ltd will be able to develop detailed Environmental and Social Management Plans (ESMPs). These plans will outline specific measures and mitigation strategies to address potential adverse impacts and ensure responsible and sustainable mining practices.

This phase is critical in ensuring that the proposed mining right project is well-planned, takes into account environmental and social considerations, and complies with all relevant regulations and standards. Through the full EIA and stakeholder engagement, Tornowize (Pty) Ltd aims to identify and address potential

challenges early on, fostering a more sustainable and mutually beneficial relationship with the local community and authorities.

6.11.2 Construction phase

Two box cuts, labelled alphabetically A to B, will be constructed to access the coal seam. Box cuts are excavations made into the ground to reach the coal reserves. Each box cut will be carefully planned and executed to ensure safe and efficient access to the coal seam level. Before mining commences, the topsoil and subsoil layers will be carefully excavated separately and stockpiled. These materials will be used later to create high walls, clean water diversion berms, and to support reclamation efforts after mining is completed. The excavated topsoil and subsoil will be utilized to construct high walls and clean water diversion berms. High walls provide stability to the mining site, preventing soil erosion and ensuring safe mining operations. Clean water diversion berms are designed to protect streams and water bodies from potential contamination during mining activities. Any excess material, including soil and overburden, will be carefully stockpiled in designated areas on-site. Topsoil and subsoil stockpiles will be managed with vegetation to support reclamation efforts, while the overburden will be placed in a dedicated overburden stockpile near the box cut adit. As part of responsible mining practices, Tornowize (Pty) Ltd will implement vegetation management plans. This includes preserving and protecting natural vegetation where possible, and reestablishing vegetation in areas disturbed by mining activities to support biodiversity and environmental conservation.

The construction activities during the mining (operational) phase will be carefully planned and executed to ensure the safety of workers, protect the environment, and support the long-term sustainability of the mining project. Environmental monitoring and compliance with regulatory requirements will be paramount throughout the construction process.

The construction phase will commence immediately upon granting of a mining right and will include the following items and expected timeframes:

- Preparation of Access Roads
- Construction of contractor’s yard.
- Workshop Construction Fencing and trenching of Mining Area
- Construction of Security (Boom Gates, Security house)
- Installation of Weighbridge
- Construction of Ablutions
- Construction of Diesel bunds and Installation of Tanks

- Construction of Mine haul roads
- Development of trenches and pollution control
- Setting up crushing, screening and washing plant
- Boxcut development.

6.11.3 Access roads

There is an existing gravel road to the mine, linking up with the regional road R35. The access road from the mine to the regional road must be upgraded. This will include excavating the road base to a depth of 0.5 m and backfilling with sandstone to create a permeable base. A 0.30 m ferricrete layer will be placed on the sandstone base to create the road surface. The road will be shaped to ensure adequate drainage.

Image 3: Existing access road

6.11.4 Contractor's yard

The topsoil and softs over the area will be excavated to a depth of 1.00 m and a sandstone base levelled and to accommodate offices, workshops, diesel storage facilities for the appointed contractor. The topsoil will be stockpiled as per the EMPr.

6.11.5 Workshop

A 10 m x 10 m workshop will be constructed within the contractor's yard. A reinforced concrete platform will be constructed as the base of the workshop.

Image 4: Typical example of 10x10 m workshop area (Singo Consulting)

6.11.6 Fencing and trenching, of the mining area

A fence (5-strand barbed wire) will be established around the perimeter of the mining area. A 2 m deep trench will be dug along the boundaries.

Image 5: Clearvu as the typical Fencing that will be used on site. (Synman, 1998)

6.11.7 Security and access control

A permanent security house and boom gates will be constructed at the mine entrance. The structures will comprise brick and mortar and will be supplied with electricity from a diesel generator.

Image 6: Typical example of a guard house
(https://tse1.mm.bing.net/th?id=OIP.NczeD8w6g2e0ONmLFn4NSgHaFj&pid=Api&P=0&h=180)

6.11.8 Ablutions

Ablution facilities utilising septic tank system will be utilised in the mine offices and security houses. The ablutions will be constructed from brick and mortar and will comply with the requirements of the EMPr.

Image 7: Typical example of Ablution facility that will be used on site. (Synman, 1998)

6.11.9 Haul roads

Permanent haul roads will be constructed from suitable material like laterite and will conform to minimum safety requirements in terms of slopes, widths, etc.

Image 8: Typical example of a haul road (
https://tse3.mm.bing.net/th?id=OIP.JK8UyhEpAb9Offex9cXsCwHaE7&pid=Api&P=0&h=180)

6.11.10 Drainage and pollution control facilities

The principle of keeping clean water out of the mining operation and retaining dirty water will apply to the proposed mine. A series of clean water trenches will be constructed along the boundary and the sub-outcrop line to divert clean water away from mining operations, returning it to the environment.

Image 9: Drainage and Pollution Control Facilities (Synman, 1998)

6.11.11 Transport of equipment to site and establishment of the contractor (crush, screen and wash plant establishment)

A crushing, screening and washing plant with filter presses will be erected at the indicated location. This will ensure the product meets the relevant criteria in terms of sizing and blending.

Image 10: Typical example of Crushing, Screening and Washing plant (https://thumbs.dreamstime.com/b/coal-mining-processing-south-africa-open-pit-coal-mining-processing-south-africa-washing-storage-118318457.jpg **)**

Weighbridge

An area adjacent to the security has been identified for the weighbridge and will require limited cut and fill prior to installation. An accredited weighbridge will be installed by contractors.

Image 11: Typical Weighbridge that will be constructed. (Synman, 1998)

6.11.12 Operational phase

The proposed coal mining will be conducted using the box-cut to decline method. Open cast mining involves the extraction of coal from a pit developed from the earth's surface. The pit at the site will be worked by cutting a bench, which will be progressed in a north-easterly direction. The proposed opencast method will be mined in conventional truck and shovel method. Sustainable development applied to mining works necessarily includes rehabilitation with the aim of either restoring the land to its original use. The primary procedure will be implemented during the mining process include: Removing and stockpiling of topsoil, trenching around the mining footprint to ensure storm water is diverted away from the open cast pit, Blasting, stripping and stockpiling of overburden, Excavation of the initial strip of the box cut, Excavation of the coal ROM and backfilling rehabilitation concurrently as mine progress forward. Blasting with explosives to loosen the hard rock (overburden), will be used when necessary. If ever there is flying rocks blasting practices require some movement of rock to facilitate the excavation process. The extent of movement is dependent on the scale and type of operation. For example, blasting activities at large coal mines are designed to cast the blasted material over a greater distance than in quarries or hard rock operations. The movement should be in the direction of the free face, and therefore the orientation of the blast is important. Material or elements travelling outside of this expected range Fly rock can be categorised as follows:

• Throw - the planned forward movement of rock fragments that form the muck pile within the blast zone;

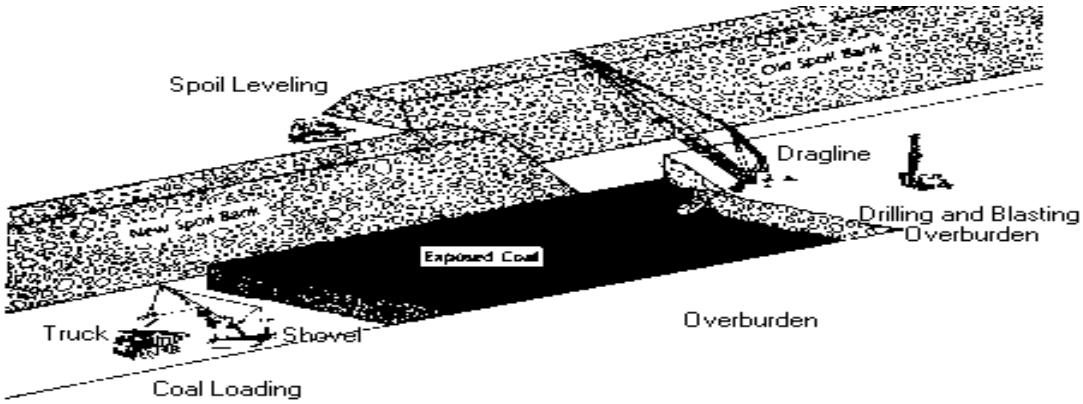
• Fly rock - the undesired propulsion of rock fragments through the air or along the ground beyond the blast zone by the force of the explosion that is contained within the blast clearance (exclusion) zone. When using this definition, fly rock, while undesirable, is only a safety hazard if a breach of the blast clearance (exclusion) zone occurs; and

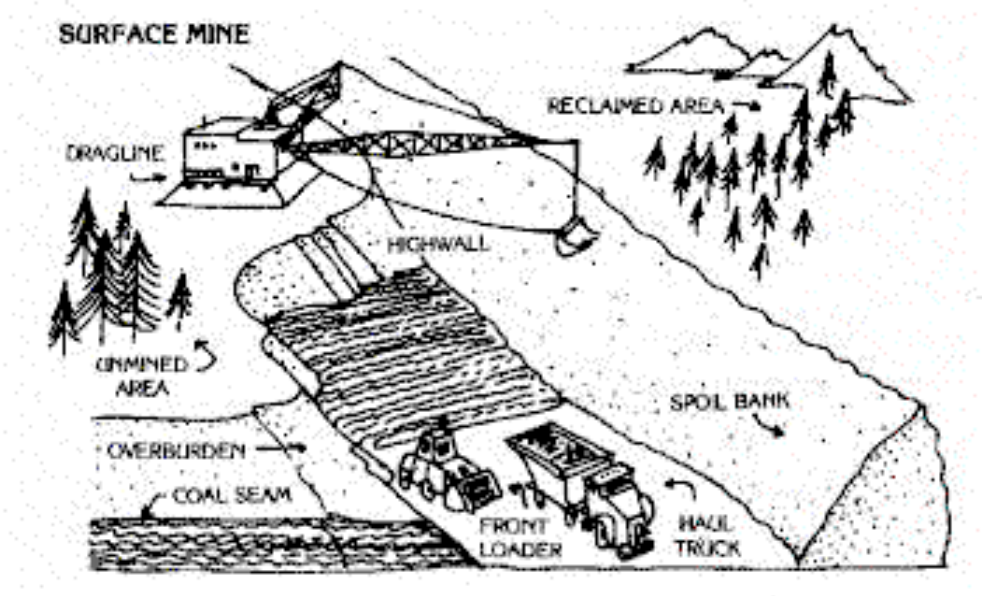
• Wild fly rock - the unexpected propulsion of rock fragments that travels beyond the blast clearance (exclusion) zone when there is some abnormality in a blast or a rock mass which shows schematic of fly rock definitions. Fly rock from blasting can result under the following conditions:

• When burdens are too small, rock elements can be propelled out of the free face area of the blast;

• When burdens are too large and movement of blast material is restricted and stemming length is not correct, rock elements can be forced upwards creating a crater forming fly rock; and

• If the stemming material is of poor quality or too little stemming material is applied, the stemming is ejected out of the blast hole, which can result in fly rock. Certain mitigation will be implemented such as; relocating people to 200m away from the activity area and a full correct PPE must be adhered to (Refer to the enclosed blasting specialist report in appendix 11. The material will be loaded with excavators and hauled to the mobile crushing and screening plants that will be established within the mining area boundaries. The coal will be stockpiled and transported to clients via trucks and trailers. All activities will be contained within the mining site boundaries. See examples in figure 8 (A, B,& C) and figure 9.





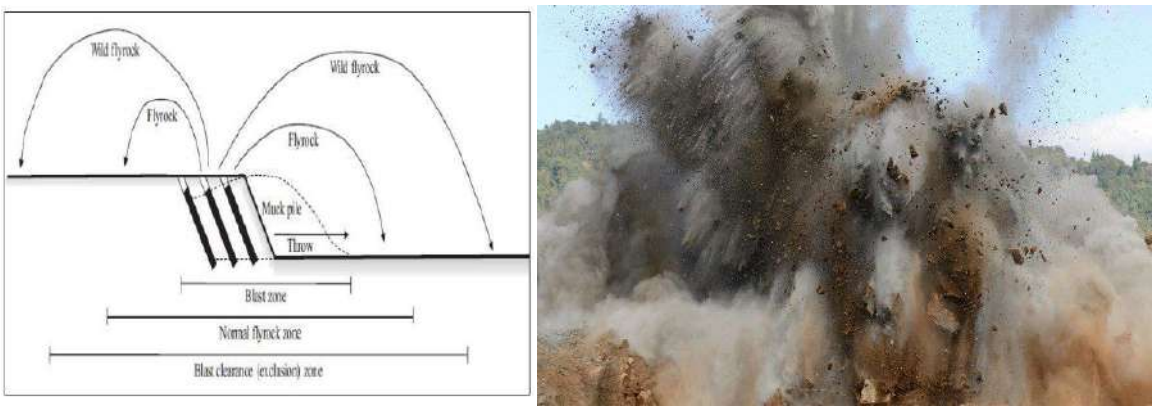


Figure 12 (A, B & C): Surface area mining and blasting examples (https://cdn.britannica.com/20/143820-050-5DEEF75A/Rock-blasting.jpg)

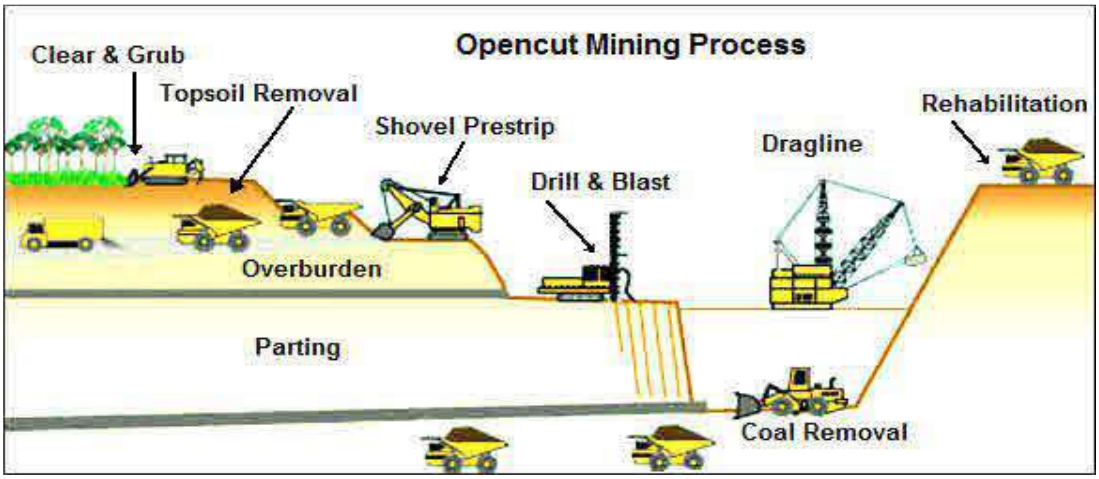


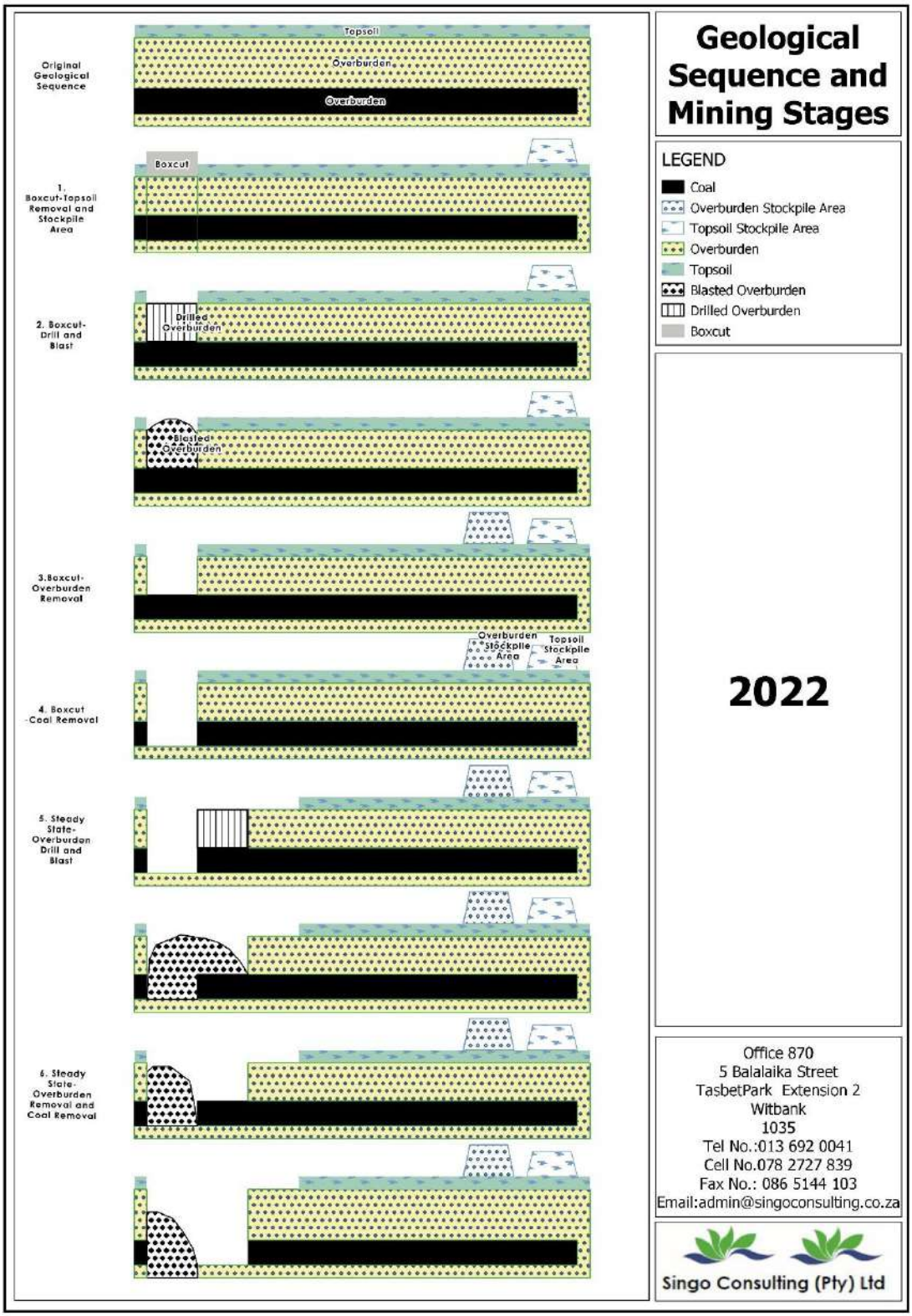
Figure 13: Opencast mining process (https://tse2.mm.bing.net/th?id=OIP.F3x-CXP_vnSdqRaHBJZkNgHaDc&pid=Api&P=0&h=180)

Coal Drill and Blast: Drilling of the coal will be done using a mobile drill rig drilling a hole of a 110mm diameter and with a planned burden and spacing of 7m x 8m. This may be adjusted once mining has commenced.

Coal Load and Haul: The coal be load and hauled and dumped on the Run of Mine Stockpile. The load and haul will be conducted using excavators and ADT's.

Crush & Screen: A ROM tip feeding the crushing and screening plant; the proposed position of the Crushing and Screening Plant is indicated on the layout Map.

Crush, Screen and Wash: A ROM tip feeding the crushing and screening plant; the proposed position of the Crushing and Screening Plant is indicated on the layout Map attached. The blasted coal will be loaded and hauled to the ROM coal stockpile, from where the coal will be initially sent to the crushing and screening plant before being hauled via road to the markets.


Original Geological Sequence
Topsoil
Overburden
Overburden
1. Boxcut-Topsoil Removal and Stockpile Area
Boxcut
2. Boxcut-Drill and Blast
Drilled Overburden
Blasted Overburden
3.Boxcut-Overburden Removal
Overburden Stockpile Area
Topsoil Stockpile Area
4. Boxcut -Coal Removal
5. Steady State-Overburden Drill and Blast
6. Steady State-Overburden Removal and Coal Removal
Geological Sequence and Mining Stages
LEGEND
Coal
Overburden Stockpile Area
Topsoil Stockpile Area
Overburden
Topsoil
Blasted Overburden
Drilled Overburden
Boxcut
2022
Office 870
5 Balalaika Street
TasbetPark Extension 2
Witbank
1035
Tel No.:013 692 0041
Cell No.078 2727 839
Fax No.: 086 5144 103
Email:admin@singoconsulting.co.za
Singo Consulting (Pty) Ltd

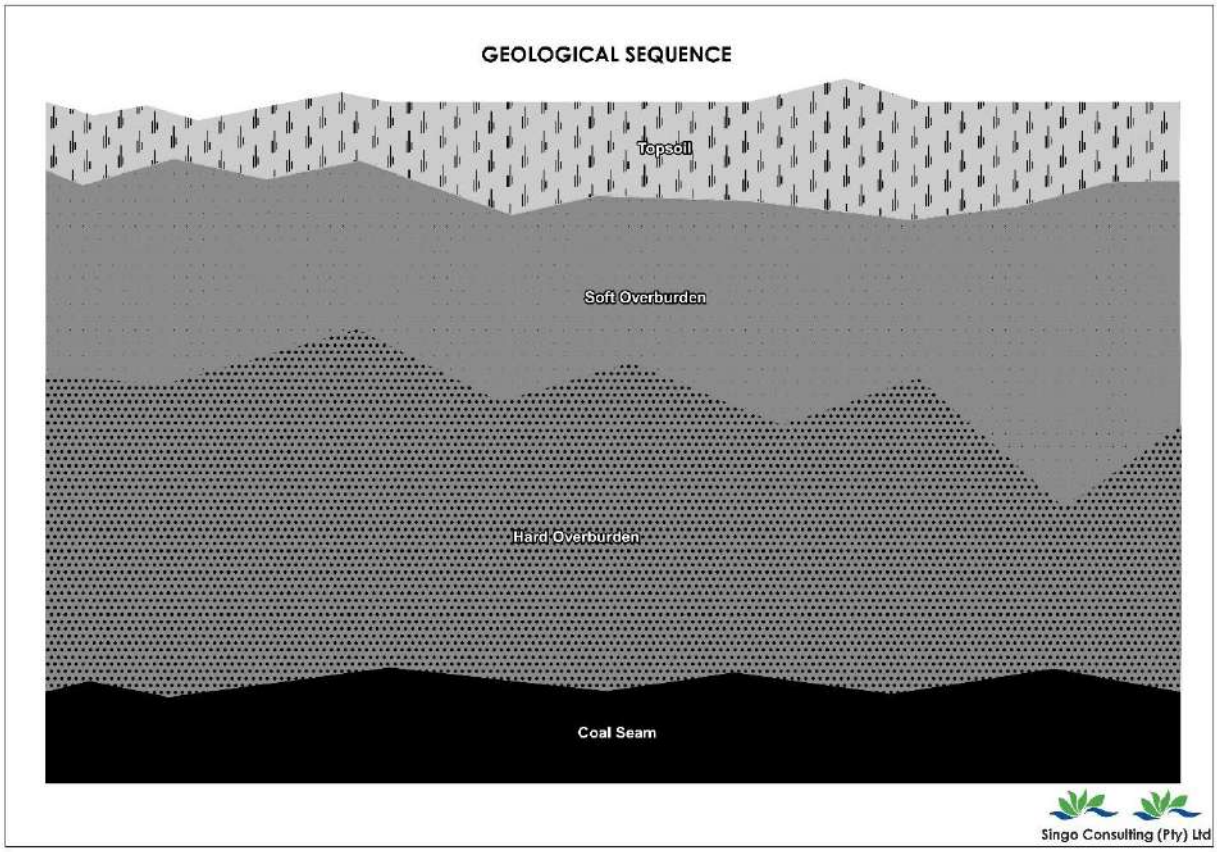


Image 12: Sequence of the mining method (Singo Consulting)

6.11.13 Equipment needed.

Mining of coal and coal hauling. The following vehicles will transport mine personnel to workings.

Production machines

2 X Excavators (74 Tonnes Each)

2 X Dozer D9 Or D10

2 x ADTs 40 tons

Support machines

2 x Grader 140H/K

1 x 18 000 to 23 000 l water bowser/cart

2 x 966 front-end loaders

2 x 5 000 to 10 000 l diesel bowser

2 x LDVs

Equipment and activities impacting cost of stores and materials.

Diesel, oils and greases, filters, v-belts, tires, etc.

Equipment and activities impacting the cost of water.

Coal processing plant (crushing and screening) will consume approx. 20 000 l of water per month and cost R15 800 per month.

6.12 Resource Estimation

The mineable in-situ (MTIS) on portions 7 and 20 (excluding portion 26) of the farm Leeuwfontein 48 IS is estimated at a high confidence level. The farm Leeuwfontein 48 IS has already been explored by Ingwe Coal Corporation Ltd and Anglo-American Corporation of S.A. Ltd, borehole information on the area of interest confirms the availability coal resource, all seams of the Witbank/Highveld coalfields were intersected during exploration drilling. From the historic borehole data, from the 7 seams, Seam 5, Seam 4 Upper, Seam 4 Lower, Seam 2 upper, Seam 2 lower, and Seam 1 fall inside the cut off limit average thickness of 0.5m according to SAMREC code in line with SASNS (10320:2004) standards (please refer to table 8). The mining right area is situated in a vicinity that a small portion of it have been mined out, also, there are countless coal mines adjacent to the mining right area (please refer to Figure 21). This increases the assurance and confidence of coal availability throughout the area of interest.

Borehole Lithology

Borehole lithology refers to the description of the rock types and layers encountered during drilling of a borehole. The lithology of a borehole is determined by examining the rock cuttings or core samples retrieved from the borehole. This information is important for understanding the geology and structure of the subsurface, as well as for identifying potential resources such as coal.

Borehole lithology is typically described in terms of the dominant rock types and their characteristics, such as color, texture, mineral composition, and structure. The thickness and depth of each layer is also recorded, along with any changes in the lithology or the presence of geological features such as faults or fractures. The geologic data of each borehole was recorded on the Log sheets. These data include information about the rock types, and lithology.

Log sheets are important for several reasons.

▪ They provide a detailed record of the geological data collected during drilling, which we need to create crosssections, and other types of geological models.

▪ Log sheets were also useful to interpret the geology the site

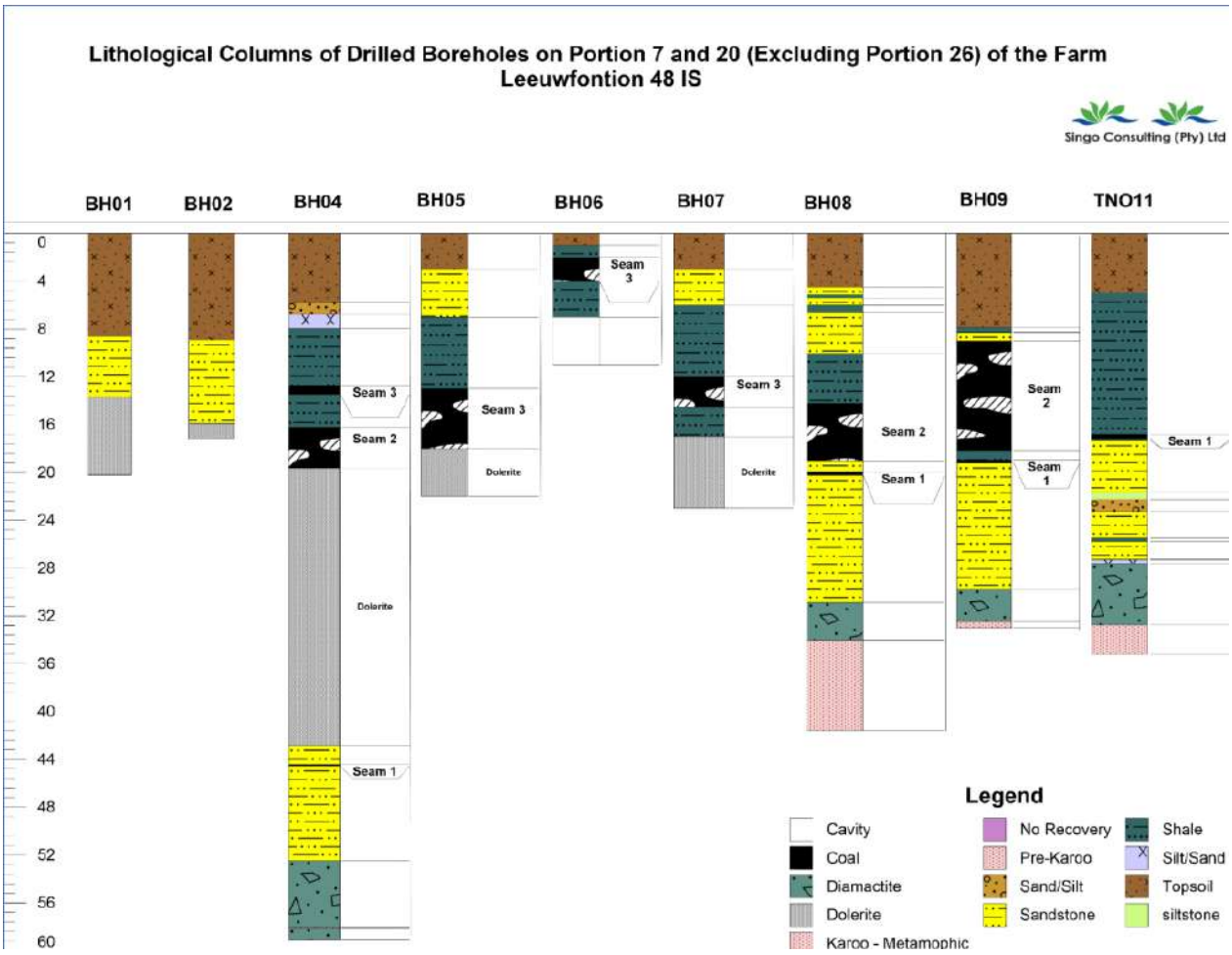


Figure 14: Borehole Correlation (Singo Consulting)

Out of 9 drilled boreholes, BH04, BH05, BH06, BH07, BH08, and BH09 were sampled. Coal samples were put in 18 samples bags weighing a total of 20 kg. The samples were submitted to the lab for coal analysis (Refer to table 6)

The GTIS of 1820 700.00 ton, after a geoloss (40%) was calculated, the MTIS was estimated to be 969 900.00 ton, and a ROM of 969 900.00 ton (Refer to table 5)

Table 5: Resource estimation

Overburden/ Seam	Thickness (m)	Depth (m)	Density	Area (Ha)	sqm	Volume (cubes)	GTIS (t)	Geo Loss (%)	ROM	Classification	Price (ZAR)	Project Value (ZAR)
Seam 3	2.58	11.00	1.4	15.00	150,000.00	387,000.00	541,800.00	40	325,080.00	Measured	R550	R 178,794,000.00
Seam 2	5.83	15.50	1.4	15.00	150,000.00	874,500.00	1,224,300.00	40	612,150.00	Measured		
Seam 1	0.26	25.08	1.4	15.00	150,000.00	39,000.00	54,600.00	40	32,760.00	Measured		
Total Coal Resource							**1,820,700.00**		**969,990.00**			-

Life of Mine = Total Mineable Resource / Yearly Production (t/y)

969,990.00 / 1,000,000

0.969990

10 Years

6.12.1.1 Lab Results

Singo Consulting used the following standard operating procedure for whole-core sampling:

1. Sampling was conducted in such a manner that:

a) Rocks splits on contacts

b) Secure samples in heavy-duty PVC bags

c) Double labelling system in place

d) Samples submitted to an accredited commercial laboratory

Table 6: Laboratory Analysis of raw coal results

UAS

Client Name : Singo Consulting (Pty) Ltd

Client Address : Office 870
: 5 Balalaika Street
: Tasbet Park Ext 2
: Witbank

Email Address : kenneth@singoconsulting.co.za
Cell No : 013 892 0041

								As Received	Air-Dry Basis								Dry-Basis Results				
Received Date	Date of Testing	Reported Date	TAT Time	Condition of bags	Lab No	Client's Ref	Sample Mass	Total H2O %	Moisture in analysis sample %	Ash %	Volatile Matter %	Fixed carbon % By Difference	Calorific Value MJ/kg	Total sulphur %	Total Carbon %	Phos in Coal %	Ash %	Volatile Matter %	Fixed carbon % By Difference	Calorific Value MJ/kg	Total sulphur %
							Kg														
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229382	Isingo Consulting BH04 Seam 2 Sample 1 (08/05/2023)	3.85	***	9.5	38.5	8.1	43.9	12.16	0.48	***	***	42.6	9.0	48.5	13.44	0.48
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229383	Isingo Consulting BH04 Seam 2 Sample 2 (08/05/2023)	3.83	***	7.8	27.7	5.2	59.3	19.25	0.35	***	***	30.0	5.6	64.3	20.88	0.38
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229384	Isingo Consulting BH04 Seam 2 Sample 3 (08/05/2023)	2.70	***	2.8	81.8	7.3	8.1	1.66	0.15	***	***	84.2	7.5	8.3	1.71	0.15
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229385	Isingo Consulting BH04 Seam 2 Sample 4 (08/05/2023)	0.81	***	3.2	65.6	6.8	24.4	5.37	0.34	***	***	67.8	7.0	25.2	5.55	0.35
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229386	Isingo Consulting BH04 Seam 3 Sample 1 (08/05/2023)	5.03	***	6.7	29.0	5.4	58.9	19.98	0.31	***	***	31.1	5.8	63.1	21.41	0.33
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229387	Isingo Consulting BH05 14-15m Sample 1 (08/05/2023)	1.43	***	2.2	80.7	7.8	9.3	1.29	0.58	***	***	82.5	8.0	9.5	1.32	0.59
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229388	Isingo Consulting BH05 15-16m Sample 2 (08/05/2023)	1.02	***	3.2	50.2	7.2	39.4	11.70	1.42	***	***	51.9	7.4	40.7	12.09	1.47
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229389	Isingo Consulting BH05 16-17m Sample 3 (08/05/2023)	1.33	***	3.2	32.2	8.0	56.6	20.28	1.40	***	***	33.3	8.3	58.5	20.95	1.45
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229390	Isingo Consulting BH05 17-18m Sample 4 (08/05/2023)	1.81	***	5.1	37.5	7.6	49.8	16.30	0.85	***	***	39.5	8.0	52.5	17.18	0.90
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229391	Isingo Consulting BH05 18-18.5m Sample 5 (08/05/2023)	0.58	***	3.7	63.2	10.7	22.4	5.69	1.56	***	***	65.6	11.1	23.3	5.91	1.62
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229392	Isingo Consulting BH06 2-3m Sample 01 (08/05/2023)	2.15	***	2.5	56.8	18.3	22.4	7.60	1.63	***	***	58.3	18.8	23.0	7.79	1.67
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229393	Isingo Consulting BH06 3-4m Sample 02 (08/05/2023)	2.57	***	2.2	63.8	16.4	17.6	6.56	1.85	***	***	65.2	16.8	18.0	6.71	1.89
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229394	Isingo Consulting BH07 12-13m Sample 01 (08/05/2023)	0.76	***	2.6	30.5	5.9	61.0	21.50	1.33	***	***	31.3	6.1	62.6	22.07	1.37
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229395	Isingo Consulting BH07 13-14m Sample 02 (08/05/2023)	1.11	***	3.1	32.4	3.9	60.6	21.31	1.76	***	***	33.4	4.0	62.5	21.99	1.82
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229396	Isingo Consulting BH07 14-15m Sample 03 (08/05/2023)	2.00	***	2.2	88.4	1.2	8.2	0.69	0.61	***	***	90.4	1.2	8.4	0.71	0.62
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229397	Isingo Consulting BH07 15-16m Sample 04 (08/05/2023)	1.91	***	0.6	91.0	4.4	4.0	0.10	0.19	***	***	91.5	4.4	4.0	0.10	0.19
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229398	Isingo Consulting BH08 Seam 2 : 16-18m Sample 01 (08/05/2023)	2.15	***	2.6	14.7	12.9	69.8	27.80	0.48	***	***	15.1	13.2	71.7	28.54	0.49
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229399	Isingo Consulting BH08 Seam 2 : 17-18m Sample 02 (08/05/2023)	1.26	***	2.3	14.9	12.3	70.5	27.77	2.59	***	***	15.3	12.6	72.2	28.42	2.65
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229400	Isingo Consulting BH08 Seam 2 : 18-17m Sample 02 (08/05/2023)	1.64	***	3.5	23.0	8.9	64.6	24.21	0.70	***	***	23.8	9.2	66.9	25.09	0.73
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229401	Isingo Consulting BH08 Seam 2 : 15-18m Sample 04 (08/05/2023)	1.35	***	2.8	14.0	11.1	72.1	28.68	5.24	***	***	14.4	11.4	74.2	29.51	5.39
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229402	Isingo Consulting BH08 Seam 2 : 13.85-14m Sample 5 (08/05/2023)	2.38	***	4.2	40.7	8.3	46.8	14.88	6.47	***	***	42.5	8.7	48.9	15.53	6.75
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229403	Isingo Consulting BH09 Seam 2 : 12.80-13.80 m Sample 2 (08/05/2023)	1.75	***	3.0	22.1	26.2	48.7	23.60	3.07	***	***	22.8	27.0	50.2	24.33	3.16
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229404	Isingo Consulting BH09 Seam 2 : 13.80-14.80 m Sample 3 (08/05/2023)	2.35	***	2.9	21.9	24.0	51.2	24.46	2.12	***	***	22.6	24.7	52.7	25.19	2.18
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229405	Isingo Consulting BH09 Seam 2 : 15.80-16.80 m Sample 4 (08/05/2023)	2.30	***	2.4	13.6	28.7	55.3	29.04	1.90	***	***	13.9	29.4	56.7	29.75	1.95
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229406	Isingo Consulting BH09 Seam 2 : 16.80-17.80 m Sample 5 (08/05/2023)	2.12	***	2.4	11.3	21.2	65.1	30.79	1.30	***	***	11.6	21.7	66.7	31.55	1.33
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229407	Isingo Consulting BH09 Seam 2 : 17.80-18.20 m Sample 6 (08/05/2023)	0.84	***	1.7	12.8	24.9	60.6	28.07	2.34	***	***	13.0	25.3	61.6	28.56	2.38
08/05/2023 12:47 PM	08/05/2023	09/05/2023 07:40 AM	18:53	Good	1229408	Isingo Consulting BH09 Seam 2 : 11.13-12.15 m Sample 1 (08/05/2023)	1.19	***	2.6	14.0	21.0	62.4	27.50	5.15	***	***	14.4	21.6	64.1	28.23	5.29

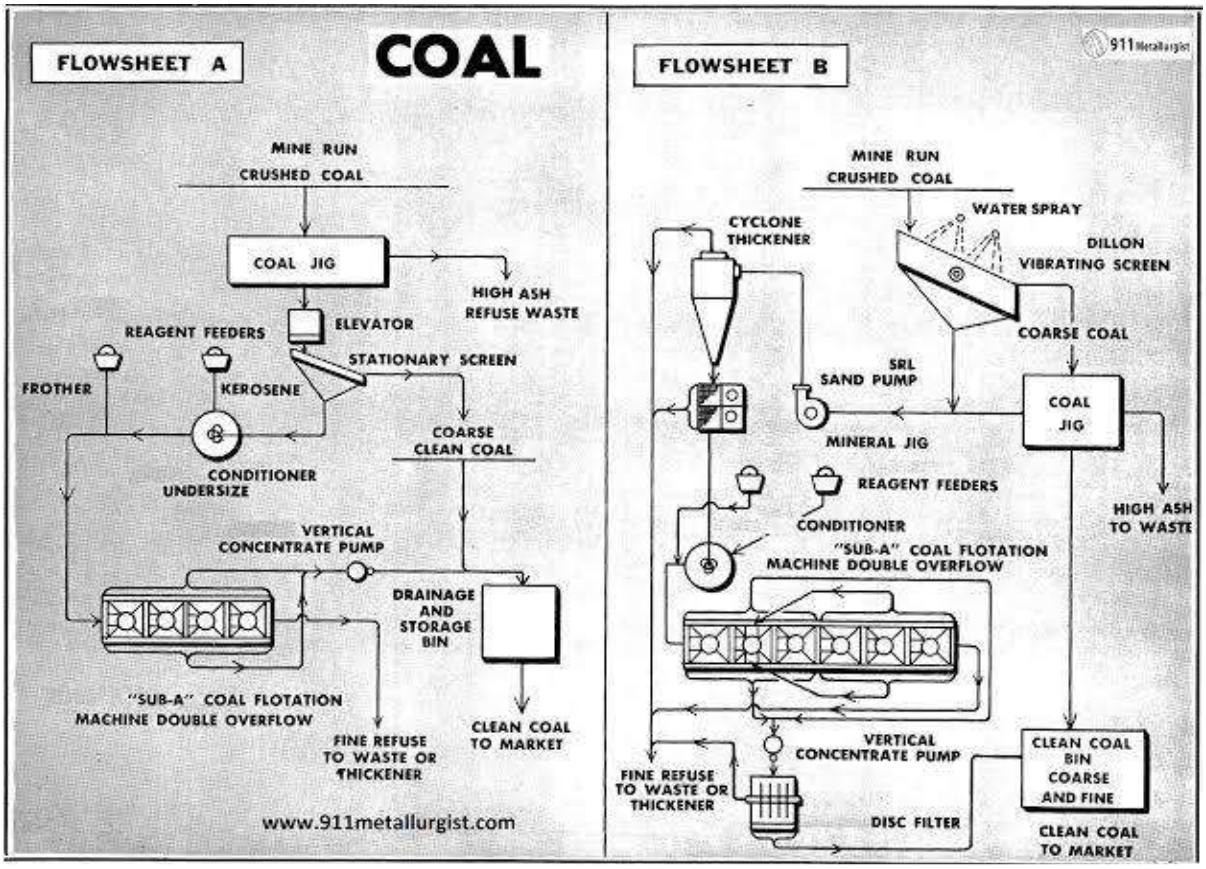


Figure 15: Example of Coal processing and beneficiation (https://tse4.mm.bing.net/th?id=OIP.Wm1Ps8Rykv1aH_GP-bs3ugHaFy&pid=Api&P=0&h=180)

Effective dewatering of coal has become increasingly important in meeting tight product specifications and improving handle ability. The most popular equipment is vibrating screens and basket centrifuges for coarse coal, scroll centrifuges for fine coal, and vacuum filters for ultrafine product from flotation. While dewatering of larger sizes (less than 0.5mm) has traditionally presented limited problems, the dewatering of finer coal, particularly by vacuum filtration, has proven problematic. Initially, disc filters were used, but were later replaced by rotary vacuum filters and, more recently, horizontal belt vacuum filters. For some applications, where additional processing costs can be justified, hyperbolic filtration is used to produce low-moisture filter cakes.

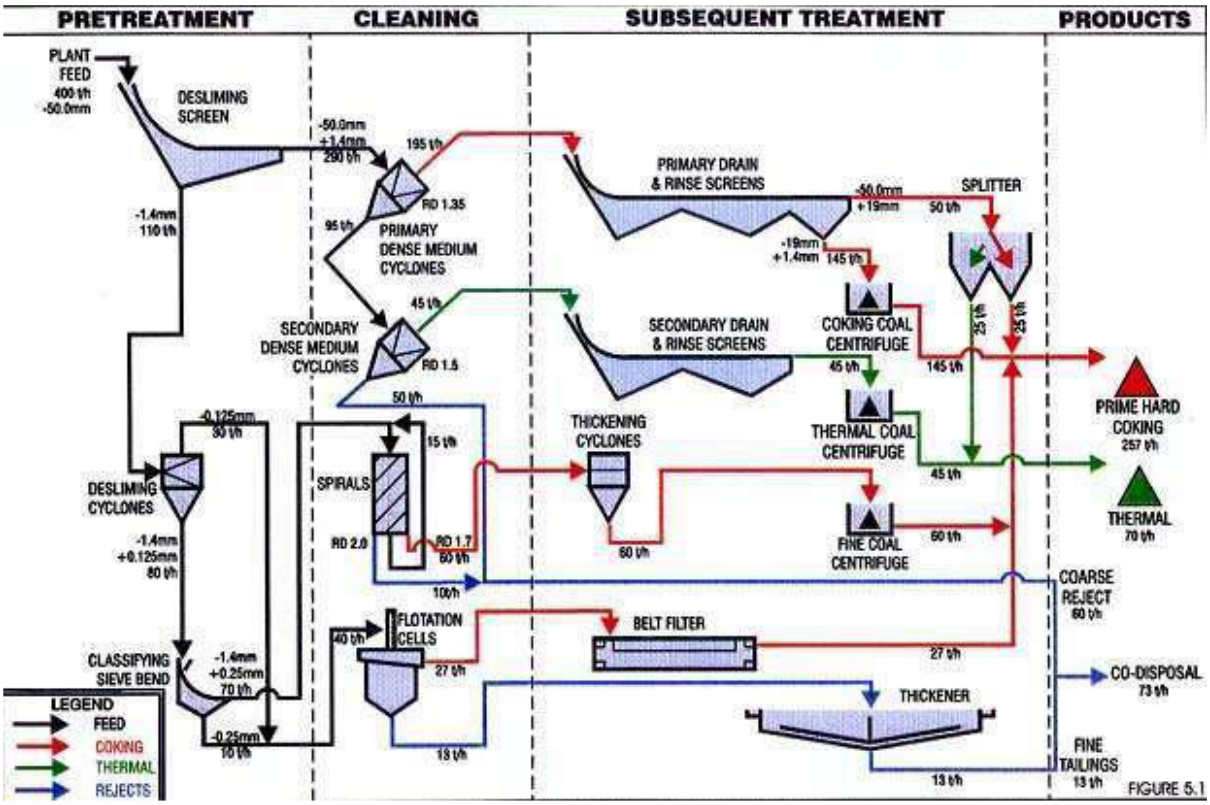


Figure 16: Example of Flow chart of coal processing plant (https://tse4.mm.bing.net/th?id=OIP.9-BrN3sgutH_CnFsmtK1QQHaFJ&pid=Api&P=0&h=180)

Centrifuging (including screen bowl, scroll/screen and basket scroll centrifuges) is also used to dewater fine coal; it costs less than vacuum filtration. R&D Company is continuing to develop centrifuges for the dewatering of even finer particle sizes. Dewatering of fine coal is enhanced by the addition of flocculants, which the R&D Company also continuously enhances.

6.12.1.2 Discard treatment and water clarification

Discard treatment remains the most difficult and expensive area of coal preparation. As such, optimising thickener performance and reducing operating costs, have remained subjects of ongoing development and, in recent years, this has led to the introduction of a range of “high-rate” thickener designs. This has been accompanied by the development of advanced chemical reagent systems to improve water quality and increase thickener output.

Many modern coal preparation plants employ a closed water circuits. To a large extent, this has been in response to increasing environmental pressure to reduce the use of Discard lagoons. Traditionally, further Discard dewatering is carried out using plate and frame filter presses. Filter pressing is a batch process, which is also the focus of considerable development work to optimise press cycle performance. As a result, modern installations are highly automated and offer excellent dewatering performance, producing filter cakes with very low moisture content. Filter pressing is still, however, a costly operation and recent years

have seen the introduction of multi-roll filters (MRFs). Although dewatering performance is inferior to that of the plate and frame filter press, MRFs are now being selected for many applications because of the low capital costs and ease of operation

Figure 12 indicates the positioning of the plant infrastructure, which will consist of:

- Pollution Control Dam (PCD)
- Discard Dump
- Processing Plant
- Coal Stockpile and Loading Area
- Ablution and Changing House
- Topsoil Stockpiles
- Stores, Workshops and Wash bays
- Offices and Workshops
- Access Road
- Weighbridge
- Store, workshop Fuel storage and fuel bay
- Mines office
- Box cut
- Parking area
- Overburden stockpile area
- Water Trenches

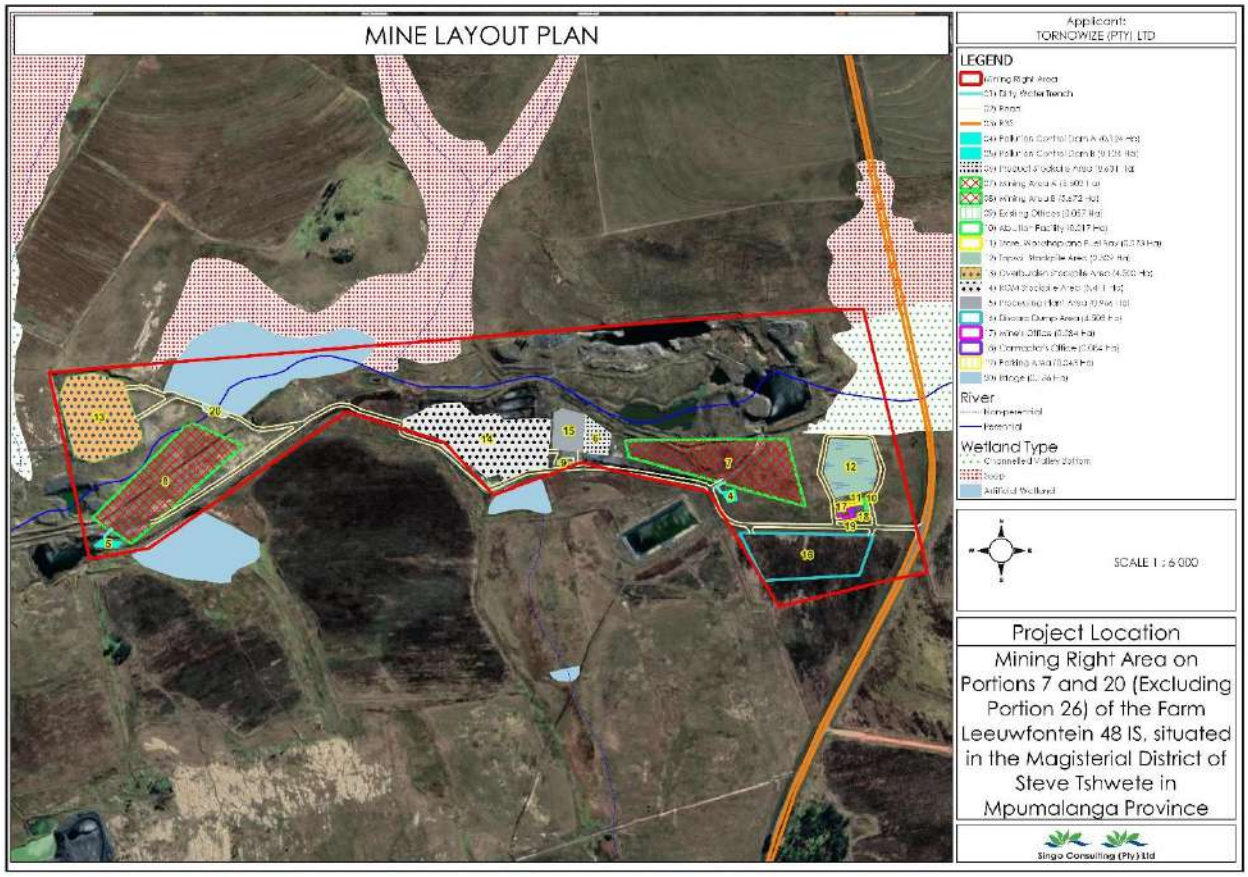


Figure 17: Proposed mine layout (Singo Consulting, 2023)

During the operational phase of the proposed coal mining project, after the coal has been mined, it will be stockpiled in a designated area. From this product stockpile, the coal will be reclaimed and delivered to two primary destinations: Eskom power plants and the nearest rail-siding to the area of interest. Once the coal is extracted and processed, it will be stockpiled in a centralized location known as the product stockpile. This stockpile ensures a steady supply of coal for transportation and delivery. When required, the coal will be reclaimed from the stockpile using specialized equipment. Reclamation involves the controlled removal of coal from the stockpile. The reclaimed coal will then be transported to Eskom power plants to fuel their electricity generation. Additionally, coal will be reclaimed from the product stockpile for transportation to the nearest rail-siding to the area of interest. From there, it will be loaded onto trains for distribution to other destinations or markets. The mining plant will use the Eskom power line as the primary source of electricity. As a backup, the mining site will also be equipped with generators to ensure a continuous power supply in case of power outages or emergencies. Various equipment and facilities on-site will require electricity for their operation. This includes crushers, apron feeders, conveyors, offices, the medical facility, and the potable water pump station. All of these elements are essential for the efficient and safe functioning of the mining operation. By utilizing the Eskom power line and having backup generators in place, Tornowize (Pty) Ltd ensures a reliable and continuous power supply to support the mining operations and associated

facilities. The use of electric equipment, such as crushers and conveyors, promotes environmental sustainability by reducing emissions compared to diesel-powered alternatives.

Throughout the operational phase, proper maintenance and monitoring of the equipment and electricity infrastructure will be essential to ensure smooth and uninterrupted mining operations. Adherence to environmental regulations and best practices in electricity consumption will be key to minimizing the project's ecological footprint and fostering responsible coal mining practices.

6.12.1.3 Areas proposed for mining.

The proposed project area is situated in the Central Block of Witbank Coalfields. The Witbank Coalfield, also known as the eMalahleni Coalfields, is a major coal-producing region in South Africa. It is situated in the province of Mpumalanga and forms part of the larger Highveld Coalfield, which is one of the largest coalfields in the country. The Witbank Coalfield is of significant economic importance, providing a substantial portion of South Africa's coal production. According to XMP Consulting CC, the Witbank Coalfield extends from Brakpan in the west through to Belfast in the east. The northern boundary is a very irregular sub-crop against the pre-Karoo basement rocks of predominantly Waterberg sandstones with the most northerly limit about 15km NW of Witbank, with many “inlets” to the east and west. The south boundary is a prominent pre-Karoo felsite contact called the Smithfield ridge. This basin was first exploited in the late 1800s in the Brakpan (Apex Mines) region and has been the focus of concerted exploration and exploitation ever since. The basin is a multiple seam deposit type with the development of five major seam horizons which may in places be composite seams. The major controls for the development of the coal are proximity to undulations of the “basement” topography, through erosion channelling and sediment influx into swamp beds and finally erosion of the current erosion surface. The primary economic coal seams have been the No. 2 Seam and No. 4 Lower Seam and, in places, the No. 5 Seam. Structurally, the coal horizons are un-deformed with each displaying a very slight dip to the southeast of less than a degree and minor discrete faulting events that have a southwest to northeast trend of graben features and other minor faulting events. The most distinctive post-depositional feature is the intrusion of dolerites related to the Lesotho Basalts that have resulted in a variety of sills and dykes of various ages. The most prominent of the dykes is the Ogies dyke, a 12 to 20m thick essentially vertical intrusion with an east-west strike. The No. 4 Dolerite sill, a 20 to 70m thick multiple flow event, has a preferential intrusion horizon above the No. 5 coal Seam, but in places it transgresses through the coal bearing strata to the pre-Karoo basement and forms in other places a barrier to erosion.

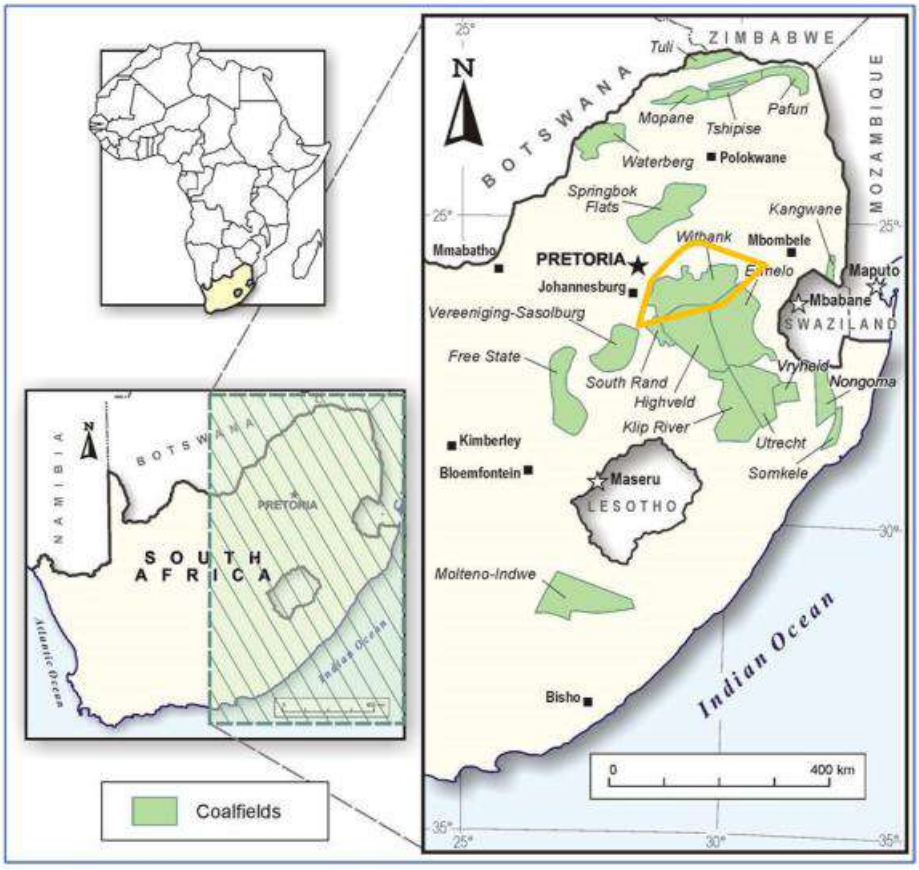


Figure 18: South Africa Coalfields (Snyman, 1998), Witbank Coalfield is outlined by an orange marker.

6.12.1.4 Waste stockpiles

Waste stockpiles will contain all the waste products from the mine workings. Waste stockpiles are indicated in the list of waste activities published in the GN. No. R. 632 of 24 July 2015 in accordance with the National Environmental Management: Waste Act 59 of 2008. One of the activities which guides the waste stockpiles is; Activity 17 of GN.R. 984: *"Any activity which requires a mining right as contemplated in section 22 of the Mineral Resources and Petroleum Development Act (MPRDA), 2002 (Act no. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the MPRDA."*

The applicable waste management activity (Category A activity 1 and Category B listed activity 11 of GN.R. 633) relates to residue stockpiles associated with the mining of the coal mineral, covering an extend of not more than 355 ha, on the property mentioned. It also include the construction of PCD to contain the "dirty" storm water runoff and also a Discard dump to contain waste. An example of how waste will be dispatched is shown below.

Figure 19: Typical example of Waste stockpile area.

In terms of new regulations, mine waste residue stockpiles must comply with landfill requirements, as well as the National Norms and Standards for the Assessment of Waste for Landfill Disposal, 2013; and National Norms and Standards for Disposal of Waste to Landfill, 2013.

6.12.1.5 Decommissioning phase

Simultaneous mine rehabilitation must be undertaken with opencast mining; final rehabilitation will take place after the operational phase has ended. The decommissioning and closure of opencast mining will occur with an applicable EMPR as part of a closure EIA to be conducted, as well as with any other closure plans pertaining to mine infrastructure and facilities. This phase starts at the end of the project's operational phase and ends when the site obtains a Closure Certificate from the regulatory authorities. It may include a period where there is no activity on the site other than monitoring prior to closure completion. The progressive total for rehabilitation to be provided is calculated on the financial provision quantum attached in the figure 20 below.

Applicant:
Evaluator: **Rofhiwa Nemutandani**

CALCULATION OF THE QUANTUM

DMRE REF: 10383 MR

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0.151	19	1	1	2.869
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	0.05	49	1	1	2.45
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	26.918	284292	0.2	1	1530514.411
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	1.217	189528	1	1	230655.576
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	0.1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	29.523	150138	0.3	1	1329757.252
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0.58	57087	1	1	33110.46
14	2 to 3 years of maintenance and aftercare	ha	29.523	19980	1	1	589869.54
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
					Sub Total 1		3713912.558

1	Preliminary and General	445669.507	weighting factor 2 1	445669.507
2	Contingencies	371391.2558		371391.2558
			Subtotal 2	4530973.32
			VAT (15%)	679646.00
			Grand Total	**5210619**

Rofhiwa Nemutandani
26/06/2023

Singo Consulting (Pty) Ltd

Figure 20: Calculated financial provision.

6.12.1.6 Post-closure phase

Monitoring of surface and ground water quality, and the indefinite management of decant levels by pumping water out of the pit to the MWRP (Municipality Waste Recycling Programme) for treatment, will be conducted during this phase.

7 POLICY AND LEGISLATIVE CONTEXT

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
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.	i.e., Where in this document has it been explained how the development complies with and responds to the legislation and policy context.	E.g., Water Use License has/has been applied for.
Constitution of the Republic of South Africa, Act 108 of 1996 Section 24 states: "Everyone has the right— (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that— (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development".	The EIA is being undertaken to determine the impacts associated with the project, including environmental, social and economic. As part of the EIA process, mitigation measures and monitoring plans are recommended to ensure that any potential impacts are managed to acceptable levels to support the rights enshrined in the Constitution. The project must prove to be sustainable and balance the social, economic and environmental aspects of sustainable development.	An Application for NEMA S&EIR combined with NEMWA S&EIR was submitted to the DMRE on the 05 October 2022. The application was respectfully accepted on the 09 of February 2023 (Appendix 24). The scoping report which details the biophysical, economic and social environments that will be affected was compiled and submitted to the competent authority on the 23 of March 2023 and was accepted on the 16 May 2023 (Appendix 23). This EIA phase is undertaken where the impacts associated with the proposed activities as well as measures to mitigate, manage and monitor the impacts are being determined and included in the EMPr.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
Mineral and Petroleum Resources Development Act, 2002 (MPRDA) The Mineral and Petroleum Resources Development Act, 2002 (MPRDA), outlines the procedural requirements an applicant must follow to get a mining right who wishes to proceed with a mining project, part of which requires the applicant to obtain Environmental Authorisation (EA) in terms of the National Environmental Management Act (1998, as amended). The MPRDA is administered by the Department of Mineral Resources and Energy (DMRE) and governs the sustainable utilisation of South Africa's mineral resources. The MPRDA requires that mining companies assess the socio-economic impacts of their activities from start to closure and beyond. Companies must develop and implement a comprehensive Social and Labour Plan (SLP) to promote socio-economic development in their host communities and to prevent or lessen negative social impacts.	A Mining Right Application for the proposed Project was submitted to the DMRE on 05 October 2022. This EIA Report, which relates specifically to the Leeuwfontein Mining Right applied for, has been compiled in accordance with the MPRDA.	Tornowize has submitted a mining right application, together with the SLP, to mine coal. The EIA is be conducted to meet the requirements of the MPRDA read with the EIA regulations, 2014. Financial provisioning and closure costs will be included in the EIA.
National Environmental Management Act, 1998 (Act 107 of 1998) and EIA Regulations (December 2014 as amended) The main aim of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) is to provide for co-operative governance by establishing decision-making principles on matters affecting the environment. In terms of the NEMA EIA regulations, the applicant is required to appoint an Environmental Assessment Practitioner (EAP) to undertake the EIA, as well as conduct the public participation process. In South Africa, EIA became a legal requirement in 1997 with the promulgation of regulations under the Environment Conservation Act (ECA). Subsequently, NEMA was passed in 1998. Section 24(2) of NEMA empowers the Minister and any MEC, with the concurrence of the Minister, to identify activities	This EIA report is informed by the requirements of the NEMA and Regulations there under. An application for Environmental Authorisation was lodged on 05 of October 2022. The listed activities which are triggered under the NEMA have been identified and provided in section 6.2 of this report.	An EA application for the proposed project was lodged on the 05 of October 2022. Acceptance of the application was received on the 09 February 2023 (Appendix 22) In terms of the listed activities, an S&EIA is required. Proposed management and mitigation measures for identified impacts responds to the Duty of Care principle, as per Section 28 of the NEMA.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
which must be considered, investigated, assessed and reported on to the competent authority responsible for granting the relevant environmental authorisation. On 21 April 2006 the Minister of Environmental Affairs and Tourism promulgated regulations in terms of Chapter 5 of the NEMA. These regulations, in terms of the NEMA, were amended in June 2010 and again in December 2014. The December 2014 NEMA regulations are applicable to this project. Mining Activities officially became governable under the NEMA EIA in December 2014.		A SR was compiled and submitted to the DMRE on 23 of March 2023. An EIA phase (this report) has been undertaken where the impacts associated with the proposed activities as well as measures to mitigate, manage and monitor the impacts have been determined.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) The objectives of NEM:WA involve the protection of health, wellbeing and the environment by providing reasonable measures for the minimization of natural resource consumption, avoiding and minimizing the generation of waste, reducing, recycling and recovering waste, and treating and safely disposal of waste as a last resort. In terms of the NEMWA, all waste management activities must be licensed. On 29 November 2013, the list of waste management activities published under GN R718 of 3 July 2009 (GN R718) was repealed and replaced with a new list of waste management activities under GN R921 of 29 November 2013. Included in the new list are activities listed under Category A, B and C. A distinction is made between: • Category A describes waste management activities requiring a Basic Assessment process to be carried out in accordance with the EIA Regulations supporting an application for a waste management licence; • Category B describes waste management activities requiring an Environmental	The listed activities which are triggered under the NEM:WA have been identified and provided section 6.2 of this report Category B activities were identified; therefore, a full EIA process is required the proposed project. The triggered waste management activities have been applied for as part of the Environmental Application to the DMRE. GNR 633 includes the establishment or reclamation of a residue stockpile or residue deposit resulting from prospecting or mining activities as a listed activity.	Various categories of waste management activities are applicable to the proposed mining operation. A WML is included as part of the “one environmental system”.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
• Impact Assessment process to be conducted in accordance with the EIA Regulations supporting a waste management licence application; and • Category C describes waste management activities that do not require a Waste Management License (WML) but these activities will have to comply with the prescribed requirements and standards as prescribed by the Minister, which includes the Norms and Standards for Storage of Waste, 2013.		
National Water Act, 1998 (Act No. 36 of 1998) (NWA) NWA also has a role to play in regulating mining. Mining almost always uses water and/or has an impact on a water resource such as a stream, wetland or river. The NWA is administered by the Department of Water and Sanitation (DWS). The NWA provides for the sustainable and equitable use and protection of water resources. It is founded on the principle that the National Government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest, and that a person can only be entitled to use water if the use is permissible under the NWA. GN 704- Regulations on use of water for mining and related activities aimed at the protection of water resources.	An Integrated Water Use Licence Application (IWULA) and an associated Integrated Water and Waste Management Plan (IWWMP) are required in terms of Section 21 of the NWA for the project and have been submitted to DWS for the applicable Section 21 water uses.	An IWULA has been submitted to the DWS for the triggered water uses under Section 21 of the NWA (WUL Reference: WU28322).
NEM:WA WASTE CLASSIFICATION AND MANAGEMENT REGULATIONS, 2013 (GN R. 634) Chapter 9 of the above-mentioned Regulations stipulates the requirements for a motivation for and consideration of listed Waste Management Activities that do not require a Waste Management License. The motivation must:	A waste classification assessment (Appendix 13) has been conducted for this project.	Waste streams generated from mine activities will, where applicable, be classified accordingly to determine their nature (i.e. general or hazardous), and subsequently managed and disposed of in accordance with the relevant legislative requirements.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
• Demonstrate that the waste management activity can be implemented without unacceptable impacts on, or risk to, the environment or health; • Must provide a description of the waste; • Description of waste minimisation or waste management plans; • Description of potential impacts, etc.: • The transitional provisions under Chapter 6 of this Regulation prescribes timeframes in which all waste must be classified within 18 months from the date of commencement of these regulations (23 August 2013).		

National Environmental Management: Air Quality Act
 	
The National Environmental Management: Air Quality Act (NEM:AQA) (Act No. 39 of 2004 as amended) is the main legislative tool for the management of air pollution and related activities. The Object of the Act is:
 	
• To protect the environment by providing reasonable measures for-
  ○ The protection and enhancement of the quality of air in the republic;
  ○ The prevention of air pollution and ecological degradation; and
  ○ Securing ecologically sustainable development while promoting justifiable economic and social development; and
• Generally to give effect to Section 24(b) of the constitution in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and wellbeing of people.
 	
The NEM:AQA mandates the Minister of Environmental Affairs to publish a list of activities which result in atmospheric emissions and consequently cause significant detrimental effects on the environment, human health and social welfare. The Listed
	An Air Quality Assessment (AQA) was not undertaken as part of this EIA phase; however, air quality mitigation measures will be developed to better manage the air quality around the mining area. Measures include but are not limited to dust suppression activities within the mine and the air quality management through dust bucket method.	The Project's activities will set out to abide by the NEM:AQA and standards set out in the NAAQS. The desktop standard required mitigation are included in the EMPr as part of this EIA.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
Activities and Minimum National Emission Standards were published on the 22nd November 2013 (Government Gazette No. 37054). According to the Air Quality Act, air quality management control and enforcement is in the hands of local government with District and Metropolitan Municipalities as the licensing authorities. Provincial government is primarily responsible for ambient monitoring and ensuring municipalities fulfil their legal obligations, with national government primarily as policy maker and co-ordinator. Each sphere of government must appoint an Air Quality Officer responsible for co-ordinating matters pertaining to air quality management. Given that air quality management under the old Act was the sole responsibility of national government, local authorities have in the past only been responsible for smoke and vehicle tailpipe emission control. The National Pollution Prevention Plans Regulations which came into effect on 21 July 2017 and tie in with The National Greenhouse Gas Emission Reporting Regulations which took effect on 3 April 2017. In summary, the regulations aim to prescribe the requirements that pollution prevention plans of greenhouse gases declared as priority air pollutants need to comply with, in terms of the NEM:AQA. The regulations specify who needs to comply, and by when, as well as prescribing the content requirements. Mines do have an obligation to report on the GHG emissions under these regulations		
National Environmental Management: Biodiversity Act The overarching aim of the National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA), within the framework of NEMA, is to provide for: • The management and conservation of biological diversity within South Africa, and of the components of such biological diversity;	A terrestrial ecology assessment (Appendix 9) was conducted during the EIA.	The provisions of this Act have been considered and, where relevant, incorporated into the proposed mitigation measures and requirements of the EMPr.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
• The use of indigenous biological resources in a sustainable manner; and • The fair and equitable sharing among stakeholders of benefits arising from bioprospecting involving indigenous biological resources. The South African National Biodiversity Institute (SANBI) was established on 1 September 2004 through the signing into force of the NEMBA, its purpose being (inter alia) to report on the status of the country's biodiversity and the conservation status of all listed threatened or protected species and ecosystems. Other objectives include the identification, control and eradication of declared weeds and alien invaders in South Africa. These are categorised according to one of the following categories, and require control or removal: • Category 1a Listed Invasive Species: Category 1a Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be combated or eradicated; • Category 1b Listed Invasive Species: Category 1b Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be controlled; • Category 2 Listed Invasive Species: Category 2 Listed Invasive Species are those species listed by notice in terms of section 70(1)(a) of the Act as species which require a permit to carry out a restricted activity within an area specified in the Notice or an area specified in the permit, as the case may be; and • Category 3 Listed Invasive Species: Category 3 Listed Invasive Species are species that are listed by notice in terms of section 70(1)(a) of the Act, as species which are subject to exemptions in terms of section 71(3) and prohibitions in terms of section 71A of Act, as specified in the Notice.		All Alien Invasive species (AIS) and other vulnerable species will be monitored and managed according to an eradication and management plan during the construction, operational and rehabilitation phases. Topsoil should be protected from AIS.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
National Environment Management: Protected Areas Act National Environment Management: Protected Areas Act, 2003 (Act No. 57 of 2003) This Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. It also seeks to provide for the sustainable utilization of protected areas and to promote participation of local communities in the management of protected areas.	A terrestrial ecology assessment (Appendix 9) has been conducted to determine whether any protected areas are located in the project site.	• Due to the previous mining, these areas have negligible or low ecological functioning. • No endemic, Red Data or protected species were recorded in the project area and the probability of such species occurring in this vegetation community is considered low.
The National Heritage Resources Act The National Heritage Resources Act (NHRA) (Act 25 of 1999) stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34(1) of the NHRA states that, "no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority…" The NHRA is utilized as the basis for the identification, evaluation and management of heritage resources and in the case of CRM those resources specifically impacted on by development as stipulated in Section 38 of NHRA, and those developments administered through NEMA, MPRDA and the NEMWA legislation. In the latter cases the feedback from the relevant heritage resources authority is required by the State and Provincial Departments managing these Acts before any authorizations are granted for development. The last few years have seen a significant change towards the inclusion of heritage assessments as a major component of Environmental Impacts Processes required by NEMA and MPRDA. This change requires us to	In accordance with the legislative requirements and EIA rating criteria, the regulations of the SAHRA and Association of Southern African Professional Archaeologists (ASAPA) have also been incorporated to ensure that a comprehensive and legally compatible Archaeology & Heritage Impact Assessment (HIA) is compiled. So far, no comments have been received from SAHRA, but all comments made during the draft EIA report have been included.	The applicable legislation will be followed in terms of sensitive historical features, such as buildings and graves prior to any construction activities should the mine be approved.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
evaluate the Section of these Acts relevant to heritage. The NEMA 23(2)(b) states that an integrated environmental management plan should, "…identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage". A study of subsections (23)(2)(d), (29)(1)(d), (32)(2)(d) and (34)(b) and their requirements reveals the compulsory inclusion of the identification of cultural resources, the evaluation of the impacts of the proposed activity on these resources, the identification of alternatives and the management procedures for such cultural resources for each of the documents noted in the Environmental Regulations. A further important aspect to be taken account of in the Regulations under NEMA is the Specialist Report requirements laid down. The MPRDA defines 'environment' as it is in the NEMA and, therefore, acknowledges cultural resources as part of the environment. Section 39(3)(b) of this Act specifically refers to the evaluation, assessment and identification of impacts on all heritage resources as identified in Section 3(2) of the National Heritage Resources Act that are to be impacted on by activities governed by the MPRDA. Section 40 of the same Act requires the consultation with any State Department administering any law that has relevance on such an application through Section 39 of the MPRDA. This implies the evaluation of Heritage Assessment Reports in Environmental Management Plans or Programmes by the relevant heritage authorities (Fourie, 2008b).		
The Conservation of Agricultural Resources Act (Act No. 43 of 1983) To provide for control over the utilization of the natural agricultural resources in South Africa in order to promote the conservation of the soil, the water sources and	A soil, hydrology, ecology and Wetland assessment was conducted during the EIA phase (refer to appendix 9, 16 & 25). The	Rehabilitation of the mining operations will be required post-mining operations. The land needs to be rehabilitated to pre-mining

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
the vegetation and the combating of weeds and invader plants; and for matters connected therewith.	study area is located on a very high aquatic biodiversity land.	conditions. It is anticipated that the land will be restored to grazing capacity land. The preservation of topsoil is vital to ensure successful rehabilitation measures.
GN R 1147 (Financial Provisioning Regulations), 2015 The Financial Provisioning Regulations prescribe methods for determining the quantum of financial provision for rehabilitation and mechanisms for providing for it. Section 41 (1) of the MPRDA has been repealed and Section 24P of the NEMA, as amended, which provides that the holder of a mining right must make financial provision for rehabilitation of negative environmental impacts. The financial provision must guarantee the availability of sufficient funds.	The financial provisioning regulations are applicable to rehabilitation and closure plans as they prescribe the minimum content of an annual rehabilitation plan and the minimum content of a final rehabilitation, decommissioning and mine closure plan.	Rehabilitation, decommissioning and the mine closure plan, including the financial provision estimate, were assessed during the EIA Phase.
Spatial Planning and Land Use Management (SPLUMA) Act 16 of 2013 The Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA) is a framework law, which means that the law provides broad principles for a set of provincial laws that will regulate planning for the country. The Act introduces provisions to cater for development principles; norms and standards; inter-governmental support; Spatial Development Frameworks (SDFs) across national, provincial, regional and municipal areas; Land Use Schemes (LUS); and municipal planning tribunals. SPLUMA also provides clarity on how planning law interacts with other laws and policies. It is a uniform, recognisable and comprehensive system that addresses the past spatial and regulatory imbalances, and promotes optimal exploitation of minerals and mineral resources. SPLUMA achieves this by strengthening the position		The area of interest has not been rezoned however, the applicant will be continuing with the previous land use classification of mining. No new activities are being introduced and the project remains consistent with the site's historical land use.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
of mining right holders when land needs to be rezoned for mining purposes. SPLUMA's impact on optimal exploitation is particularly evident where conflict exists between mining right holders and landowners. Economic and policy considerations, as well as practical necessities, often motivate the state to grant mining rights to entities other than landowners. SPLUMA is a new national framework Act that provides clear principles and standards for provincial and local governments to formulate their own new spatial planning and land use policies. The new provincial legislation can regulate, among other things, land development, land use management, spatial planning and municipal planning.		
Environment Conservation Act, 1989 (Act 73 of 1989) – Noise Control Regulations In terms of section 25 of the ECA, the national Noise Control Regulations (GN R154 in Government Gazette No. 13717 dated 10 January 1992) were promulgated. The NCRs were revised under GN R. 55 of 14 January 1994 to make it obligatory for all authorities to apply the regulations. The Gauteng Province promulgated provincial regulations: Noise Control Regulations of Gauteng 1999, (Provincial Gazette, Extraordinary no 75 of August 1999). Section 4 of the regulations prohibits a person from making, producing or causing a disturbing noise, or allowing it to be made produced or caused by any person, machine, device or apparatus or any combination thereof. A disturbing noise is defined in the regulations as 'a noise level which exceeds the zone sound level or if no zone sound level has been designated, a noise level which exceeds the ambient sound level at the same measuring point by 7 dBA or more. Section 5 of the noise control regulations in essence prohibits the creation of a noise nuisance. A noise nuisance is defined as 'any sound which disturbs or impairs or may	The noise control regulations will need to be considered in relation to the potential noise that may be generated mainly during the construction and decommissioning phases of the proposed project. The two key aspects of the noise control regulations relate to disturbing noise and noise nuisance. A noise impact assessment has not been undertaken for this mining right.	The proposed project activities will be set out to abide by the National Noise-Control Regulations and standards set out in the South African National Standards 10103. The noise impacts associated with the proposed activities have been determined through desktop study and mitigation and monitoring measures were proposed to minimise the impacts during the LoM.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
disturb or impair the convenience or peace of any person'. Noise nuisance is anticipated from the proposed project particularly to those residents that are situated in close proximity to the project sites. South African National Standard 10103 also applies to the measurement and consideration of environmental noise and should be considered in conjunction with these regulations. There are a few South African Bureau of Standards (SABS) relevant to noise from mines, industry and roads. They are: • South African National Standard (SANS) 10103:2008. 'The measurement and rating of environmental noise with respect to annoyance and to speech communication'; • SANS 10210:2004. 'Calculating and predicting road traffic noise'; • SANS 10328:2008. 'Methods for environmental noise impact assessments'. • SANS 10357:2004. 'The calculation of sound propagation by the Concave method'; • SANS 10181:2003. 'The Measurement of Noise Emitted by Road Vehicles when Stationary'; and • SANS 10205:2003. 'The Measurement of Noise Emitted by Motor Vehicles in Motion'. The relevant standards use the equivalent continuous rating level as a basis for determining what is acceptable. The levels may take single event noise into account, but single event noise by itself does not determine whether noise levels are acceptable for land use purposes. With regards to SANS 10103:2008, the		

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
recommendations are likely to inform decisions by authorities, but non-compliance with the standard will not necessarily render an activity unlawful per section.		

8 NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

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

The needs and desirability for a proposed coal mining right by Tornowize (Pty) Ltd in the local municipality of Steve Tshwete, Middelburg, Mpumalanga, can be evaluated in line with the existing coal mines (Goedehoop Colliery, Ilanga Colliery & Middlekraal Mine) around the proposed project area. The assessment will consider various factors to determine the justification and benefits of granting the mining right. Some of the key points to consider are as follows:

Economic Benefits: The existing coal mines in the region have likely contributed significantly to the local and national economy through job creation, tax revenues, and infrastructural development. The proposed coal mine by Tornowize (Pty) Ltd may provide additional economic benefits by generating employment opportunities for local communities and stimulating economic growth in the area.

Energy Security: Coal is a vital source of energy for South Africa, especially for power generation. The existing coal mines have played a crucial role in ensuring energy security for the country. The proposed coal mining right may further contribute to the supply of coal to meet the country's energy needs.

Infrastructure Development: Established coal mines often lead to the development of necessary infrastructure, such as roads, railways, and power lines, which benefit both the mining operations and local communities. The proposed mine may also contribute to infrastructure development in the area. Engaging with the local community and stakeholders is crucial to understanding their needs, concerns, and aspirations. The desirability of the project can be determined by the level of social acceptance and the extent of community participation in the decision-making process. A well-managed mining project can have lasting benefits for the region, such as improved infrastructure, skill development, and economic diversification beyond the life of the mine. The proposed mining right should align with the goals and objectives outlined in the Steve Tshwete Municipal IDP (2017-2022) which includes ensuring that the project contributes positively to the municipality's development priorities, such as job creation, infrastructure improvement, and environmental conservation.

Employment: The unemployment rate of Steve Tshwete decreased slightly from 19.7% in 2011 to 16.4% in 2015 and was the lowest among all the municipal areas of Mpumalanga. Unemployment rate for females 21.8% and that of males 12.9%. Youth unemployment rate according to the 2011 Census figures 27.1% - challenge with especially very high youth unemployment rate of females. The largest employing industries in Steve Tshwete are trade (including industries such as tourism), community/government services and mining these are outlined by the IDP.

Tornowize coal mine will have a positive impact on the socio-economic conditions of the local communities involved once operations commence, it will contribute to the socio-economic development of the region as a whole through social upliftment and the creation of jobs as key agents.

Coal as an important resource

According to South African Coal Sector Report, Coal is a combustible sedimentary rock formed from vegetation that has been consolidated between other rock strata and altered by the combined effects of pressure and heat over millions of years. Coal is composed primarily of carbon, and contains varying amounts of other components, like hydrogen, oxygen, sulphur, and other impurities. Main parameters used to define coal are calorific value, ash, moisture, and sulphur. According to the energy balance compiled by the DoE, coal constitutes approximately 72% of total primary energy supply in South Africa and is mostly used for power generation. In addition, coal is used to produce virtually all non-recycled iron. Coal is abundant, affordable, easy to transport, store and use, plus free of geopolitical tensions; all these attributes make it very popular. South Africa contributes about 3.5% of the world's coal resources. The country's production is around 3.3% of the world's annual total and exports approximately 6% of global exports. Coal is the major primary energy source for South Africa. More than 90% of the country's electricity and approximately 30% of the liquid fuel are produced from coal (DoE, 2016). Coal also 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.

Eskom generates approximately 90% of the electricity used in South Africa and approximately 45% of the electricity used in Africa. In global terms, the utility is among the top seven in generating capacity, among the top nine in terms of sales, and has one of the world's biggest dry-cooled power stations. Eskom uses over 90Mt of coal per annum and typically burns low quality coal characterised by high ash content and low calorific values. The coal which can be used varies between power stations. The Return-to-Service power stations require higher grade coal (23 MJ/kg), another group require 21-23 MJ/kg and only certain power stations can burn the lowest grade (Eskom, 2016). Coal is a good energy source, and it is also the cheapest source of energy. Unlike other forms of energy (nuclear, natural gas, oil, hydroelectric), coal mining provides many jobs by removing coal from the earth, transporting it to the utility, burning it, and properly disposing of coal ash. Eskom has voiced concern over medium and long-term future supply security to its coal-fired electricity generating power stations. If Eskom's needs are not met, it might have severe economic impacts. As such, coal is one of the five minerals selected by the DMRE for local beneficiation as it is considered critical to South Africa's on-going development (DMRE, 2011). See table 7 of Eskom's power stations.

In South Africa, coal is not only used for electricity generation. A diverse range of products can be derived from coal. Coal is also used to produce liquid fuels and non-energy coal products such as chemicals. Recently there is a fight amongst Ukraine and Russia over rulership and the impacts of the war has resulted to more need of coal in other areas as Russian country being a provider of coal in other regions is not trading, thus South Africa's coal was valued yet again, and coal price increased in the market ($324.00/t). The need for this thermal coal to can be mined, will increases the JSE market of South Africa as more coal will be required in other parts of the continent.

Taking into consideration the need to shift from coal-fired power stations to a greener economy including solar powered stations. Coal remains the best source of energy in South Africa. According to Rob Schmitz (2022), on the journal titled "Amid an energy crisis, Germany turns to the world's dirtiest fossil fuel", available on: https://www.npr.org/2022/09/27/1124448463/germany-coal-energy-crisis , developed countries such as Germany have tried to transition to greener and more renewable sources of energy, which however has ultimately failed, and the same countries are reviving their coal-fired power stations which were meant to shut down such as the Evonik coal plant in Marl, Germany to generate a source of energy once again. In addition, being mindful of the newly signed agreement by the government to shut down 8 power stations by 2035, Eskom being relatively more ambitious; to shut down 9 coal-fired power stations also by 2035. Unfortunately, Camden Coal fired power station falls under those targets, However Amajuba coal fired power station is not included which means it will still need more coal to operate efficiently and if this proposed mine is granted, it will be able to provide exceptional quality coal which will ultimately curb the loadshedding crisis we are faced with in South Africa.

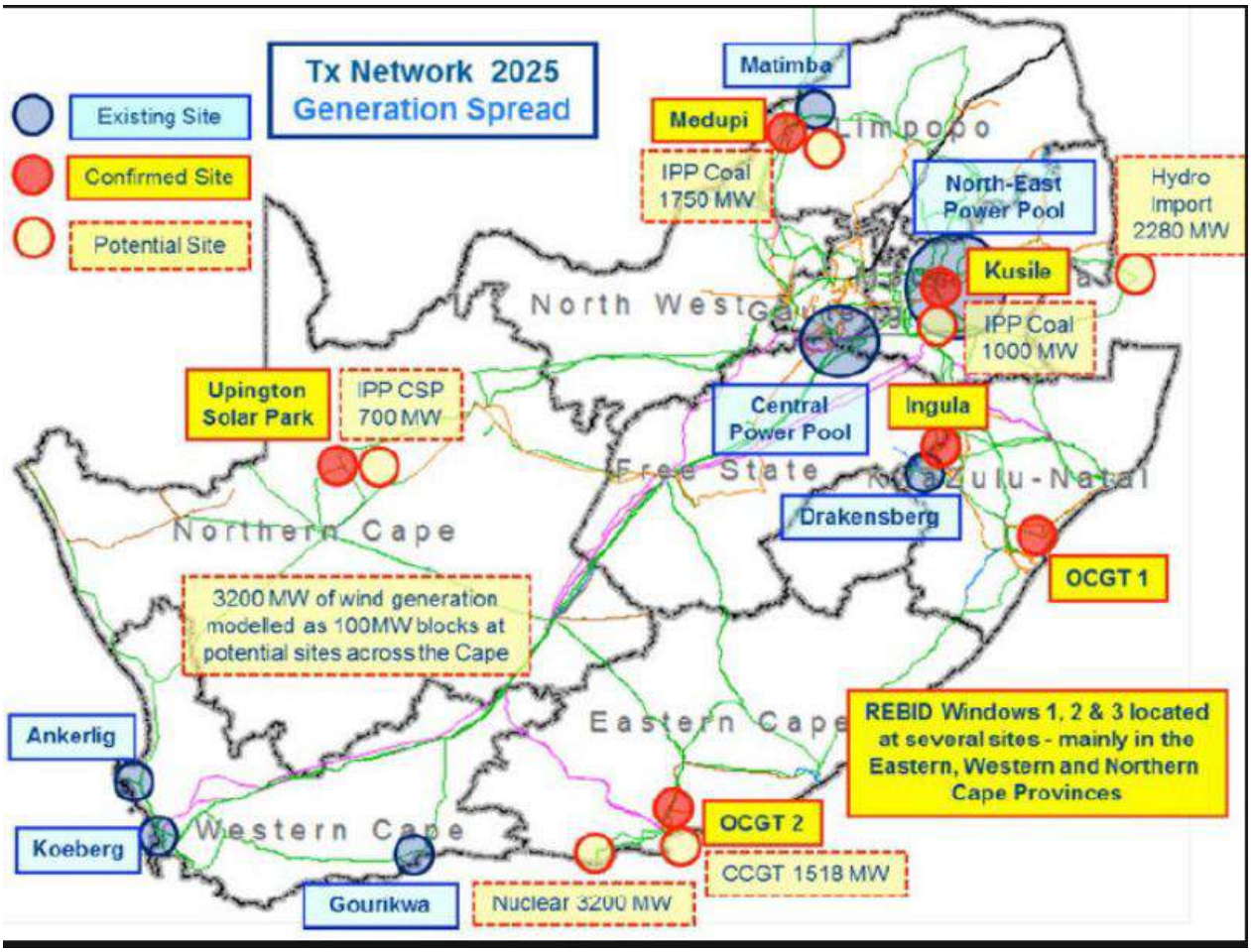


Image 13: Eskom's coal-fired power stations and their installed capacity (South African Coal Sector Report)

Conclusion

According to South African coal sector report, the coal value chain was outlined from the occurrence of coal in the country including resources and reserves to the different uses of coal. The trend analysis show that coal supply has not changed much over the years mainly due to infrastructure constraints. Coal consumption in the transformation sector has also been stable, however declined in the final consumption by other sectors. Coal plays an important role in the South African economy and is the primary energy source for electricity generation. It is also the feedstock for producing a substantial proportion of the country's liquid fuels and provides a considerable source of foreign revenue from exports. Despite an abundant endowment of coal in South Africa, the industry is faced with challenges including supply and infrastructural and its continued use presents other challenges, mainly environmental. The document highlighted some of the steps taken by the South African government in addressing the infrastructure as well as the environmental challenges.

9 PROPOSED DEVELOPMENT FOOTPRINT AT THE APPROVED SITE

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

The proposed alternative was reached after a full evaluation of site sensitivities, including biodiversity studies (see attached biodiversity specialist study on (Appendix 9).

9.1 Details of all considered alternatives

With reference to the site plan provided in Appendix 5. and the location of the individual activities on site, the following details of the alternatives considered are presented.

9.1.1 Location of proposed activity

Mineral resources are by nature very difficult to locate, as it requires extensive prospecting and calculated stock determination; minerals can only be mined where they exist. The exploration conducted by Ingwe Coal Corporation Ltd and Anglo-American Corporation of S.A. Ltd on the farm Leeuwfontein 48 IS has confirmed the availability of a coal resource. Borehole information **(Figure 5)** from the exploration drilling indicates that all seams of the Witbank/Highveld coalfields intersected within the area of interest.

This information is significant as it demonstrates the presence of coal reserves in the proposed mining area. The intersection of all coal seams within the Witbank/Highveld coalfields suggests that the site has the potential for viable coal extraction.

The previous exploration activities by reputable mining companies provide valuable data on the coal seams' thickness, depth, quality, and distribution. This data is crucial in the planning and design of the proposed mining project by Tornowize (Pty) Ltd. It allows the company to assess the economic viability and sustainability of the mining operation.

Moreover, the confirmation of coal reserves in the area strengthens the case for the need and desirability of the proposed coal mining right. It aligns with the existing mining activities in the Witbank Coalfield, which has been a significant production area for coal in South Africa. However, while the availability of coal resources is promising for the mining project, careful consideration of environmental and social impacts should be undertaken. An Environmental Impact Assessment (EIA) has been conducted to assess and mitigate any potential adverse effects on the environment and nearby communities. Sustainable mining

practices and rehabilitation plans must be incorporated to ensure responsible and ethical resource extraction.

By leveraging the information from the previous exploration activities, Tornowize (Pty) Ltd can make informed decisions regarding the development of the coal mining project on the farm Leeuwfontein 48 IS. Proper planning and adherence to regulatory requirements will be crucial in realizing the potential benefits of the project while minimizing its impacts on the environment and local communities.

9.1.2 Type of activity

The proposed coal mining operation at Tornowize will involve a surface mining method known as box-cut mining. This approach has been carefully selected as the most suitable option for this project, and no other alternatives have been considered due to various factors specific to the site and project requirements.Among the transportation options for coal, the decision has been made to utilize trucks for coal transport from the Tornowize mine. This decision is based on several important considerations that support the feasibility and efficiency of this mode of transportation:

1. Site Accessibility: Trucks provide a flexible and versatile mode of transportation, allowing easy access to various parts of the mining site, including areas that might be challenging for other modes of transport.

2. Short-Haul Distance: Since the mining operations will be conducted through a surface box-cut method, the transportation distance for coal from the mine to its designated destination is relatively short. Trucks are well-suited for short-haul transportation.

3. Infrastructure Compatibility: The existing road network and infrastructure in the vicinity of the mine are suitable for truck transportation, minimizing the need for extensive modifications or new construction.

4. Operational Control: Using trucks provides the mine with direct control over the transportation process. This control can lead to efficient scheduling, better coordination with mining activities, and enhanced overall operational management.

5. Flexibility and Adaptability: Trucks offer the ability to adapt to changing production levels and operational requirements. This adaptability is crucial in ensuring seamless coal transportation as the project evolves.

6. **Cost-Effectiveness:** Given the specific characteristics of the project, utilizing trucks for coal transport is expected to be a cost-effective solution when considering factors such as infrastructure investment, fuel consumption, and maintenance.

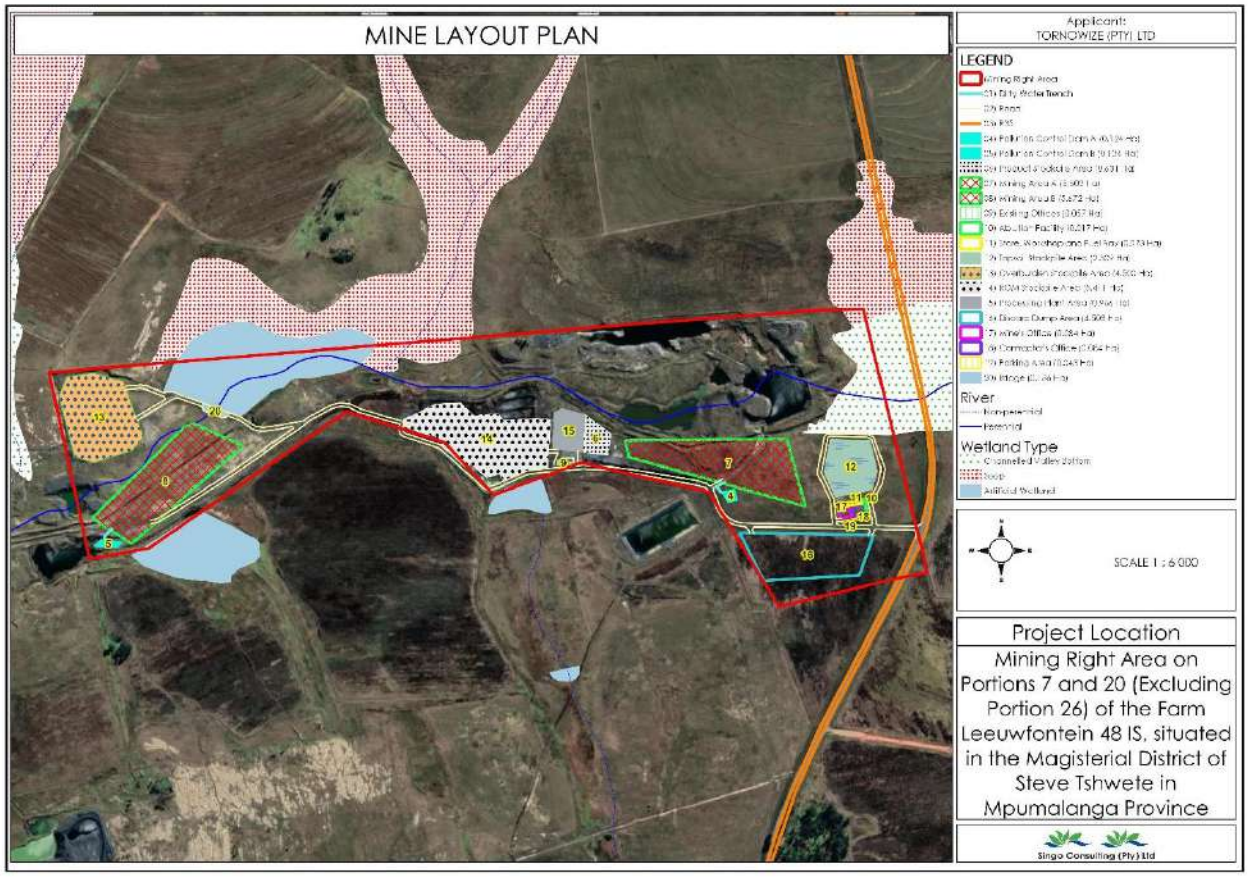
7. **Environmental Considerations:** While truck transportation does emit pollutants, its potential environmental impact can be managed and mitigated through proper maintenance, fuel efficiency measures, and adherence to emissions standards.

The current land use is predominantly mainly grazing (unimproved grasslands) with no cultivation but mining.

9.1.3 Activity design and layout

The design and layout of the mining activity depends on the mining plan to be adopted. Mining design layout must be done in a way that reduces the amount of times a specific material is handled, subsequently reducing the environmental impact. Various designs and layouts for the mining operations were considered and the final layout was developed based on the availability of coal seams, as indicated by on-site prospecting. Infrastructure layout has already been altered to ensure that structures are situated far away from the drainage ways. Therefore, no other alternative layout was considered. The mining layout is designed to optimise the recovery of coal. The location of the box-cut and associated infrastructure area was based on the depth of the coal and a high-level sensitivity analysis. Infrastructure will be placed to avoid water resources and their associated riparian zones as far as possible. The alternatives considered included:

• Alternative 1: Box-cut and associated infrastructure to be located on the Portion 7 & 20 (Excluding Portion 26) of the farm Leeuwfontein 48 IS in Middleburg. (Final Preferred Option)



9.1.4 Mining method

The proposed open-cast mining operations of the Tornowize coal mine project will have positive economic impacts on a local, regional, and national scale. It will result in additional coal, job creation and skills development opportunities. There are two coal mining within 2km radius of the proposed Tornowize coal mine that is Kleinfontein colliery and Bultfontein Colliery, the area that is proposed was mined before in some areas and was not rehabilitated, the proceedings the project will have an advantage on the Middleburg municipality economically and environmentally, after the mining operations rehabilitation will take place and a financial guarantee will be paid to the DMRE before the environmental grant is issued. If the applicant does not proceed with the intended application, another firm may file an application under the MPRDA, Act 28 of 2002. Mining companies will continue to try to extract these coal deposits unless the government deems these regions "NO-GO" for mining and/or the demand for coal falls. The estimated period for which EA is required, is 15 years. This includes construction, mining and closure, and rehabilitation. A period for post-closure management risks will be investigated during the EIA phase.

9.1.5 Location alternatives

The research region was chosen based on the mining coal projects around the area and the availability of coal that can be seen on the surface that is stockpiled within the project area, further the proposed study area is ideal for coal mining, based on the positive findings of the CPR conducted on the region's coal resources. See the attached adjacent coal mining map below.

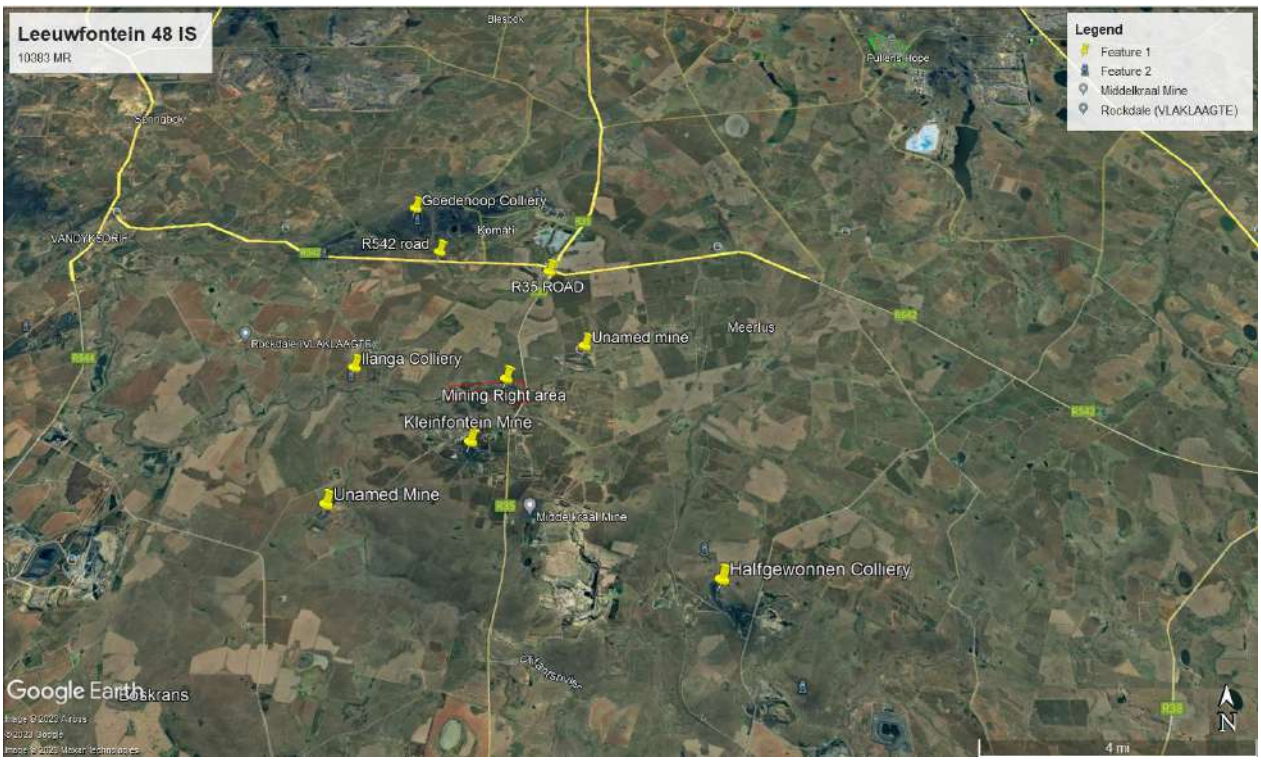


Figure 21: Adjacent coal mines (Google earth, 2023)

9.1.6 Land use alternatives

Due to the past proceeding of coal mining and no rehabilitation within the area no other land-use can be deemed accurate at this moment only mining would be suitable.

9.1.7 Operational aspects of the activity

In terms of operations on the proposed new mining area, operational infrastructure will be situated in a concentrated area where the surface mine will be located. Coal will be mined, crushed and transported to the coal RoM stockpiles. From here, it will be loaded on truck transported to nearest rail-siding or transported directly to the nearest power station. In all instances, common industry practices were selected. Operational alternatives considered include:

- A full wash plant and mine residue facility will only be established as per this EMPR if the coal prices improve to make full beneficiation economically viable.
- In terms of the mine residue facility established on site, integrated disposal versus separate Discard and slurry handling was considered.
- Integrated disposal was opted for, as this will negate the need for separate handling facilities and thus reduce the overall area of disturbance.

- In addition, the fines (slurry) will settle between the cavities in the discard, making the dump less susceptible to spontaneous combustion.
- The Discard forms the main stabilising feature of the dump and the removal of the slurry component (should it be required) will not destabilise the dump.
- The dump can be reclaimed in future as the slurry will increase the dump's overall coal content.

9.1.8 The option of not implementing the activity

The option of not implementing the mining right activity for Tornowize (Pty) Ltd is a significant consideration in the decision-making process. It involves carefully weighing the potential impacts and benefits of the proposed coal mining project against the alternative of not proceeding with the activity. Several factors should be evaluated to assess the desirability of this option. The decision to not implement would avoid the potential environmental impacts associated with coal mining, such as habitat destruction, air and water pollution, and land degradation. This option may align with environmental conservation goals and protect the biodiversity of the region. Not proceeding with the mining right activity would also prevent potential social disruptions to nearby communities. It may preserve livelihoods and cultural heritage, especially as there are concerns about the project's impact on local residents and their way of life.

Assessing the economic implications of not implementing the mining right activity is essential. It may result in the loss of job opportunities and revenue generation that could have been derived from the mining project. The decision should consider the potential economic benefits and drawbacks to the local and regional economy. Evaluating the current and future energy needs of the country and region is crucial. The coal from the proposed mining project is essential for meeting energy demands, not implementing the activity might have implications for energy security and availability. The decision should consider the conservation of coal resources in the Witbank Coalfield. If coal reserves are limited and strategic for the country's energy needs, not proceeding with the mining activity could impact future energy sustainability.

9.1.8.1 The Environmental attributes associated with the sites.

Baseline Environment

a) Type of environment affected by the proposed activity.

10 GEOLOGY

10.1 Regional geology

The main Karoo Supergroup basin covers over 50% of South Africa's surface and consists of five age-based groups, which show a change of depositional environment in time. These groups are the Dwyka (glacial), Ecca (shallow marine and coastal plain), Beaufort (non-marine fluvial), Stormberg (aeolian) and the volcanic Lebombo or Drakensberg groups (Johnson et al., 2006).

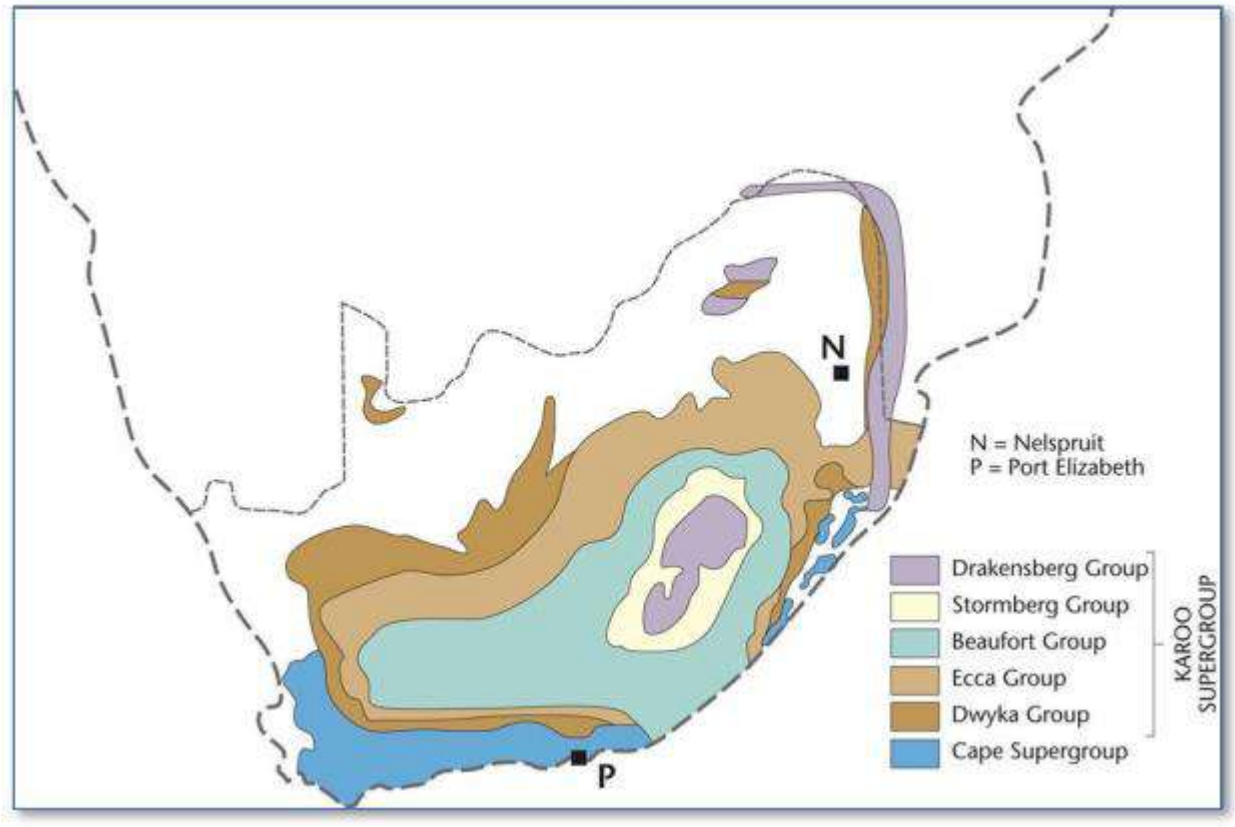


Figure 22: Geological map of the known preserved Karoo Basin in South Africa and adjacent areas (adapted from Catuneanu et al., 2002) and Coalfield of South Africa Map.

In general, the coal deposits in South Africa are hosted in the Karoo Supergroup, which was deposited in the Gondwana basin that covered parts of Africa, Antarctica, South America and Australia. The basal

stratigraphy of the Karoo Supergroup comprises the Dwyka Group, which is a Late Carboniferous to Early Permian (~320 Ma) sequence of glacial and periglacial sediments, including diamictite, till moraine, conglomerate, sandstone, mudstone and varved shale. This is overlain by the Ecca Group, which is an Early to Late Permian (~260 Ma) sequence comprising sandstone, siltstone, mudstone and significant coal seams deposited in a terrestrial basin on a gently subsiding shelf platform. In the surrounding Witbank Coalfield areas, the Ecca Group is overlain by the Beaufort Group, which is Early Triassic (~260 to 210 Ma), comprising multi-coloured mudstone and sandstone with only minor coal accumulation, and was deposited in a fluvial environment. The Molteno Formation rests unconformably on the Beaufort Group and comprises Late Triassic (~210 Ma) coarse, immature sandstone with minor argillaceous layers derived from braided streams. This, in turn, is overlain by the Elliot Formation, which consists of red mudstone and sandstone, and the Clarens Formation comprising Aeolian sandstone. At the top of the Karoo Supergroup stratigraphy is the Drakensburg Group, which comprises Early to Middle Jurassic (~180 Ma) flood basalts.

10.2 Ecca Group

The proposed Mining Project Area falls in the Ecca Group of the Karoo Supergroup. The Ecca Group, which is of Permian in age, comprises sixteen formations, reflecting the lateral facies changes that characterises this succession. Of these sixteen formations, two are of great interest to this study, because they occur in the project area (mainly the Volksrust and Vryheid formations).

Witbank Coalfield

The proposed project area is situated in the Central Block of Witbank Coalfields. The coalfield lithology comprises sediments of the Vryheid Formations of the coal-bearing Ecca Group, Karoo Supergroup. The sediments have been deposited on undulating pre-Karoo age basement, which had a significant influence on the nature, distribution and thickness of the sedimentary formations and coal measures. The geology of the study area is dominated by near horizontally bedded successions of shales, sandstones and coal layers. The Witbank Coalfield was first exploited in 1895 and became the most significant production area in South Africa supporting many collieries. Six coal seams (numbered 1 through 6 from the base upwards) are contained in a 70m-thick succession comprising dominantly of sandstone with subordinate siltstone, mudstone and shale (Vryheid Formation). The partings between the seams are remarkably constant, although seam splitting is common.

Vryheid formation

The majority of the economically extracted coal in South Africa occurs in rocks of the Vryheid Formation, which ranges in thickness in the MKB from less than 70.0 m to over 500.0 m. It is thickest to the south of the towns of Newcastle and Vryheid, where maximum subsidence took place (Du Toit, 1918; Cadle, 1975; Whateley, 1980a; Stavrakis, 1989; Cadle et al., 1982) and where the basin was the deepest. The No. 2 Seam Sequence (Figure 9) includes the succession from the top of the basement to the top of the No. 2 Seam, which may be up to a maximum development of 60 m in places (Le Blanc Smith, 1980a)

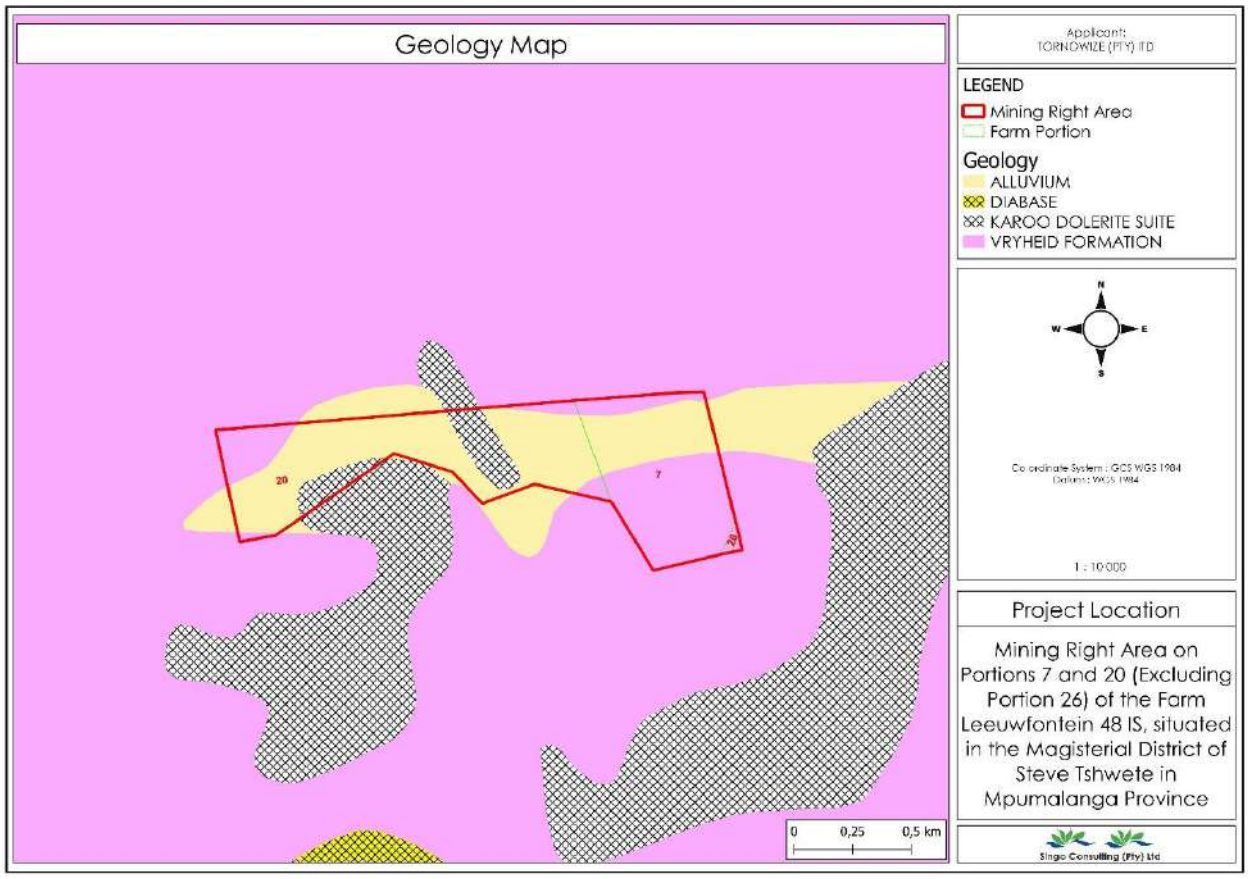


Figure 23: A Simplified geological formations map and the stratigraphy section (Below) of the area of interest.

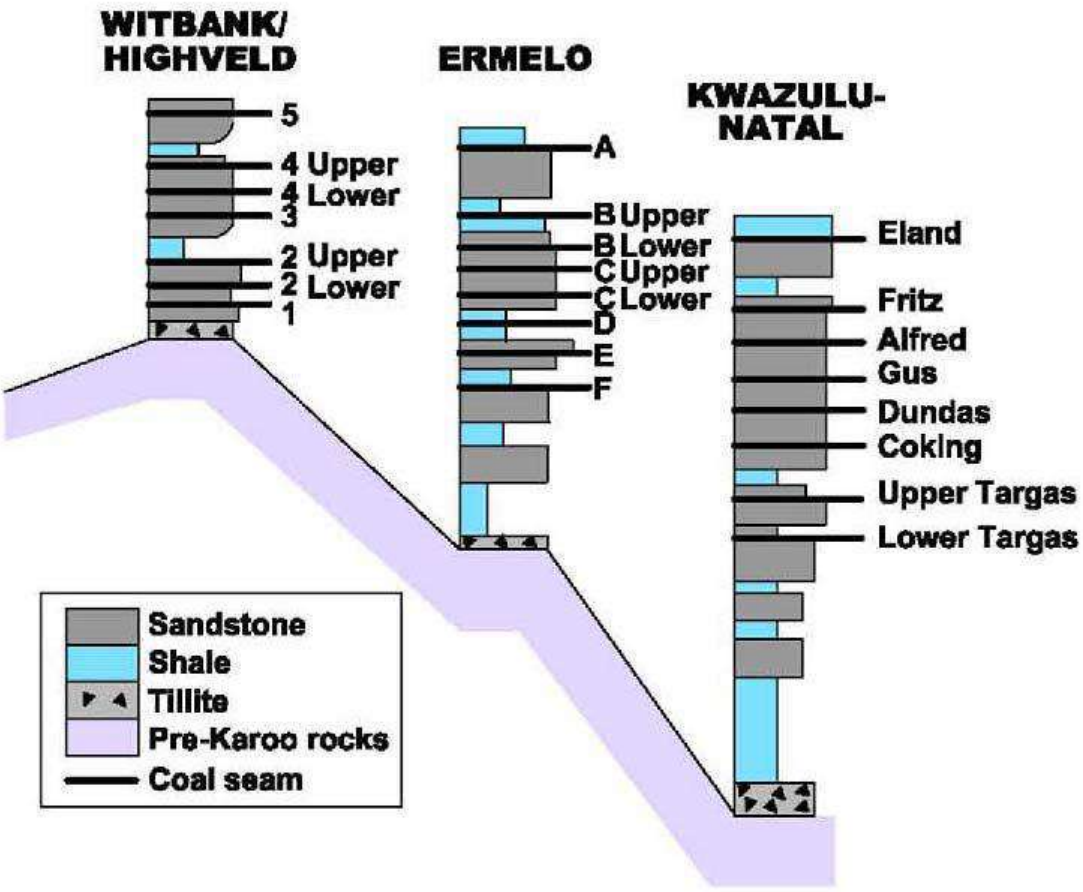


Figure 24: A typical representation of coal seams in the Witbank Coalfield (Shown in a red box)

The distribution and attitude of the No.1 and 2 seams is largely determined by the pre-Karoo topography and all seams are controlled by the current erosion surface. Generally, the No.1, 2, 4 and 5 seams are considered economic based on seam thickness and quality. Intrusive dolerite dykes and sills are ubiquitous and devolatilization of the coal seams can be significant. The area is underlain by sequences of sedimentary rocks of the Ecca Group which represent reworked glacial tillite. They rest unconformably on an uneven floor of older pre-Karoo rocks composed of granite, gabbro, diabase and felsite.

Mineral Map

Coal mineral maps typically show the distribution and location of coal deposits or occurrences within a specific region. These maps are important for identifying areas of potential coal resources and for planning purposes in the mining industry. As shown on Figure 19, the mining right area is situated within the Witbank coalfield.

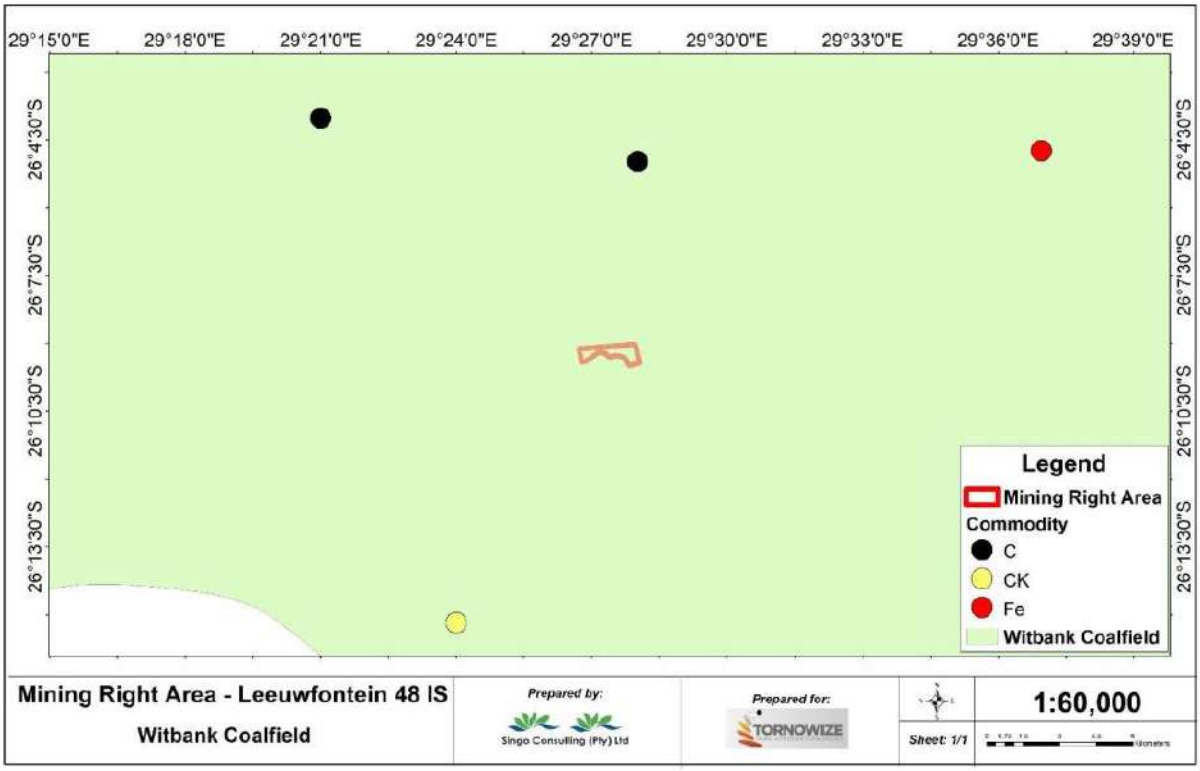


Figure 25: Mineral Map

Dolerite Activity

Dolerite intrusions occur in the area of interest (see image). This was also witnessed during exploration drilling, BH01, BH02, BH03, BH04, BH05 and BH07 intercepted a dolerite.

Image 14: Dolerite on BH04

10.3 Borehole Lithology

Borehole lithology refers to the description of the rock types and layers encountered during drilling of a borehole. The lithology of a borehole is determined by examining the rock cuttings or core samples retrieved from the borehole. This information is important for understanding the geology and structure of the subsurface, as well as for identifying potential resources such as coal. Borehole lithology is typically described in terms of the dominant rock types and their characteristics, such as color, texture, mineral composition, and structure. The thickness and depth of each layer is also recorded, along with any changes in the lithology or the presence of geological features such as faults or fractures. The geologic data of each borehole was recorded on the Log sheets. These data include information about the rock types, and lithology.

Log sheets are important for several reasons:

- They provide a detailed record of the geological data collected during drilling, which we need to create cross-sections, and other types of geological models.
- Log sheets were also useful to interpret the geology of the site.

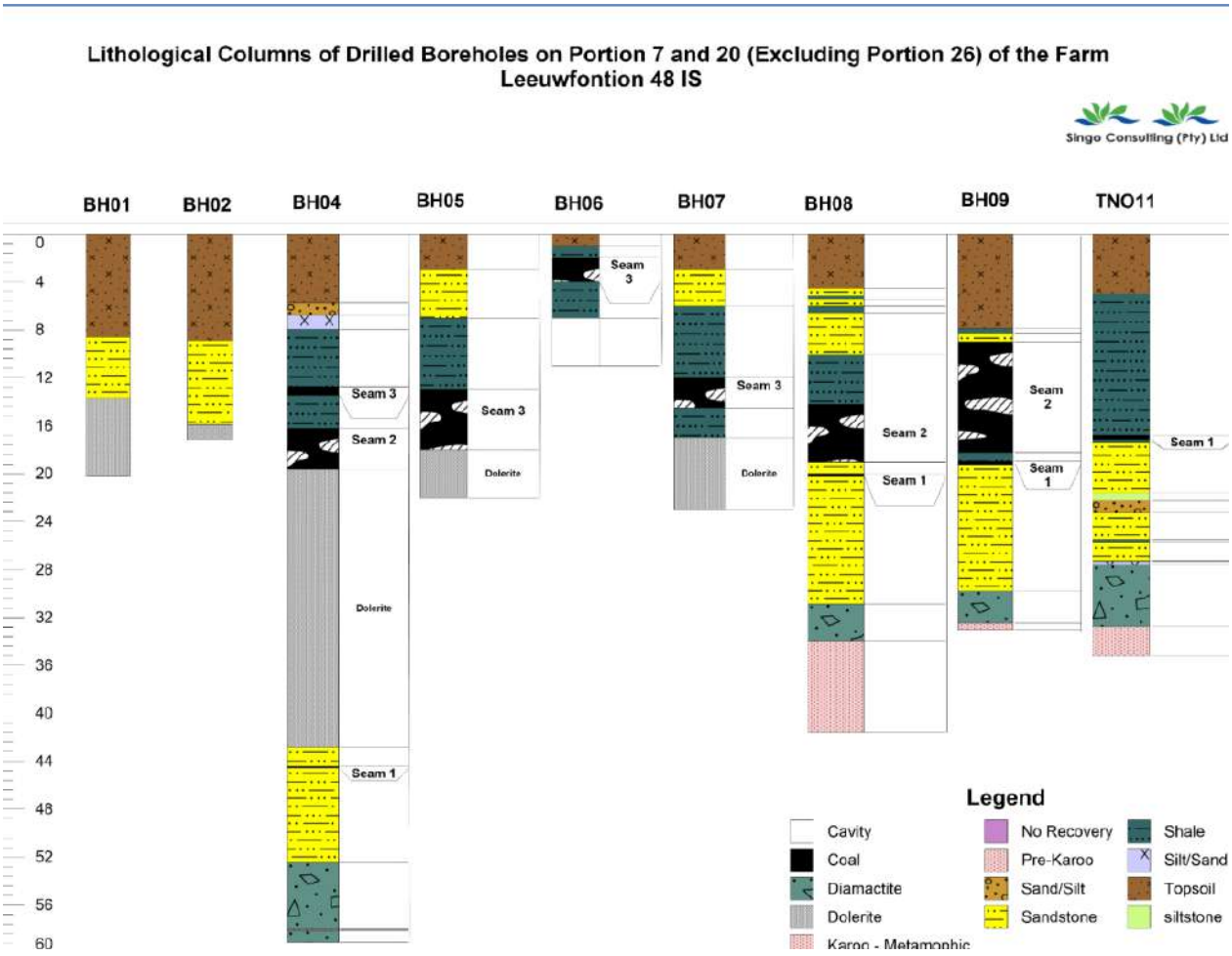


Figure 26: Boreholes Correlation

10.4 Climate

Climate is the state of the atmosphere over long time periods, such as over years, decades, centuries or greater and weather is defined as atmospheric conditions of an area over a short period of time (Naomi, 2004). Climate for the purpose of the study is chosen based on the fact that it does not change over a long period of time whereas weather conditions fluctuate more rapidly, and its data cannot be relied upon. The climate here is mild, and generally warm and temperate. According to Köppen and Geiger, this climate is classified as Cwb. In Steve Tshwete:

Summer (December to February): During the summer months, temperatures can range from warm to hot. Average daytime temperatures often reach the high 20s to mid-30s degrees Celsius (around 77°F to 95°F), with occasional heatwaves bringing temperatures even higher. Summers are generally the wettest season, with frequent thunderstorms and rainfall.

Autumn (March to May): Autumn is a transitional season, with temperatures gradually cooling down. Daytime temperatures during this period usually range from the high teens to low 20s degrees Celsius (around 68°F to 77°F). Rainfall decreases as the season progresses.

Winter (June to August): Winters in Steve Tshwete Local Municipality are generally mild with cool temperatures. Daytime temperatures typically range from the low to mid-20s degrees Celsius (around 68°F to 77°F), while nighttime temperatures can drop to single digits or low teens (around 50°F). Winter is generally dry, with little to no rainfall.

Spring (September to November): Spring marks the transition from winter to summer. Temperatures gradually warm up, and daytime temperatures can range from the high teens to mid-20s degrees Celsius (around 68°F to 77°F). Rainfall increases towards the end of spring.

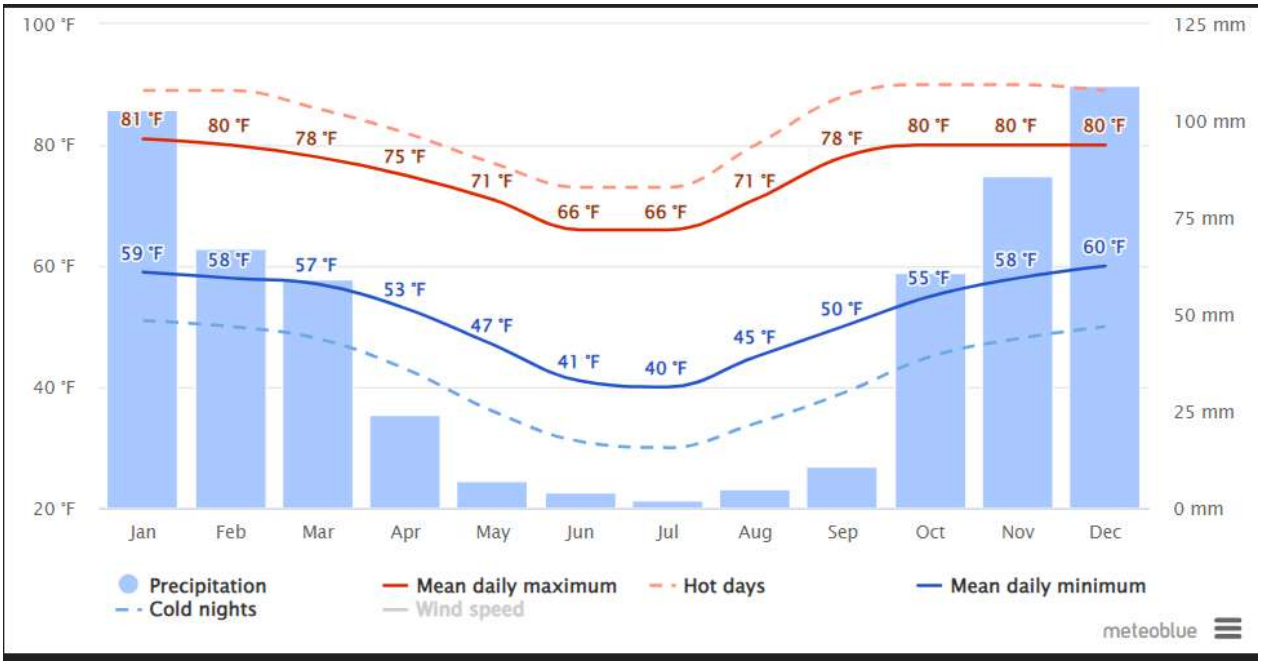


Figure 27: Average precipitation and temperature of Steve Tshwete (https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/middelburg_south-africa_976361)

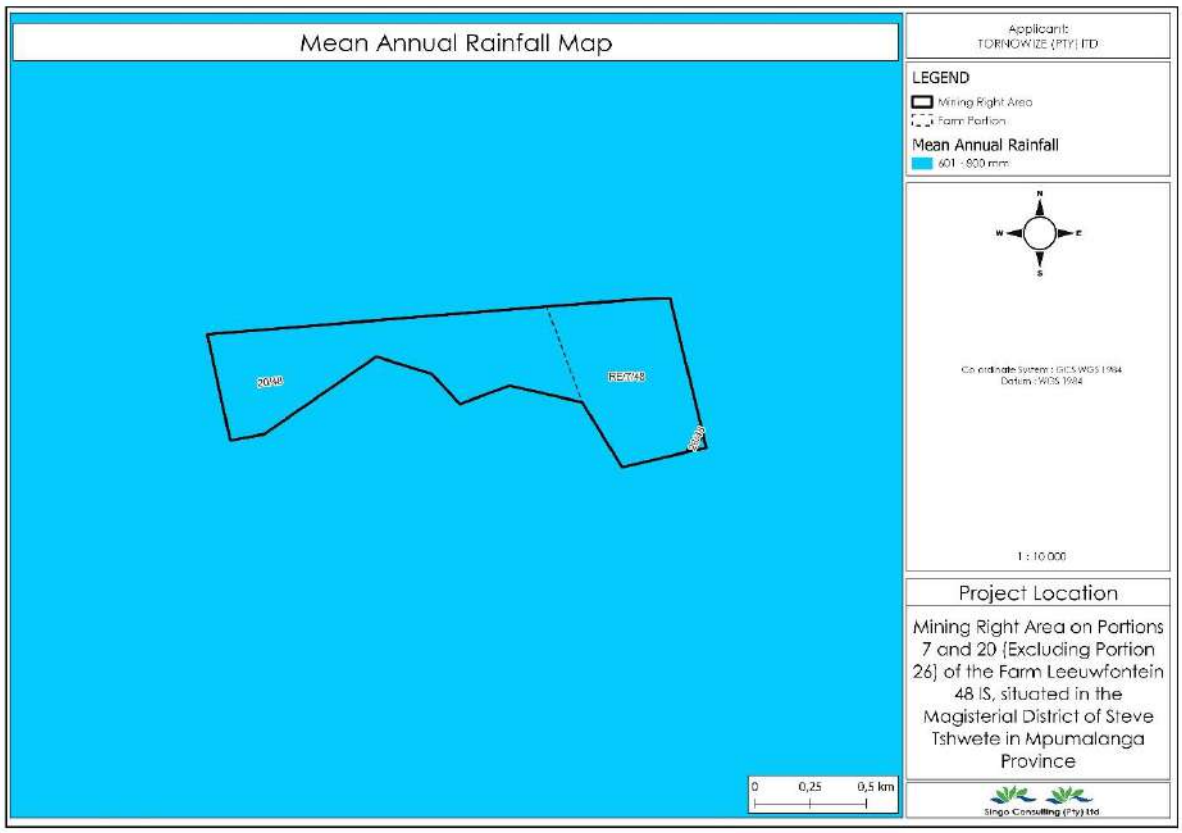


Figure 28: Mean Annual rainfall map (source: Singo consulting (Pty) Ltd)

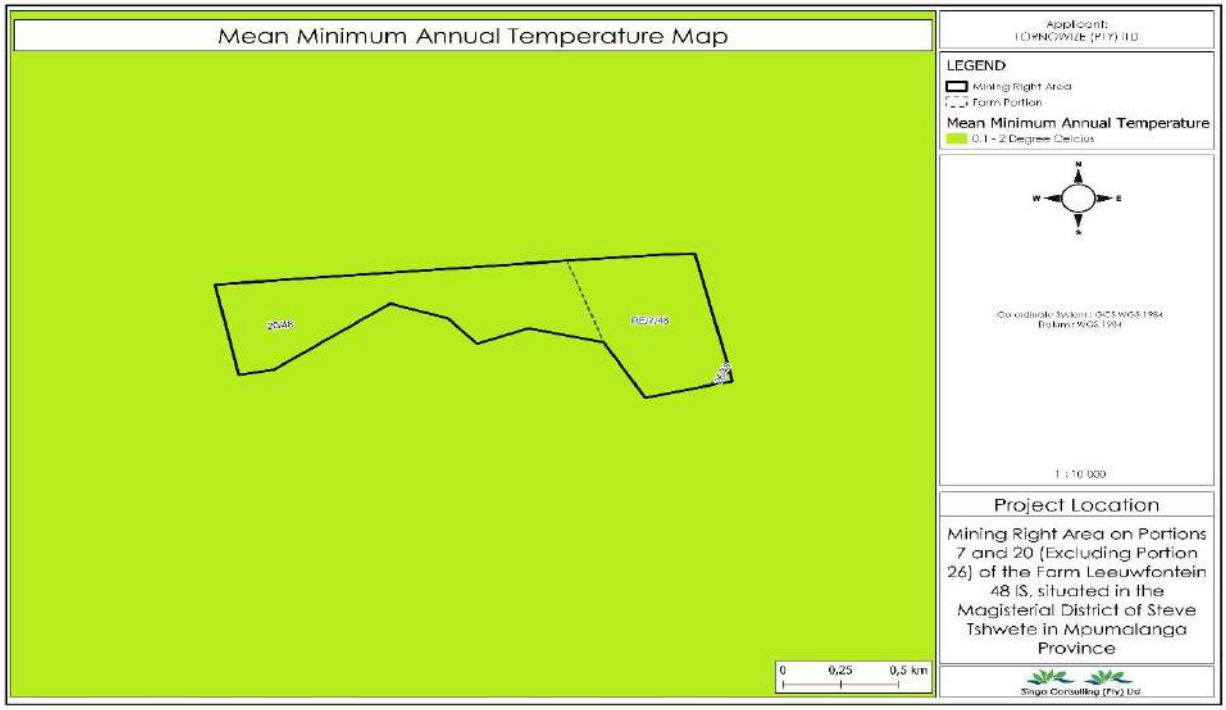


Figure 29: Mean Annual Temperature map (source: Singo consulting (Pty) Ltd)

10.5 Topography and Drainage

Topography

The topology of the area is illustrated below by Figure 31 below. A Topographic map is a map which indicates, to scale, the natural features of the Earth's surface, as well as human features, with features at the correct relationship to each other (Oxford Dictionary; 2020). The topography map other than showing landform features, rivers, and associated water resources, it also shows the height above sea level with the use of contour lines. Contour lines are an Imaginary line on the ground surface joining the points of equal elevation.

In this environmental project, topography is used to determine how surface water flows during rainy seasons or how it would flow during the existence of the project. The topography also influences groundwater vulnerability, as topography also influences run-off and infiltration.

The topography of the study will be analysed based on its slope types and landforms observed onsite as well as seen on Figure 30. The study area is located at an elevation that ranges between 1555 mamsl to 1565 mamsl. with elevation descending towards the northern direction. The study area is situated on a gentle steep slope according to topology map in figure below.

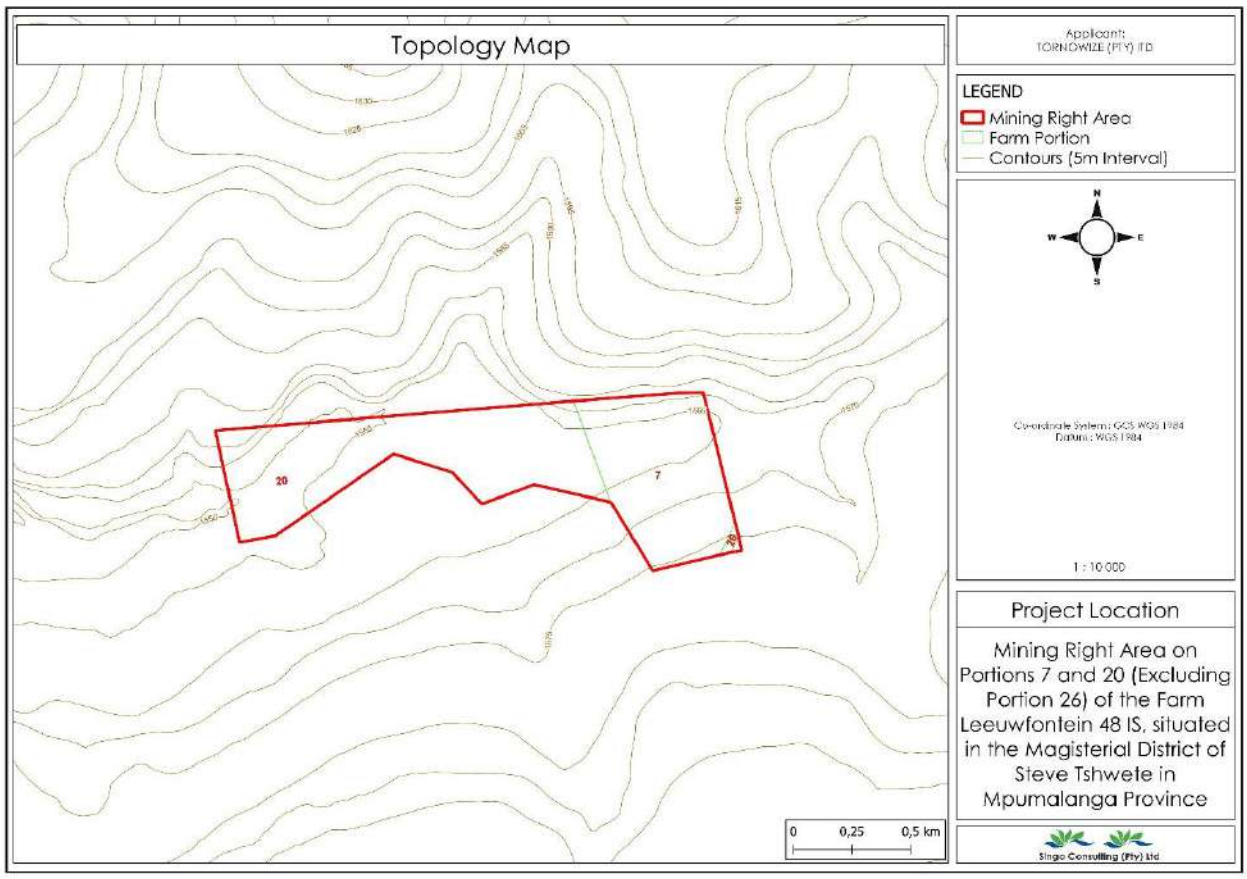
Influence of Slope on Groundwater Contamination

Slope of an area plays a major role in the transport of liquid or solid contaminants. In the context of the study area, one slope type was identified and observed during the site assessment. The topography of the study area influences the surface water and groundwater contamination. As the gentler the slope is, the more residence time of the contaminants.

Landforms identified in the study area

- Valleys: Valleys are depressed areas of land–scoured and washed out by the conspiring forces of water or gravity. The valley at an elevation between1595 mamsl towards the northeastern direction along the boundary of the study area was identified and another identified valley is towards the western direction at an elevation of 1635 mamsl.

The identified valleys influence groundwater contamination through channelling of contaminants, which will carry them to the nearby streams and or wetlands identified



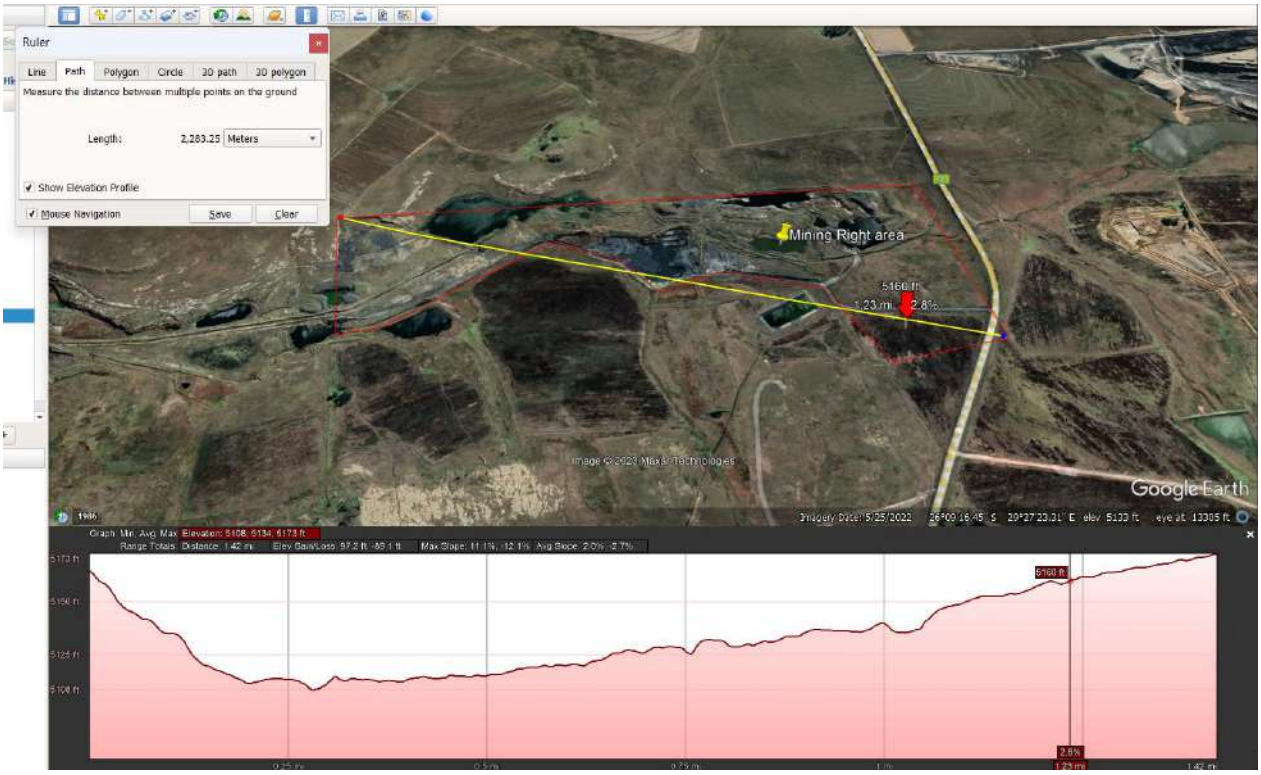


Figure 30: Topology map of the study area and Elevation profile of a project area (source: Singo consulting (Pty) Ltd)

Figure 31: Topography observed on site (Site Assessment, 2023)

Drainage

The hydrology surrounding the proposed area is of vital importance. In this context hydrology is all the surface waters appearing within and nearby the proposed project area, where a potential to be impacted upon by the project existence. The hydrology map, illustrates that the following water bodies exists within and nearby the project area:

- Seep wetlands: Seep wetlands are defined as wetlands that occur in area where the groundwater reaches the surface. The wetland occur in various locations throughout the mining right area. In the northern direction at an elevation of 1565 mamsl. The water in the wetland is flowing towards the northern direction from south-western direction.

- Non-perennial: non-Perennial rivers are rivers that flow seasonally, such as summer. The rivers flow from an area of higher elevation to an area of lower elevation. The stream flows towards the northeastern direction. The perennial river in the study area is associated with the seep wetland.

Figure 32: Seep wetland identified.

- Dam: The dam was identified within the study area.

Figure 33: Wetland identified as a Dam.

Drainage pattern in the study area

The drainage pattern observed within the study area is dendritic pattern.

- **Dendritic Pattern:** The dendritic pattern develops when the river channel follows the slope of the terrain often found in mountainous areas. It is the most common form of drainage pattern and looks like the branching pattern of a tree when joined by tributaries. The pattern is made by non-perennial rivers found within the mining right area, as seen on figure 34.

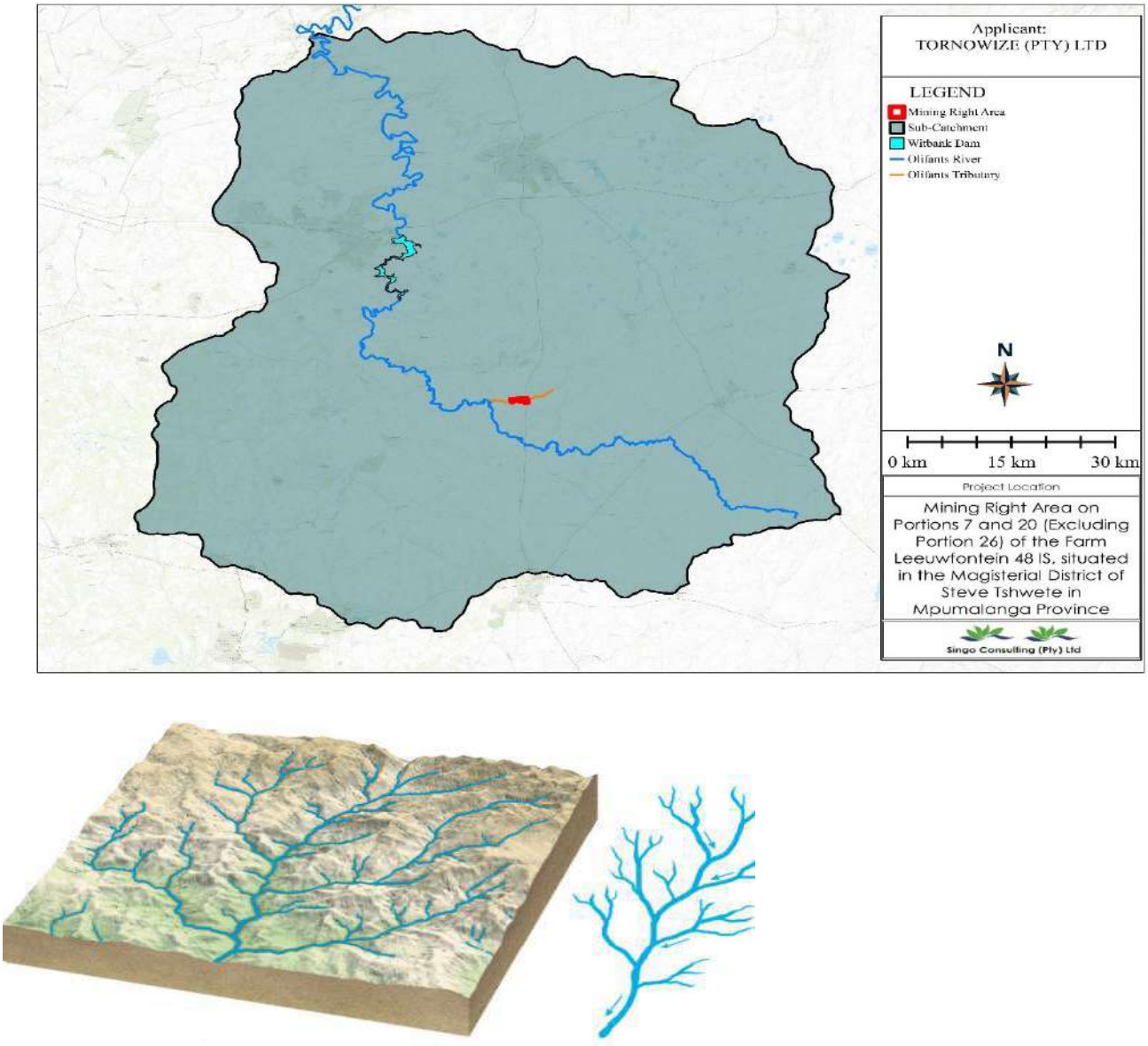


Figure 34: Drainage Map & Pattern (Singo Cnsulting)

The identified waterbodies onsite, also influence the quantity of groundwater in the area through recharge, and wetlands identified serve as habitats and source of water.

There will be procedures and guidelines put in place for this project to avoid the risk of water contamination through the identified water bodies such as ensuring strict management of waste material and buffering of 100 m. It will be advised on more mitigation measures to ensure the waterbodies as seen on the hydrology map are not contaminated. As shown in figure 36, a 100m buffer will be applied around the water bodies present within the mining right area, refer to figure 37 for actual pictures that were taken onsite.

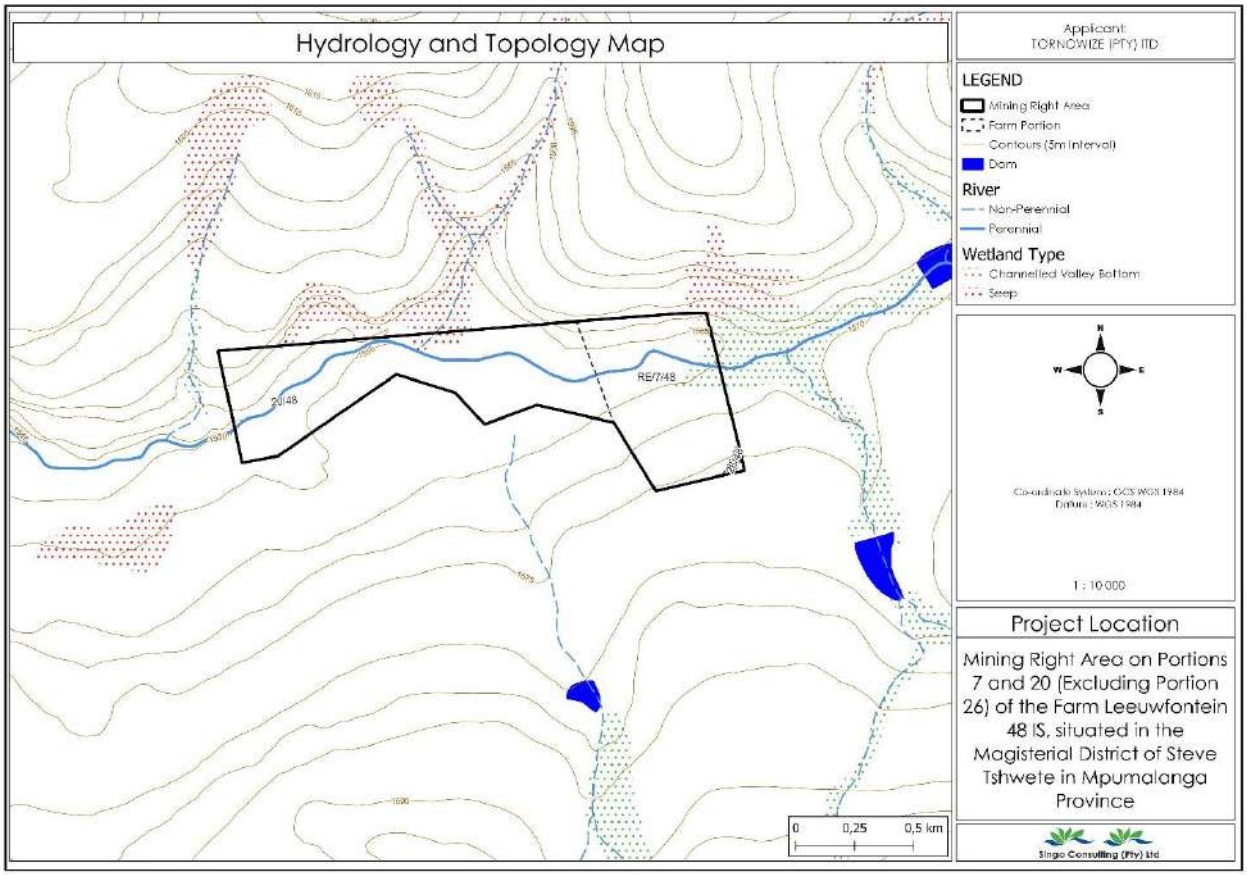


Figure 35: Hydrology and Topology of the study area (source: Singo consulting (Pty) Ltd)

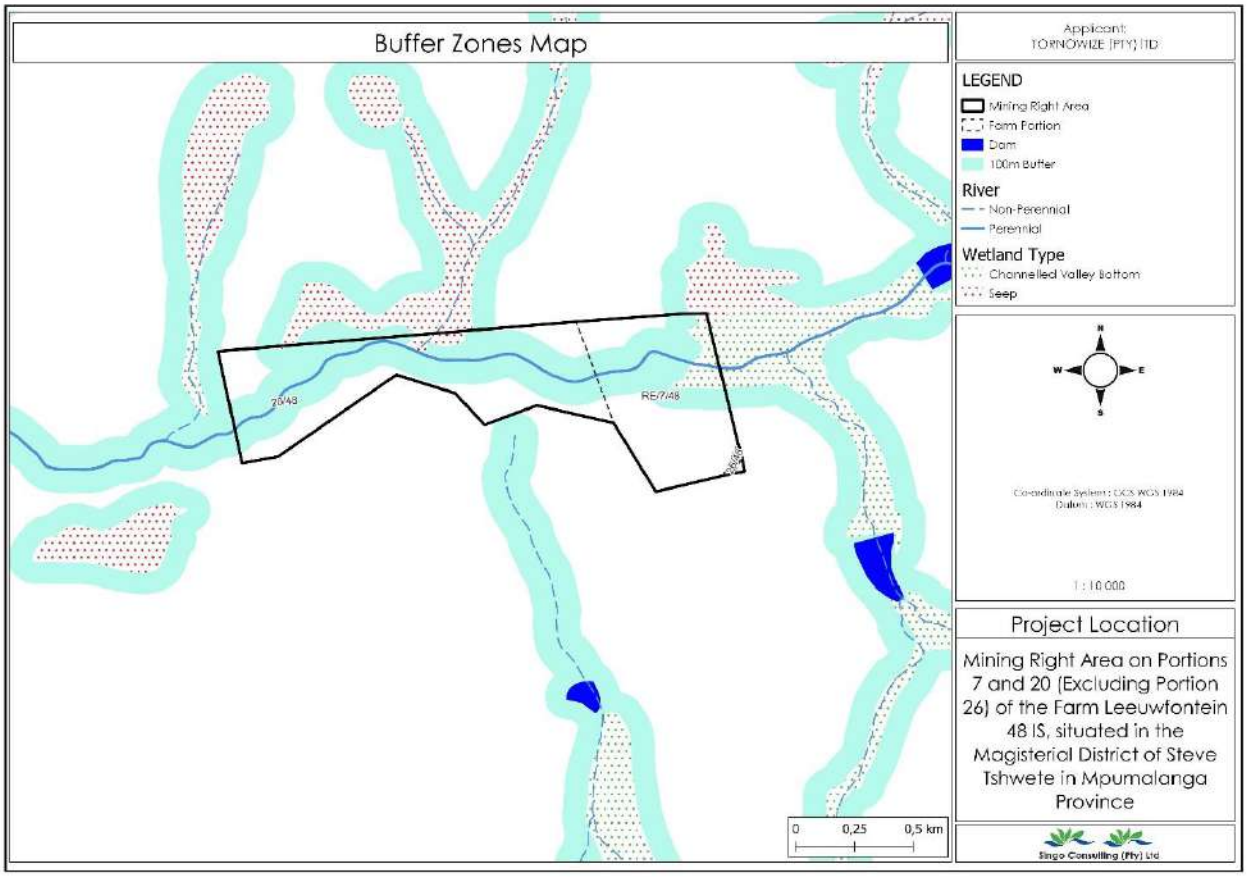


Figure 36: Buffer map (source: Singo consulting (Pty) Ltd)

Figure 37: Water bodies within the project area

10.6 Catchment Information

The Olifants River originates at Trichardt to the east of Johannesburg and initially flows northwards before gently curving in a generally eastward direction through the Kruger National Park and into Mozambique, where it joins the Limpopo River before discharging into the Indian Ocean. The Olifants (WMA) corresponds with the South African portion of the Olifants River catchment (excluding the Letaba River catchment). It falls within three provinces, viz. a small part to the west within Gauteng, with the southern part mainly in Mpumalanga and the northern part in Limpopo Province. The main tributaries are the Wilge, Elands and Ga-Selati Rivers on the left bank and the Klein Olifants, Steelpoort, Blyde, Klaserie and Timbavati Rivers on the right bank. The study area falls on Quaternary Catchment B11B under the Olifants Water Management Area.

Table 7: WRC of 2012, Water management area, MAP and QC

Water management	Quaternary catchment	Catchment Area (km^2)	MAP (mm)	Evaporation Zone
Olifants water management	B11B	435	687	4A

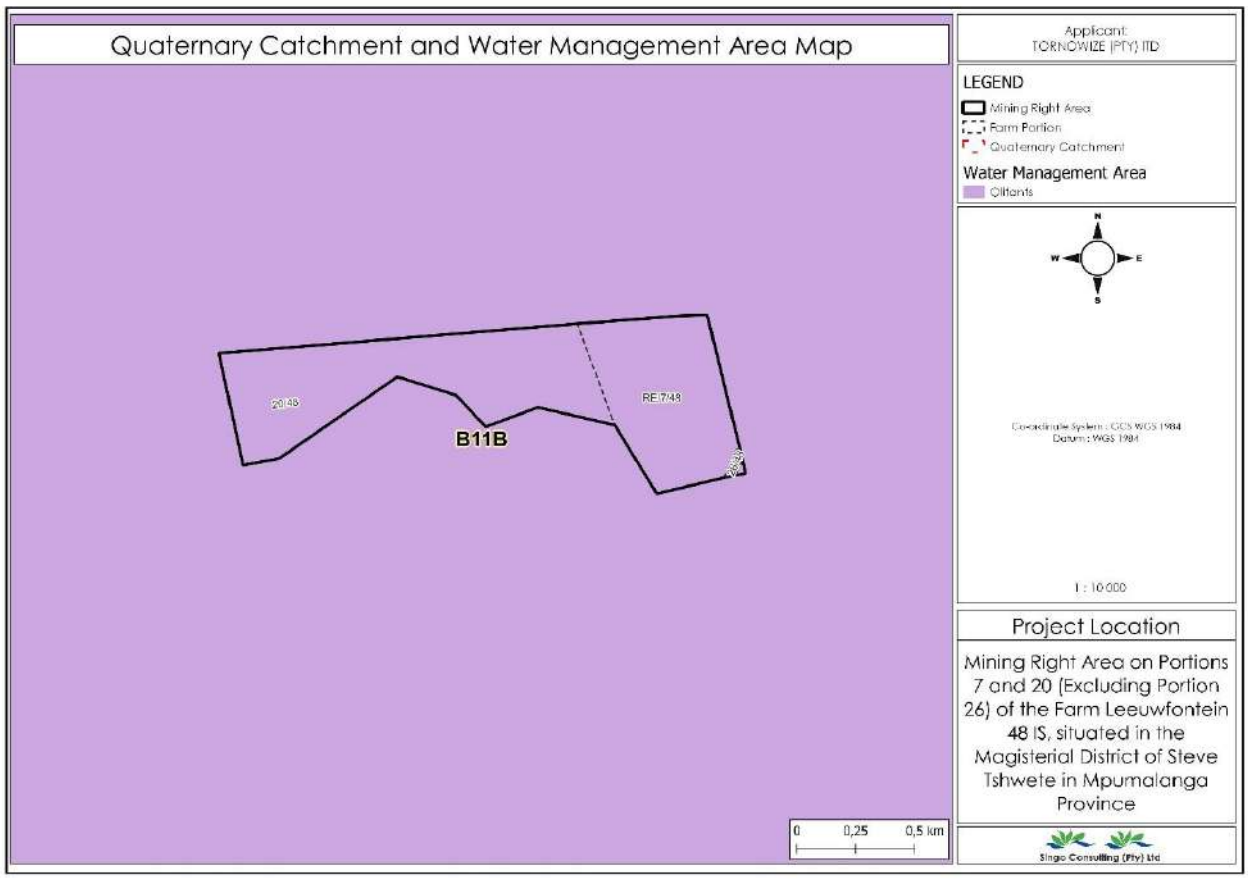


Figure 38: Quaternary Catchment and Water (source: Singo consulting (Pty) Ltd)

10.7 Soil forms present in the study area.

The soil class below, shows that the mining right area is largely covered with the red or yellow structureless soils with a plinthic horizon and Association of classes 1 to 4: undifferentiated structureless soils

Red or yellow structureless soils with a plinthic horizon:

Red or yellow structureless soils with a plinthic horizon are a type of soil found in certain tropical and subtropical regions. These soils are characterized by their distinct reddish or yellowish coloration, which is indicative of the presence of iron oxide minerals. The structureless nature refers to the lack of well-defined soil aggregates or granules. The key feature of these soils is the presence of a plinthic horizon. A plinthic horizon is a subsurface layer that is characterized by the accumulation of iron and aluminum oxides, typically occurring in a clay-rich layer. This horizon is formed due to the alternating wetting and drying cycles in the soil, which leads to the migration and deposition of iron and aluminum compounds.

The plinthic horizon can have a significant impact on soil properties and drainage. It often results in poor soil drainage, leading to waterlogging during wet periods and restricted water availability to plants during dry spells. As a result, these soils can be challenging for agriculture and other land uses that require well-

drained soils. In terms of environmental implications, these soils may have certain ecological significance, as they can support unique plant communities adapted to their specific waterlogged conditions. Additionally, the presence of iron and aluminium compounds in the plinthic horizon may contribute to the overall nutrient dynamics and biogeochemical processes in the ecosystem.

Red apedal soils

These soils have a structure that is weaker than moderate blocky or prismatic in the moist state, if structure is borderline, CEC (NH4OAc, pH7) per kg soil is less than 11cmol (+)/kg soil. These soils are non-calcareous in any part of the horizon which occurs within 1500mm of the soil surface but may contain infrequent, discrete, relict lime nodules in a non-calcareous soil matrix. It does not have alluvial or aeolian stratifications. The B horizons that have uniform colours, falling within the range defined as red and that in the moist state, lack well-formed peds other than porous micro-aggregates, qualify as red apedal. The concept of these macroscopically weakly structured or structureless materials embraces that kind of weathering that takes place in a well-drained oxidizing environment to produce coatings of iron oxides on individual soil particles (hence the diagnostic red colours) and clay minerals dominated by non-swelling 1:1 type.

Yellow apedal soil

This horizon does not have grey colours in the dry state as defined for the E horizon. Although colour must be substantially uniform, some variability is permitted, for example mottles or concretions which are insufficient to qualify the horizon as a diagnostic plinthic B, faunal reworking may also result in acceptable colour variegations. It is non-calcareous within any part of the horizon which occurs within 1500mm of the surface but may contain infrequent, discrete, relict lime nodules in a non-calcareous soil matrix. Does not have alluvial or aeolian stratifications., directly underlies a diagnostic topsoil horizon or an E horizon. Yellow-brown apedal B horizons occur over approximately the same climatic spread as their red counterparts and so are also very widely distributed throughout the country. They may be found on all types of parent material.

Association of classes 1 to 4: Undifferentiated structureless soils

The association of classes 1 to 4 refers to undifferentiated structureless soils, a classification used in soil science to describe certain soil types that lack well-defined horizons or layers. These soils are typically found in regions with specific geological and environmental conditions.

Undifferentiated structureless soils are characterized by the absence of distinct layers, such as horizons or horizons with little variation in color, texture, or composition. As a result, it can be challenging to differentiate between different soil layers within this type of soil. Class 1 to 4 refers to the varying degrees

of undifferentiation within these soils, with Class 1 having the least differentiation and Class 4 having slightly more differentiation. In other words, Class 1 undifferentiated structureless soils show the least variation in soil properties and characteristics, while Class 4 undifferentiated structureless soils exhibit slightly more differentiation but still lack well-defined horizons.

These soils can have diverse origins and may result from various geological and environmental processes. Factors such as weathering, erosion, deposition, and organic matter content can influence the development of undifferentiated structureless soils.

Figure 39: Soil Classes (source: Singo consulting (Pty) Ltd)

10.7.1 Soil Chemistry

The main aim for soil sampling is to identify the soil moisture, colour, consistency, structure, soil type and origin (MCCSSO) of the soil.

Table 8: Site pictures and description

Site pictures and equipment's	Description
The equipment's used included: • Auger/TLB • plastics, • shovel, • GPS,	Operation of soil Sampling Selecting an acceptable sampling location, then collecting a soil sample with an Auger/ TLB while identifying the different layers of soil in the area are all part of the method. The soil samples are stored in various plastics and recorded before being sent to the lab for analysis. Some of the types of analyses undertaken include pH

• Buff tags, • Sampling forms. • Cable ties	(alkalinity and acidity), Soil Texture Composition, and Chemical Compositions.
 GPS Coordinates	The Auger was used to remove ground samples and capture the many different strata found underground. Soil samples were collected to determine chemical composition, soil texture, pH level, and soil nutrients.

10.7.2 Pre-mining land capability

The Land capability classification is one of several interpretation groups that was made for agricultural purposes. As with all the interpretation groups, the land capability classification starts with one soil-mapping unit, which is the building block of the system.

The land capability is classified into grazing, arable and wilderness. In this classification the arable soils are grouped according to their potentialities and limitations for sustained production of the common cultivated crops that do not require specialized site conditioning or site treatment. Nonarable soils (soils unsuitable for long time sustained use for cultivated crops) are grouped according to their potentialities and limitations to produce permanent vegetation and according to their risks of soil damage if mismanaged. The land capability of the proposed area is classified as an arable land and grazing. Arable land is any land capable of being ploughed and used to grow crops.

Approximately 97% of the mining right area (Figure 40) is situated within the arable land capability group and the remaining portion is situated under the grazing land capability class.

The capability grouping of soils is designed:

0. To help landowners and others use and interpret the soil maps,
1. To introduce users to the detail of the soil map itself, and
2. To make possible broad generalizations based on soil potentialities, limitations in use, and management problems'

The capability classification provides three major categories of soil groupings:

0. Capability unit,
1. Capability subclass, and
2. Capability class.

The first category, capability unit, is a grouping of soils that have about the same responses to systems of management of common cultivated crops and pasture plants. Soils in any one capability unit are adapted to the same kinds of common cultivated and pasture plants and require similar alternative systems of management for these crops. Long-time estimated yields of adapted crops for individual soils within the unit under comparable management do not vary more than about 25 percent.

The second category, the subclass, is a grouping of capability units having similar kinds of limitations and hazards. Four general kinds of limitations or hazards are recognized: (1) Erosion hazard, (2) wetness, (3) rooting zone limitations, and (4) climate.

The third and broadest category in the capability classification places all the soils in eight capability classes. The risks of soil damage or limitations in use become progressively greater from class I to class VIII. Soils in the first four classes under good management can produce adapted plants, such as forest trees or range plants, and the common cultivated field crops ^ and pasture plants. Soils in classes V, VI, and VII are suited to the use of adapted native plants. Some soils in classes V and VI are also capable of producing specialized crops, such as certain fruits and ornamentals, and even field and vegetable crops under highly intensive management involving elaborate practices for soil and water conservation. Soils in class VIII do not return on-site benefits for inputs of management for crops, grasses, or trees without major reclamation.

The grouping of soils into capability units, subclasses, and classes is done primarily based on their capability to produce common cultivated crops and pasture plants without deterioration over a long period of time. To express suitability of the soils for range and woodland use, the soil mapping units are grouped into range sites and woodland-suitability group.

Table 9: Relationship of soil-mapping unit to capability classification (Source: Kellogo, 1961)

Soil-mapping unit	Capability unit	Capability subclass	Capability class
A soil mapping unit is the part of the landscape' that has the same qualities and characteristics and whose limits are static by accurate definitions. Within the cartographic limitations and considering the purpose for which the map is made, the soil mapping unit is the unit at which the highest number of accurate statements and predictions can be done. The soil mapping units gives more information about the details of soils. The basis for all the interpretation is the basic mapping units. They provide the information required for the development of capability units, forest site groups, crop suitability groups, range site groups, engineering groups, and other interpretation groups. The most specific management ways and estimated yields relates to the individual mapping unit.	A group of one or more individual soil mapping units having similar potentials and continuing limitations or hazards is termed as capability unit. The soils in a capability unit are sufficiently uniform to (1) produce similar kinds of cultivated crops and pasture plants with similar management practices, (2) require similar conservation treatment and management under the same kind and condition of vegetative cover, (3) have comparable potential productivity. The capability unit condenses and simplifies soils information for planning individual tracts of land, field by field. Capability units with the class and subclass furnish information about the degree of limitation, kind of conservation problems and the management practices needed.	are the groupings of capability units that have the same major conservation problem are called Subclasses. The problems include— 1.E>Erosion and runoff. 2. W>Excess water. 3.S>Root-zone limitations. 4.C>Climatic limitations. The information about the involved limitations and the kind of problems related to conservation are provided by capability Subclass. The information about the map user relating to the limitation degree and the kind of problems involved in broad program planning, conservation need studies, and similar purposes are provided by the class and sub class.	Capability classes are groups of capability subclasses or capability units that have the same relative degree of hazard or limitation. The limitation and risks of soil damage in use become more from class I to class VIII. The capability classes are useful as a means of introducing the map user to the more detailed information on the soil map. The classes show the location, amount, and general suitability of the soils for agricultural use. Only information concerning general agricultural limitations in soil use are obtained at the capability class level.

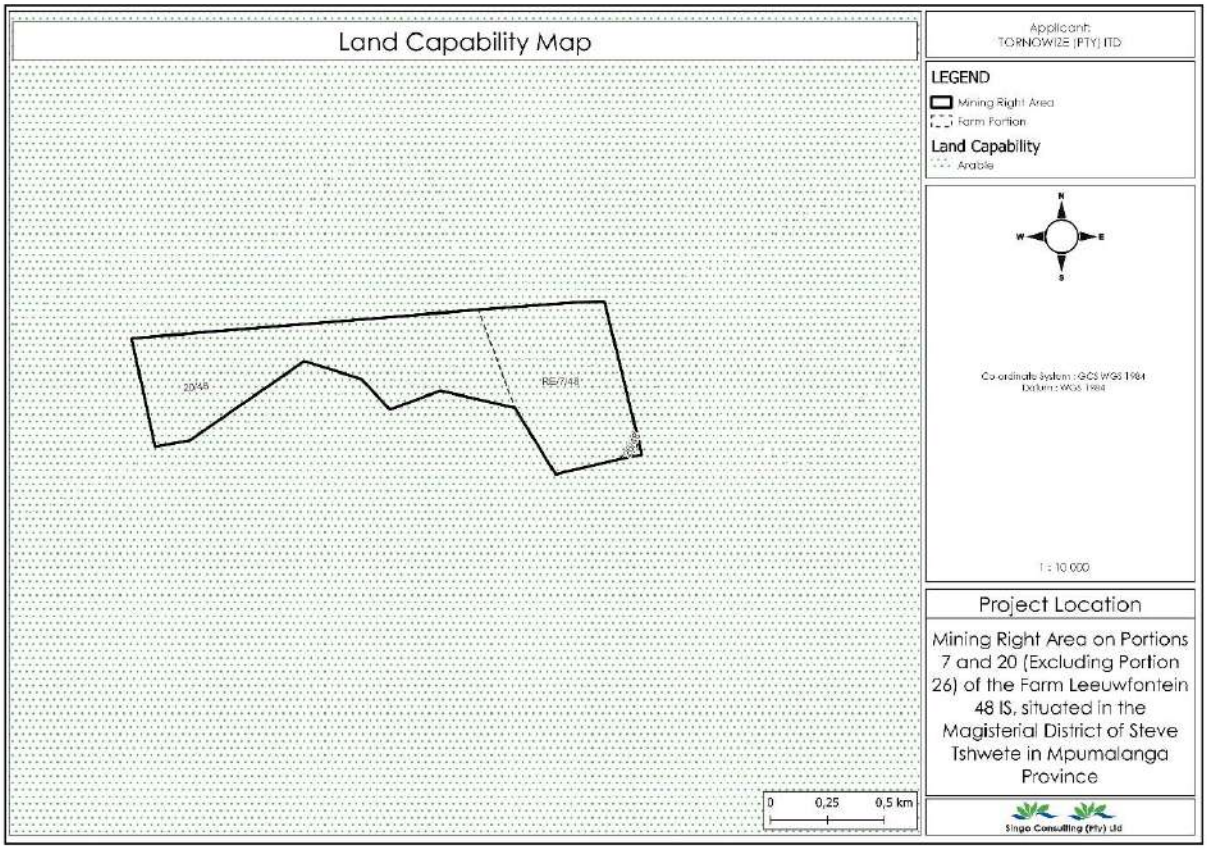


Figure 40: Land capability map of the study area (source: Singo consulting (Pty) Ltd)

10.7.3 Land use

The proposed coal mining area encompasses various land uses, each playing a crucial role in the overall ecosystem and environmental landscape. Here's a description of the different land uses within the area:

1. **Mine Area:** The mine area is the core zone where the coal mining activities will take place. It includes the open-pit, processing facilities, and associated infrastructure. This zone will undergo significant changes due to excavation, soil removal, and construction of structures related to coal extraction and processing.

Natural Vegetation: The natural vegetation areas refer to the existing plant communities within the proposed mining area. These may include grasslands, shrublands, and forests, each contributing to the biodiversity and ecological balance of the region. Preserving and mitigating the impact on natural vegetation is crucial for maintaining the ecological health and providing habitat for various wildlife species.

2. Built-Up Areas: Built-up areas encompass existing human settlements, infrastructure, and facilities that support the local community. These areas may include residential neighborhoods, schools, hospitals, and other essential services. During the mining process, there may be interactions with these areas, and careful planning and monitoring are necessary to minimize potential disruptions and impacts on the community.
3. Waterbodies: Waterbodies include rivers, streams, ponds, and other water sources present within the mining area. Proper management of water resources is critical to avoid pollution, erosion, and depletion of water levels, which could have adverse effects on the surrounding environment and nearby communities.
4. Wetlands: Wetlands are valuable ecosystems that provide numerous ecological functions, such as water filtration, flood control, and habitat for various plant and animal species. Preservation and protection of wetlands are vital for maintaining water quality and ecological diversity.

By carefully considering the environmental factors and integrating sustainable practices, the coal mining project can coexist with the natural environment and neighbouring communities, contributing to responsible resource extraction and environmental protection.

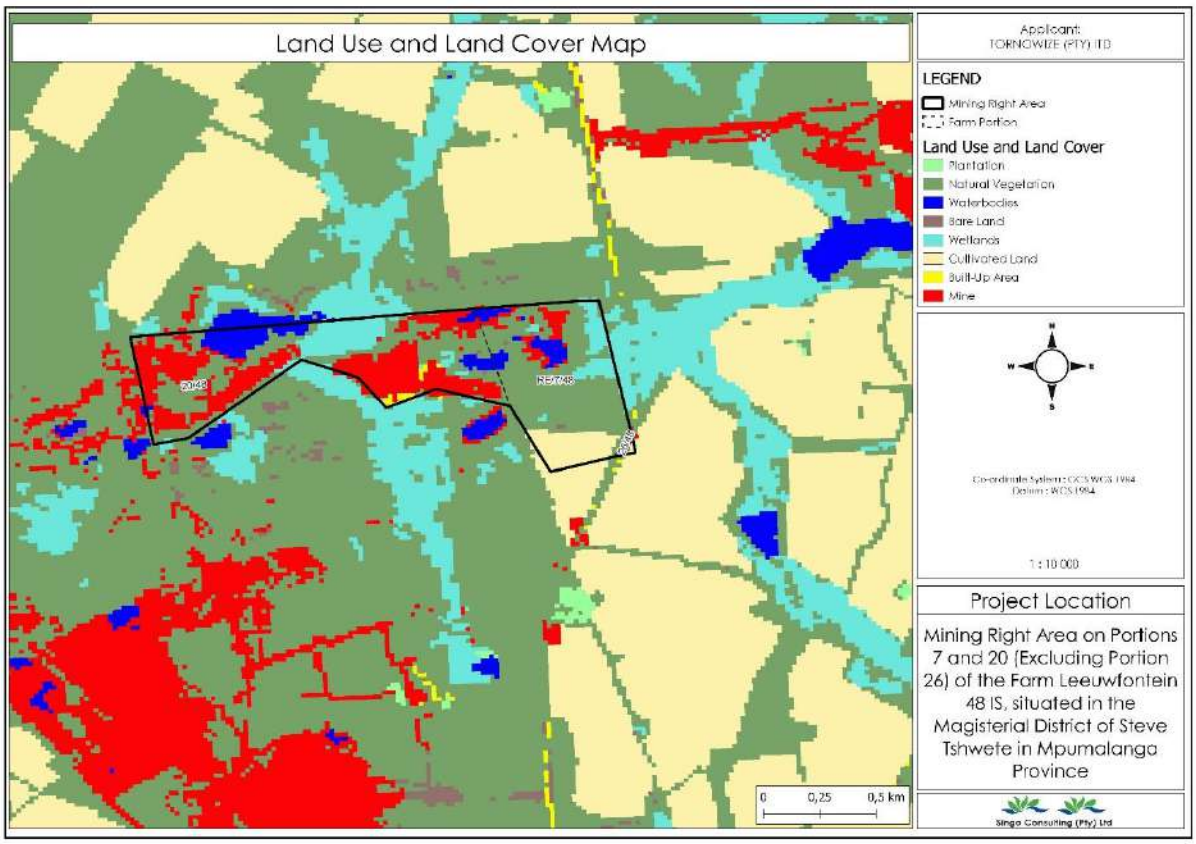


Figure 41: Land use map (source: Singo consulting (Pty) Ltd)

Figure 42: Current land use

10.7.4 Vegetation

During ground truthing, it was identified that the proposed site falls within the grassland biome. It is mostly covered with perennial grass and natural vegetation were also observed scattered in the area.

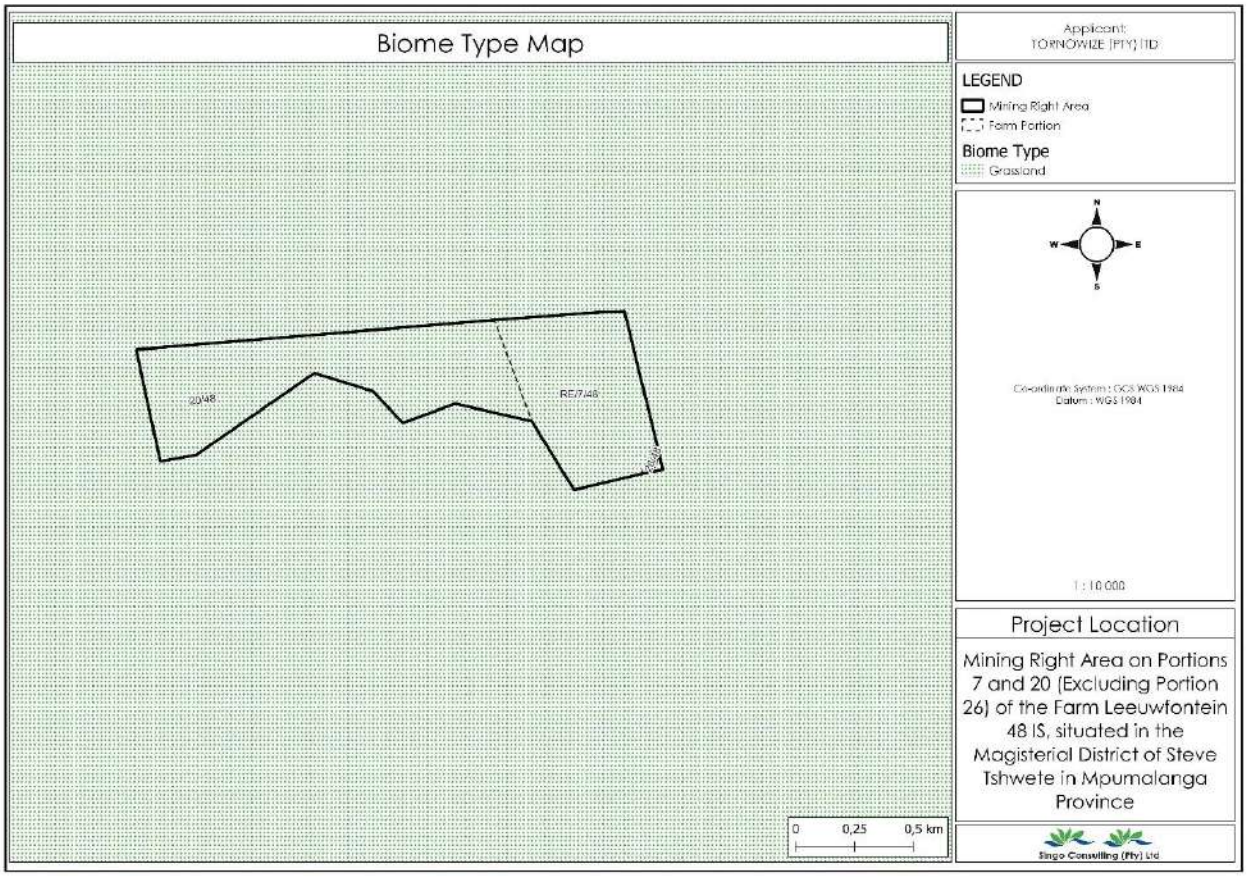


Figure 43: Biome Map (Singo Consulting)

Grassland Biome

The grassland biome is a type of terrestrial ecosystem characterized by vast expanses of grasses, herbs, and other non-woody vegetation. Grasslands are found in various regions around the world, and they play a crucial role in supporting biodiversity, providing habitat for numerous plant and animal species, and contributing to the overall ecological balance.

Key features in grassland biome include:

Vegetation: Grasslands are dominated by grass species, such as tall grasses, short grasses, and mid-grasses, as well as various herbaceous plants. Unlike forests, grasslands have few or no trees, with most vegetation growing close to the ground.

Climate: Grasslands typically experience distinct seasonal variations, with hot summers and cold winters. They are often located in regions with moderate to low precipitation, making them prone to periodic droughts.

Biodiversity: Despite the seemingly simple appearance, grasslands support a diverse array of plant and animal life. Various grass species, wildflowers, and herbs create a mosaic of different habitats within the grassland ecosystem. Many herbivores, such as bison, antelope, and zebras, graze on the grasses,

while carnivores like lions and cheetahs' prey on these herbivores. Grasslands are essential for various ecological functions. They contribute to soil formation, water infiltration, and carbon sequestration. The grasses' extensive root systems help prevent soil erosion, making grasslands crucial for soil conservation and sustainable agriculture.

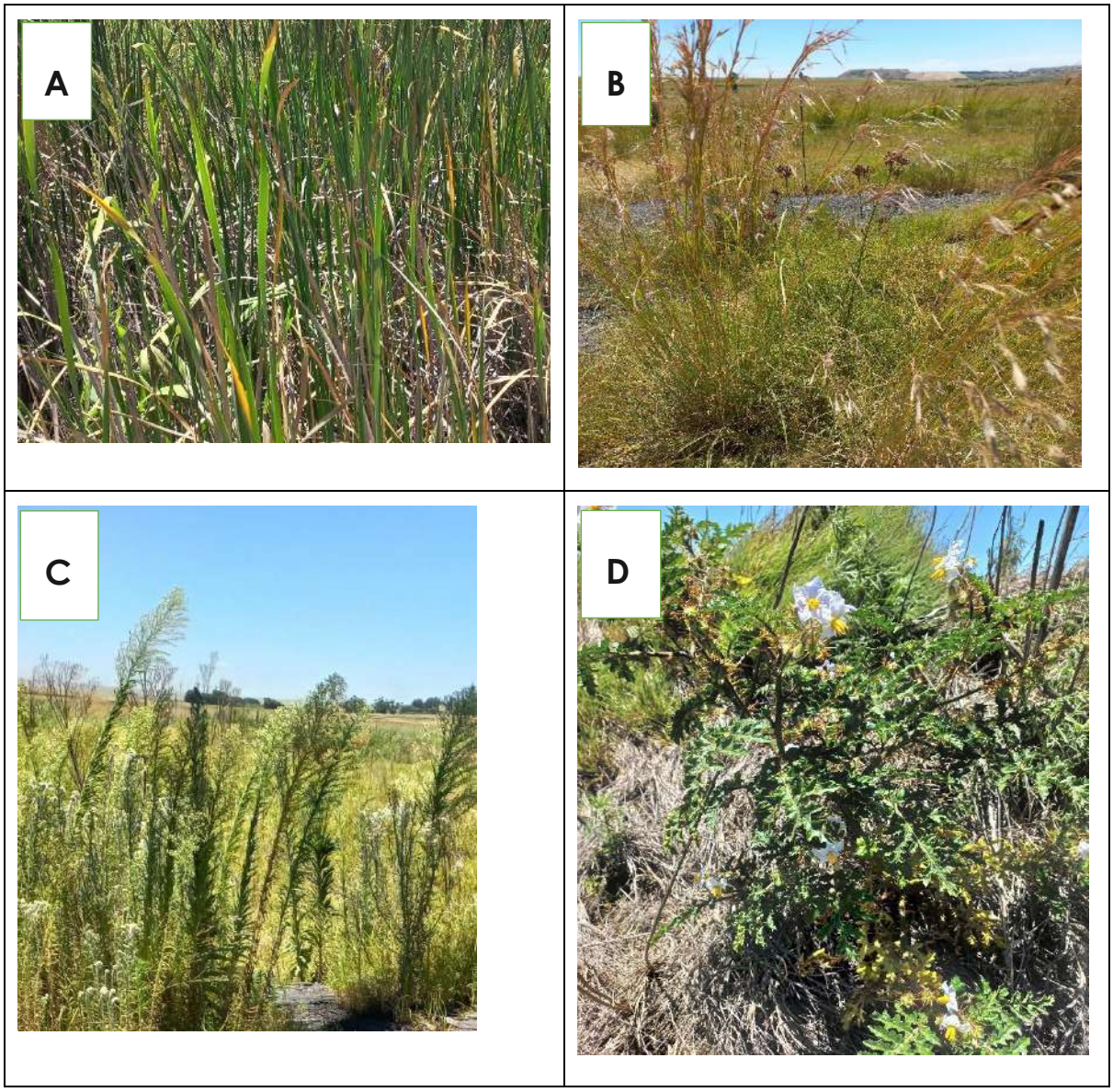


Figure 44: Vegetation on site

According to South African Vegetation Map, the proposed area falls under vegetation **Gm 12 Eastern Highveld Grassland**. The vegetation of the proposed area covers about 69% of Moist Sandy Highveld Grassland (Low & Rebelo 1996). The vegetation type map produced by Singo Consulting (Pty) Ltd, Database Manager confirms that the project area is covered by Moist Sandy Highveld Grassland (see *Figure 36*).

Distribution: The proposed vegetation is mainly found in Mpumalanga and Gauteng Provinces: Plains between Belfast in the east and the eastern side of Johannesburg in the west and extending southwards to Bethal, Ermelo and west of Piet Retief. In Altitudes 1 520–1 780 m, but also as low as 1 300 m.

Vegetation & Landscape Features: Slightly to moderately undulating plains, including some low hills and pan depressions. The vegetation is short dense grassland dominated by the usual highveld grass composition (*Aristida*, *Digitaria*, *Eragrostis*, *Themeda*, *Tristachya* etc.) with small, scattered rocky outcrops with wiry, sour grasses and some woody species (*Acacia caffra*, *Celtis africana*, *Diospyros lycioides* subsp *lycioides*, *Parinari capensis*, *Protea caffra*, *P. welwitschii* and *Rhus magalismontanum*).

Geology & Soils Red to yellow sandy soils of the Ba and Bb land types found on shales and sandstones of the Madzaringwe Formation (Karoo Supergroup). Land types of Bb (65%) and Ba (30%).

Important Taxa: Graminoids: *Aristida aequiglumis* (d), *A. congesta* (d), *A. junciformis* subsp. *galpinii* (d), *Brachiaria serrata* (d), *Cynodon dactylon* (d), *Digitaria monodactyla* (d), *D. tricholaenoides* (d), *Elionurus muticus* (d), *Eragrostis chloromelas* (d), *E. curvula* (d), *E. plana* (d), *E. racemosa* (d), *E. sclerantha* (d), *Heteropogon contortus* (d), *Loudetia simplex* (d), *Microchloa caffra* (d), *Monocymbium ceresiiforme* (d), *Setaria sphacelata* (d), *Sporobolus africanus* (d), *S. pectinatus* (d), *Themeda triandra* (d), *Trachypogon spicatus* (d), *Tristachya leucothrix* (d), *T. rehmannii* (d), *Alloteropsis semialata* subsp. *eckloniana*, *Andropogon appendiculatus*, *A. schirensis*, *Bewsia biflora*, *Ctenium concinnum*, *Diheteropogon amplectens*, *Eragrostis capensis*, *E. gummiflua*, *E. patentissima*, *Harpochloa falx*, *Panicum natalense*, *Rendlia altera*, *Schizachyrium sanguineum*, *Setaria nigrirostris*, *Urelytrum agropyroides*. Herbs: *Berkheya setifera* (d), *Haplocarpha scaposa* (d), *Justicia anagalloides* (d), *Pelargonium luridum* (d), *Acalypha angustata*, *Chamaecrista mimosoides*, *Dicoma anomala*, *Euryops gilfillanii, E. transvaalensis* subsp. *setilobus, Helichrysum aureonitens*, *H. caespititium*, *H. callicomum*, *H. oreophilum*, *H. rugulosum*, *Ipomoea crassipes*, *Pentanisia prunelloides* subsp. *latifolia*, *Selago densiflora*, *Senecio coronatus*, *Vernonia oligocephala*, *Wahlenbergia undulata*. Geophytic Herbs: *Gladiolus crassifolius*, *Haemanthus humilis subsp. hirsutus, Hypoxis rigidula var. pilosissima, Ledebouria ovatifolia.* *Succulent Herb:* *Aloe ecklonis.* *Low Shrubs:* *Anthospermum rigidum subsp. pumilum, Stoebe plumosa.*

Conservation: Endangered. Target 24%. Only very small fraction conserved in statutory reserves (Nooitgedacht Dam and Jericho Dam Nature Reserves) and in private reserves (Holkranse, Kransbank, Morgenstond). Some 44% transformed primarily by cultivation, plantations, mines, urbanisation and by building of dams. Cultivation may have had a more extensive impact, indicated by land-cover data. No serious alien invasions are reported, but Acacia mearnsii can become dominant in disturbed sites. Erosion is very low.

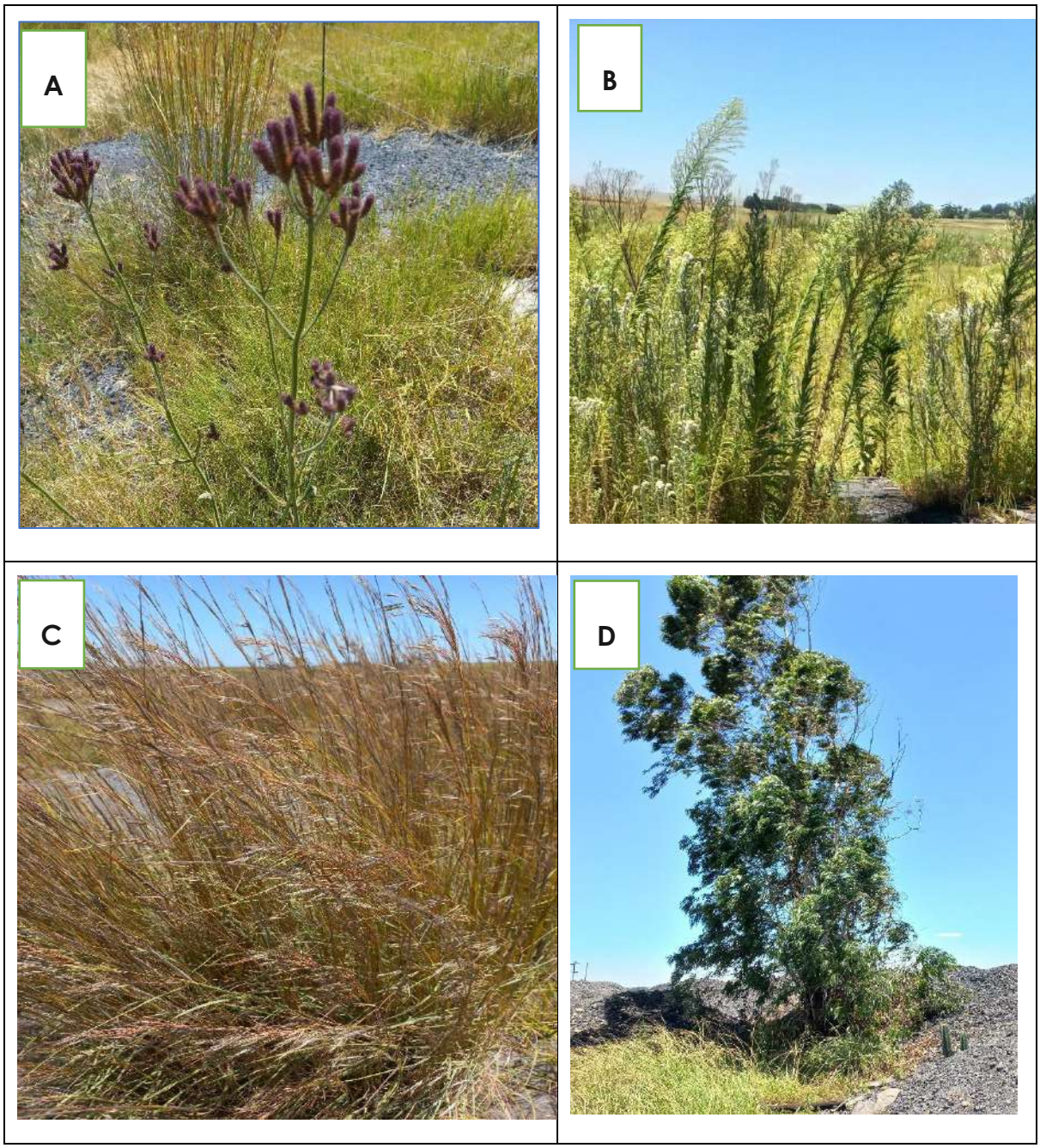


Figure 45: Some of the floral species observed onsite (Singo Consulting, 2023)

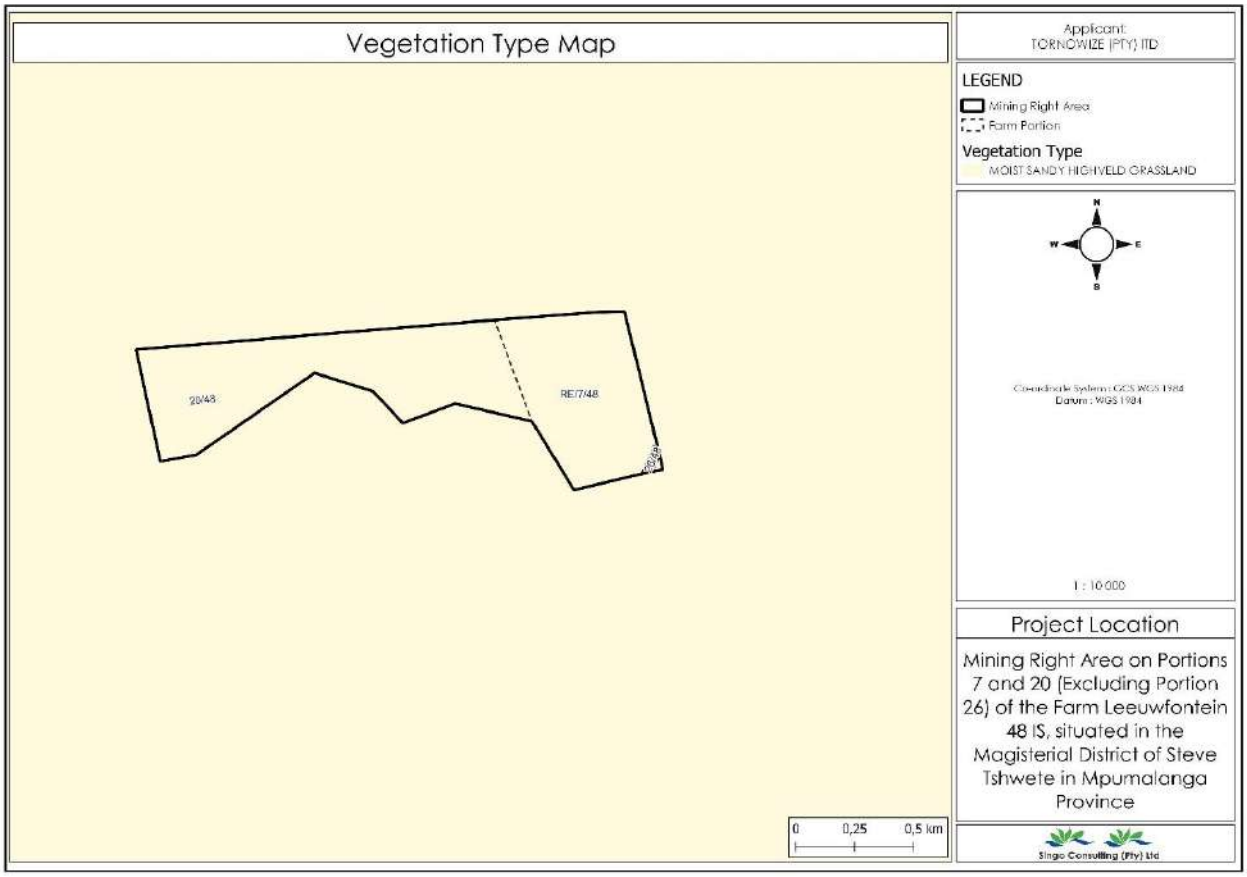


Figure 46: Vegetation type (source: Singo consulting (Pty) Ltd)

Moisty Sandy Highveld Grassland

Moisty Sandy Highveld Grassland is a specific type of grassland biome found in the Highveld region of South Africa. It is characterized by its unique combination of soil type, moisture conditions, and vegetation composition.

1. **Soil Type:** As the name suggests, the soil in this grassland biome is predominantly sandy in nature. Sandy soils have larger particles, which allow for faster drainage and aeration. However, sandy soils also tend to have lower water-holding capacity, making them more susceptible to drought conditions.

2. **Moisture Conditions**: Moisty Sandy Highveld Grassland experiences a moderate amount of rainfall compared to other grassland biomes, resulting in slightly higher moisture levels. This makes it more suitable for supporting a greater diversity of plant species compared to drier grassland types.

3. **Vegetation**: The vegetation in Moisty Sandy Highveld Grassland is characterized by a mix of grass species and scattered shrubs. Common grass species in this biome include red grasses (Themeda triandra) and blue grasses (Andropogon eucomus), among others. The presence of scattered shrubs adds to the overall biodiversity of the area.

4. **Biodiversity:** The Moisty Sandy Highveld Grassland supports a diverse range of plant and animal species. The grasses provide food and habitat for various herbivores, such as antelope and ground-dwelling birds. Predators like jackals and birds of prey also inhabit this biome.

5. **Human Impact:** Like many grassland biomes worldwide, Moisty Sandy Highveld Grassland has been affected by human activities, such as agriculture, urbanization, and mining. The conversion of natural grassland into farmland or development areas can lead to habitat loss and fragmentation, impacting the native flora and fauna.

Figure 47: Moisture availability (Singo Consulting)

An area with a slight moisture availability typically falls under the category of a semiarid or semi-arid climate region. In such areas, the moisture levels are relatively low, but there is enough rainfall to support some vegetation and limited agricultural activities. These regions are characterized by a delicate balance between water availability and the water needs of both natural ecosystems and human populations. In semiarid areas, the annual precipitation is generally lower than the potential evapotranspiration (the amount of water that could be evaporated and transpired if water were

unlimited). As a result, water is often a limiting factor for both plant growth and human activities. Vegetation in these regions typically includes drought-resistant grasses, shrubs, and some hardy trees that have adapted to survive in arid condition.

10.8 Conservation and sensitivity status

Ecosystem threat status outlines the degree to which ecosystems are still intact or alternatively losing vital aspects of their structure, function and composition, on which their ability to provide ecosystem services ultimately depends (Driver at al., 2012). Ecosystem types are categorised as Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Least Threatened (LT), based on the proportion of each ecosystem type that remains in good ecological condition (Driver at al., 2012).

An ecosystem is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable. It is therefore considered to be at a high risk of collapse (Source: Guidelines for the application of IUCN Red List of Ecosystems Categories and Criteria, 2016). See Table 12 for the summary of the five criteria (A-E) used to evaluate if a taxon belongs in an IUCN red list threatened category

Based on the Terrestrial Biodiversity Map, as depicted in Figure 41, the proposed site falls under the classification of "heavily modified." This classification indicates that the area has undergone significant human-induced alterations, which could have implications for the existing biodiversity and ecological integrity. On the other hand, the undisturbed area within the vicinity of the site is categorized as "other natural," signifying that this portion remains relatively untouched and is considered to be highly sensitive, as highlighted in the screening report map (Figure 42).

The identification of "heavily modified" areas raises potential concerns about the impact of the proposed project on the surrounding environment, especially considering the presence of sensitive areas like wetlands within the vicinity. As an environmental consulting firm, Singo Consulting (Pty) Ltd acknowledges the importance of these findings and is committed to conducting a comprehensive Environmental Impact Assessment (EIA) and Environmental Management Programme report (EMPr). During the site assessment, it was observed that the area has been disturbed and the ecosystem is already detouring due to improper overburden stockpiling from the current mining activities. It was also confirmed that the area has low sensitivity of plants mainly due to the extent of the habitat disturbance, which include, alien invasion and livestock grazing activities observed. The only ecosystem that is threatened currently is aquatic ecosystem which carries microorganisms (see image 13)

Through the EIA process, the potential impacts on the terrestrial biodiversity, including the wetlands and undisturbed natural areas, will be thoroughly assessed. The EIA aims to identify mitigation measures and management strategies to minimize adverse effects on sensitive ecosystems. The goal is

to strike a balance between the proposed mining activities and the conservation of biodiversity and ecological services.

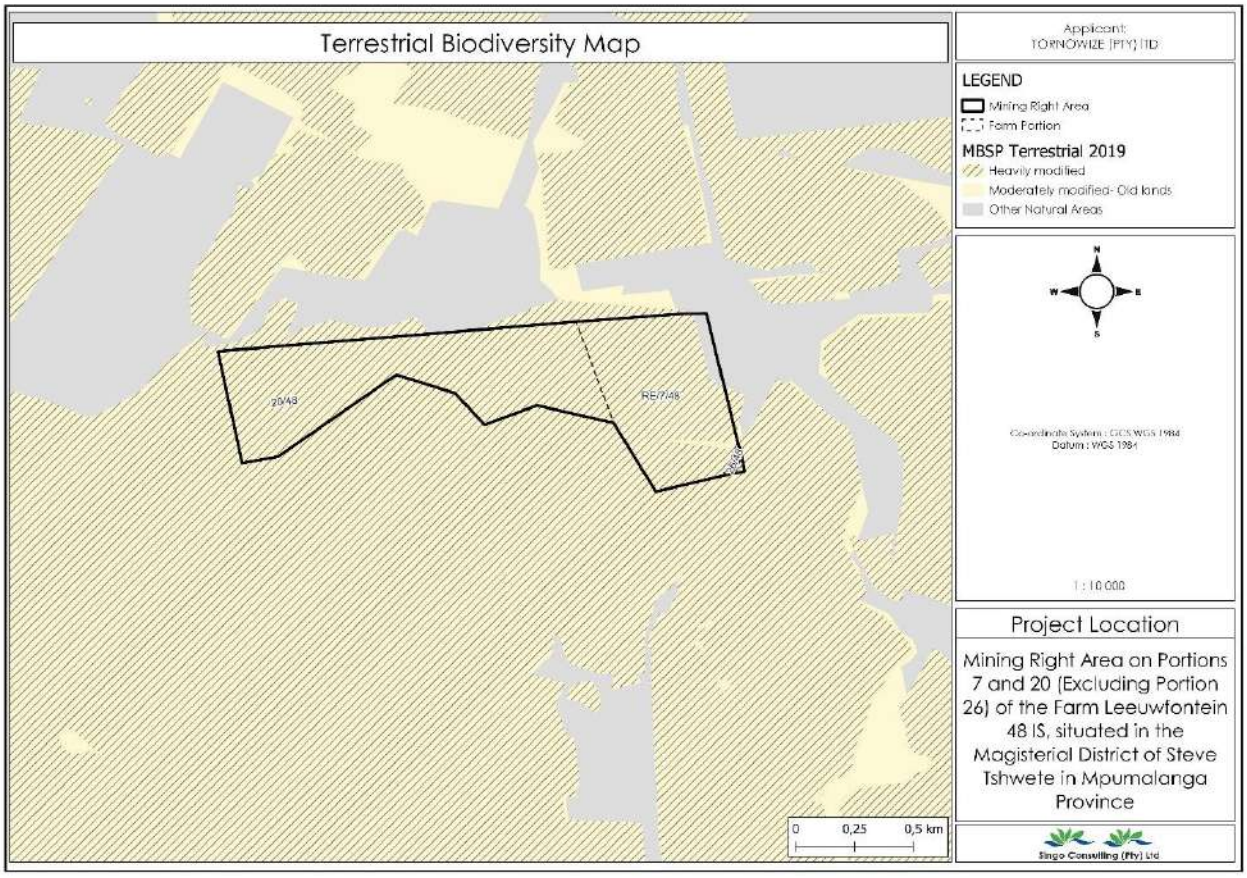


Figure 48: Terrestrial Biodiversity Map (Singo Consulting)

SUMMARY OF THE FIVE CRITERIA (A-E) USED TO EVALUATE IF A TAXON BELONGS IN AN IUCN RED LIST THREATENED CATEGORY (CRITICALLY ENDANGERED, ENDANGERED OR VULNERABLE).[1]

A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4

	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%

A1 Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND understood AND have ceased.

A2 Population reduction observed, estimated, inferred, or suspected in the past where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

A3 Population reduction projected, inferred or suspected to be met in the future (up to a maximum of 100 years) *[(a) cannot be used for A3]*.

A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

based on any of the following:

- **(a)** direct observation *[except A3]*
- **(b)** an index of abundance appropriate to the taxon
- **(c)** a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality
- **(d)** actual or potential levels of exploitation
- **(e)** effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)

	Critically Endangered	Endangered	Vulnerable
B1. Extent of occurrence (EOO)	< 100 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented **OR** Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: **(i)** extent of occurrence; **(ii)** area of occupancy; **(iii)** area, extent and/or quality of habitat; **(iv)** number of locations or subpopulations; **(v)** number of mature individuals			
(c) Extreme fluctuations in any of: **(i)** extent of occurrence; **(ii)** area of occupancy; **(iii)** number of locations or subpopulations; **(iv)** number of mature individuals			

C. Small population size and decline

	Critically Endangered	Endangered	Vulnerable
Number of mature individuals	< 250	< 2,500	< 10,000
AND at least one of C1 or C2			
C1. An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
C2. An observed, estimated, projected or inferred continuing decline AND at least 1 of the following 3 conditions:			
(a) (i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
(ii) % of mature individuals in one subpopulation =	90–100%	95–100%	100%
(b) Extreme fluctuations in the number of mature individuals			

D. Very small or restricted population

	Critically Endangered	Endangered	Vulnerable
D. Number of mature individuals	< 50	< 250	**D1.** < 1,000
D2. *Only applies to the VU category* Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.	-	-	**D2.** typically: AOO < 20 km² or number of locations ≤ 5

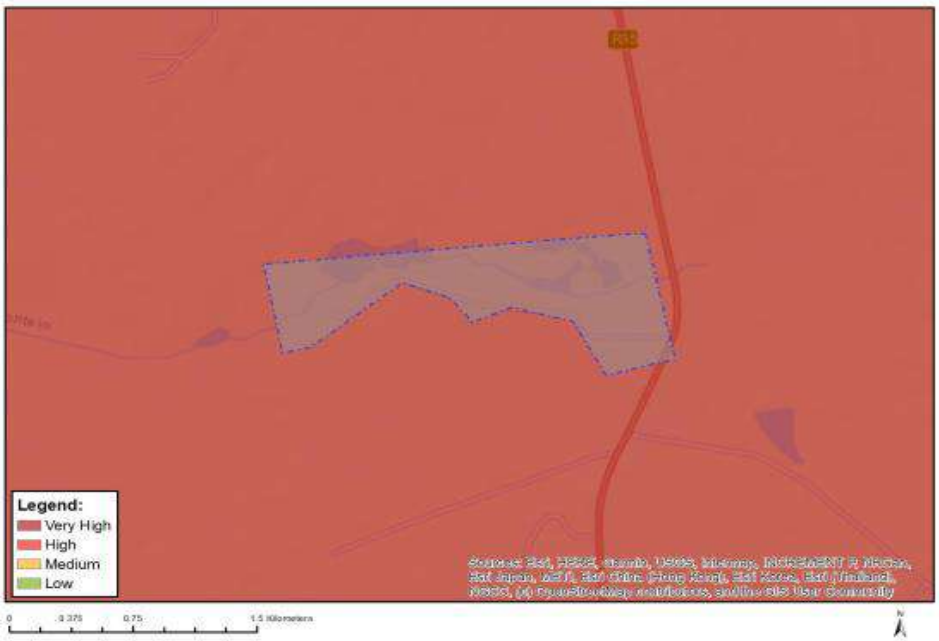
E. Quantitative Analysis

	Critically Endangered	Endangered	Vulnerable
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)	≥ 10% in 100 years

1 Use of this summary sheet requires full understanding of the *IUCN Red List Categories and Criteria* and *Guidelines for Using the IUCN Red List Categories and Criteria*. Please refer to both documents for explanations of terms and concepts used here.

Table 10: Summary of five criteria (A-E)

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	EN_Eastern Highveld Grassland

Figure 49: Relative Terrestrial Biodiversity Map (Screening tool)

Image 15: Overview of the proposed project (Site assessment, 2023)

The findings of the screening report, as depicted in Figure 42, highlight that the area of interest is classified as a "very high sensitive area" concerning aquatic biodiversity. This classification indicates that the region is home to significant aquatic ecosystems that support diverse species of plants and animals dependent on waterbodies and wetlands for their survival and ecological functions.

During the ground-truthing process, Singo Consulting (Pty) Ltd confirmed the presence of waterbodies and wetlands within the area of interest. Waterbodies and wetlands are crucial components of the aquatic biodiversity, providing essential habitats for numerous aquatic species and contributing to water quality regulation and flood mitigation. To assess the potential impact of the proposed development on the aquatic biodiversity of the area, Singo Consulting conducted a wetland delineation and hydrology studies. These studies aims to comprehensively understand the current state and functioning of the wetland systems and their connectivity to the broader aquatic ecosystem.

Through the wetland delineation, the extent and boundaries of the wetland areas have been precisely identified and mapped. This process allowed for a detailed assessment of the wetland's ecological value, as well as any potential threats or disturbances posed by the proposed mining activities.

Two NFEPA wetlands were identified onsite as shown in image 14 below. The identified NFEPA wetlands were classified as Flat wetland and Floodplain wetland. The wetlands identified onsite were classified as natural wetland systems that are largely natural. The wetlands were ranked as Rank 6 NFEPA Wetlands. The wetlands classification of the NFEPA wetlands is shown in Table 13.

Image 16: Wetlands setting in the project area.

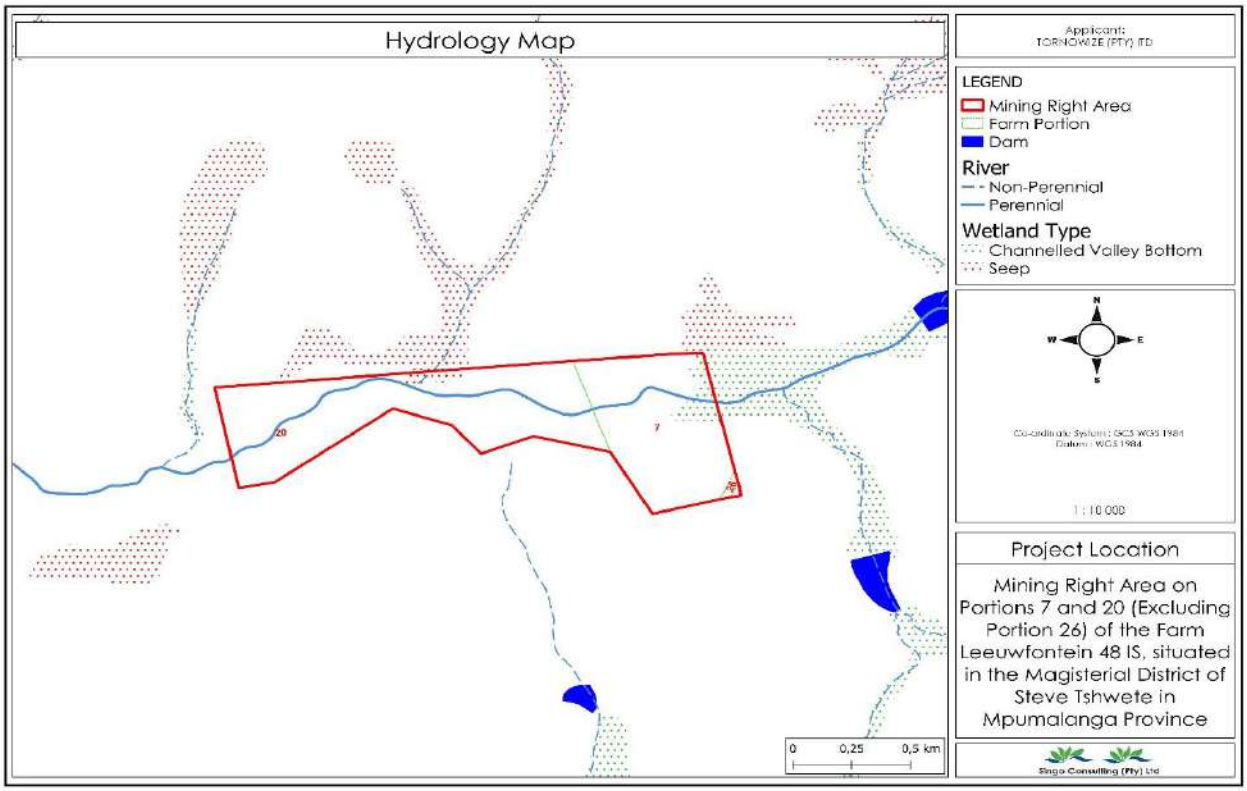
FEPA Wetlands	Classification Levels				Wetland Vegetation Class	Natural / Artificial	Condition	Rank
	L1 (System)	L2 (Ecoregion)	L3 Landscape Position	L4 HGM Class				
1. Flat wetland	Inland	Highveld	Bench	Flat wetland	Mesic highveld Grassland	Natural	DEF	6
2. Floodplain wetland	Inland	Highveld	Valley floor	Floodplain wetland	Mesic highveld Grassland	Natural	DEF	6

Table 11: Wetland classification of the NFEPA wetlands

The hydrology study, on the other hand, examined the water flow patterns, hydrological processes, and water sources that sustain the wetlands and waterbodies. Understanding the hydrology is crucial in determining how the proposed development might impact the water availability, water quality, and overall ecological health of the aquatic ecosystems. By conducting a comprehensive wetland delineation and hydrology studies and incorporating the results into the EIA, the aim is to make informed decisions that safeguard the aquatic biodiversity of the area. Our goal is to ensure that the proposed mining project coexists harmoniously with the aquatic ecosystems, supporting their long-term health and ecological integrity. A 100m buffer will be applied away from all the waterbodies.

The decision to implement a 100m buffer zone away from all waterbodies is a proactive measure aimed at safeguarding the integrity and ecological health of these crucial aquatic ecosystems. This buffer zone

serves as a protective area surrounding the waterbodies, helping to minimize potential impacts from the proposed mining activities.



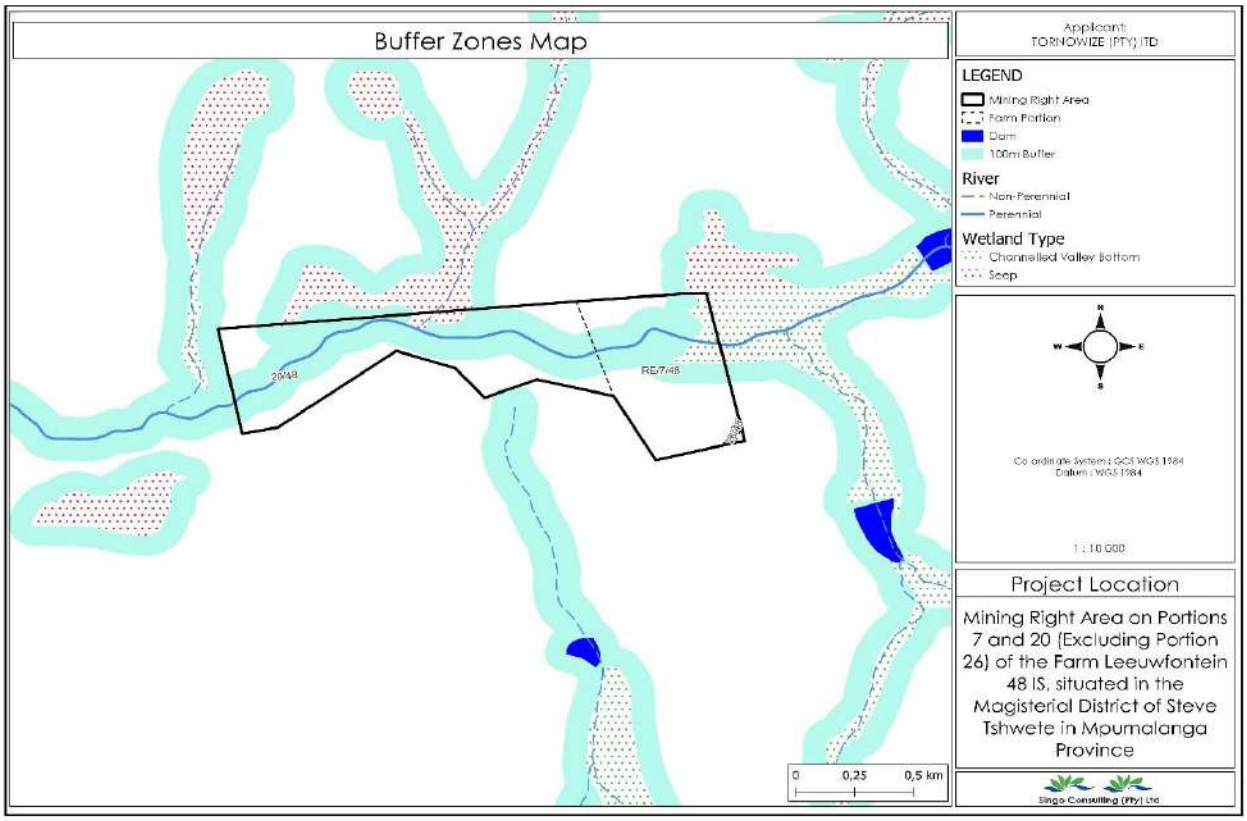
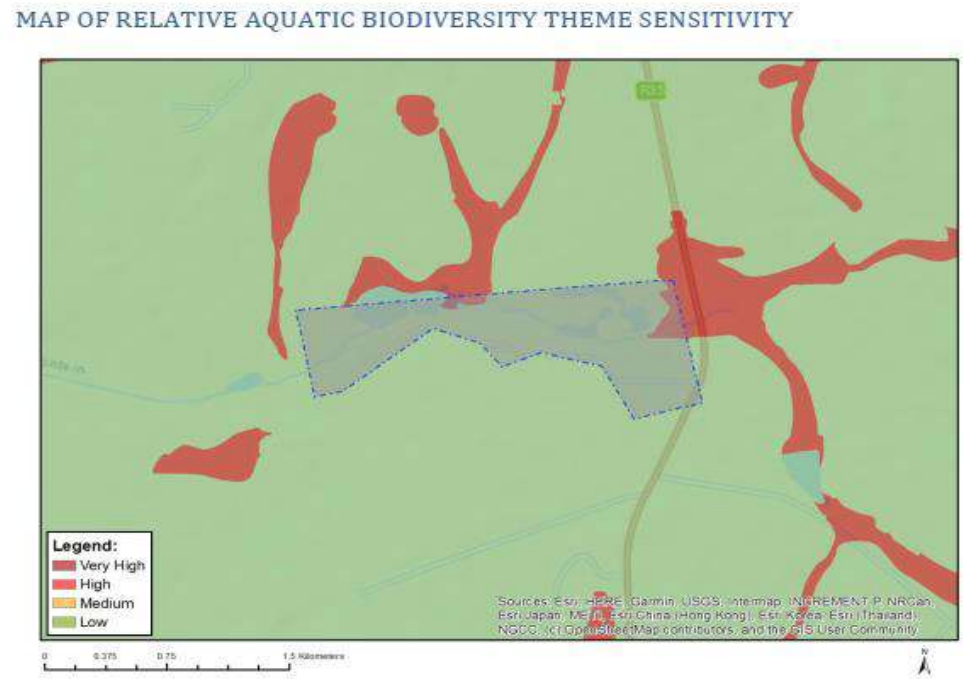


Figure 50: Hydrology & Buffer Zone Map (Singo Consulting)



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	ESA: Wetlands
Very High	Wetlands_Mesic Highveld Grassland Bioregion (Seep)
Very High	Wetlands_Mesic Highveld Grassland Bioregion (Valley-bottom)

Figure 51: Relative Aquatic Biodiversity Map (Screening Tool)

10.9 Field Work

The fieldwork and sample sites were placed within targeted areas (i.e. target sites) perceived as ecologically sensitive based on the preliminary interpretation of satellite imagery and GIS analysis (which included the latest applicable biodiversity datasets) available prior to the fieldwork.

The focus of the fieldwork was therefore to maximize coverage and navigate to each target site in the field in order to perform a vegetation and ecological habitat assessment at each sample site. Emphasis was placed on sensitive habitats, especially those overlapping with proposed development areas. Due

to the timing of the survey, morphological structures used to identify flora, such as inflorescences and flowers, are either limited or absent, thus affecting the floral species identified.

At each sample site notes were made regarding current impacts (e.g. livestock grazing, erosion etc.), subjective recording of dominant vegetation species and any sensitive features (e.g. wetlands, outcrops etc.) present. In addition, opportunistic observations were made while navigating through the project area. Effort was made to cover all the different habitat types within the limits of time and access.

The desktop study established that there are various activities taking place within the proposed site which includes crop and livestock farming, and old residential areas. The site activities have influenced vegetation cover within the proposed site. The vegetation covers as determined by Singo consulting is slightly to moderately undulating plains, including some low hills and pan depressions. The vegetation is short dense grassland dominated by the usual highveld grass composition (*Aristida*, *Digitaria*, *Eragrostis*, *Themeda*, *Tristachya* etc.) with small, scattered rocky outcrops with wiry, sour grasses and some woody species (*Acacia caffra*, *Celtis africana*, *Diospyros lycioides* subsp *lycioides*, *Parinari capensis*, *Protea caffra*, *P. welwitschii* and *Rhus magalismontanum.* During the site assessment, it was observed that the area has been disturbed and the ecosystem is already detouring due to improper overburden stockpiling from the current mining activities. It was also confirmed that the area has low sensitivity of plants mainly due to the extent of the habitat disturbance, which include, alien invasion and livestock grazing activities observed. The only ecosystem that is threatened currently is aquatic ecosystem which carries microorganism. A full specialist biodiversity study is enclosed as part of the EIA (Appendix 9).

10.10 Fauna

A desktop survey was conducted using maps and reviewing other reports and photography to assemble background information on the different features of and species present in the proposed project area. The site was assessed on 24th of November 2022 to record the features present.

Fauna Survey

Most mammals and reptiles are very secretive, nocturnal, hibernate (reptiles), migrate (birds) or prefer specific habitats, so sampling and identification proved difficult.

Mammals

Mammals are nocturnal, secretive, or seasonal. Their specific habitats, walking trails, faeces, spoor, fur, bones, and carcasses were assessed to document mammal species associated with the proposed site. The site assessment was conducted using direct and indirect methods, including mammal sightings,

and identification of burrows and holes, which were verified using the available literature *(Skinner and Chimimba, 2005)*. During site assessment, no mammal species of conservation concern were observed; only domestic animals (cattle's) were observed grazing onsite (see image 15). Some part of the project area is heavily modified due to mining activities and grazing activities and those areas are heavily modified to an extent that it might led to relocation of mammal species.

However, during desktop study, the VMUS website displays a list of potential mammal species that may be present within the grid 2629 AB that covers the proposed mining right area and mammals were last recorded in 2018 (Table 14). The mammals recorded includes *ORDER Rodentia, Felis nigripes, Rhabdomys pumilio* and *FAMILY Soricidae* (see image 16). Pouching and hunting is prohibited onsite if any mammal species might be identified during mine operation.

NO.	Family	Scientific name	Common name	Red list category	Number of records	Last recorded
1		ORDER Rodentia	Unidentified Rodentia		1	2018-08-05
2	Felidae	Felis nigripes	Black-footed Cat	Vulnerable (2016)	2	
3	Felidae	Leptailurus serval	Serval	Near Threatened (2016)	1	2018-08-05
4	Muridae	Gerbilliscus brantsii	Highveld Gerbil	Least Concern (2016)	2	1991-09-24
5	Muridae	Mastomys coucha	Southern African Mastomys	Least Concern (2016)	11	1991-09-25
6	Muridae	Mus (Nannomys) minutoides	Southern African Pygmy Mouse	Least Concern	1	1991-09-26
7	Muridae	Otomys auratus	Southern African Vlei Rat (Grassland type)	Near Threatened (2016)	9	1991-09-27
8	Muridae	Rhabdomys pumilio	Xeric Four-striped Grass Rat	Least Concern (2016)	3	2018-08-05
9	Mustelidae	Hydrictis maculicollis	Spotted-necked Otter	Least Concern (IUCN 2008)	1	2012-10-24

10	Nesomyidae	Dendromus mystacalis	Chestnut African Climbing Mouse	Least Concern (2016)	1	1991-09-25
11	Soricidae	FAMILY Soricidae	Unidentified Soricidae (Shrew)		1	2018-08-05
12	Soricidae	Crocidura mariquensis	Swamp Musk Shrew	Near Threatened (2016)	1	1991-09-26
13	Soricidae	Myosorex varius	Forest Shrew	Least Concern (2016)	2	1991-09-25
					36	**1991-09-26* 1991-09-25****

Table 12: Historical mammal species records from the broader study area (VMUS)

Image 17: Domestic animals observed on site (Site assessment, 2022)

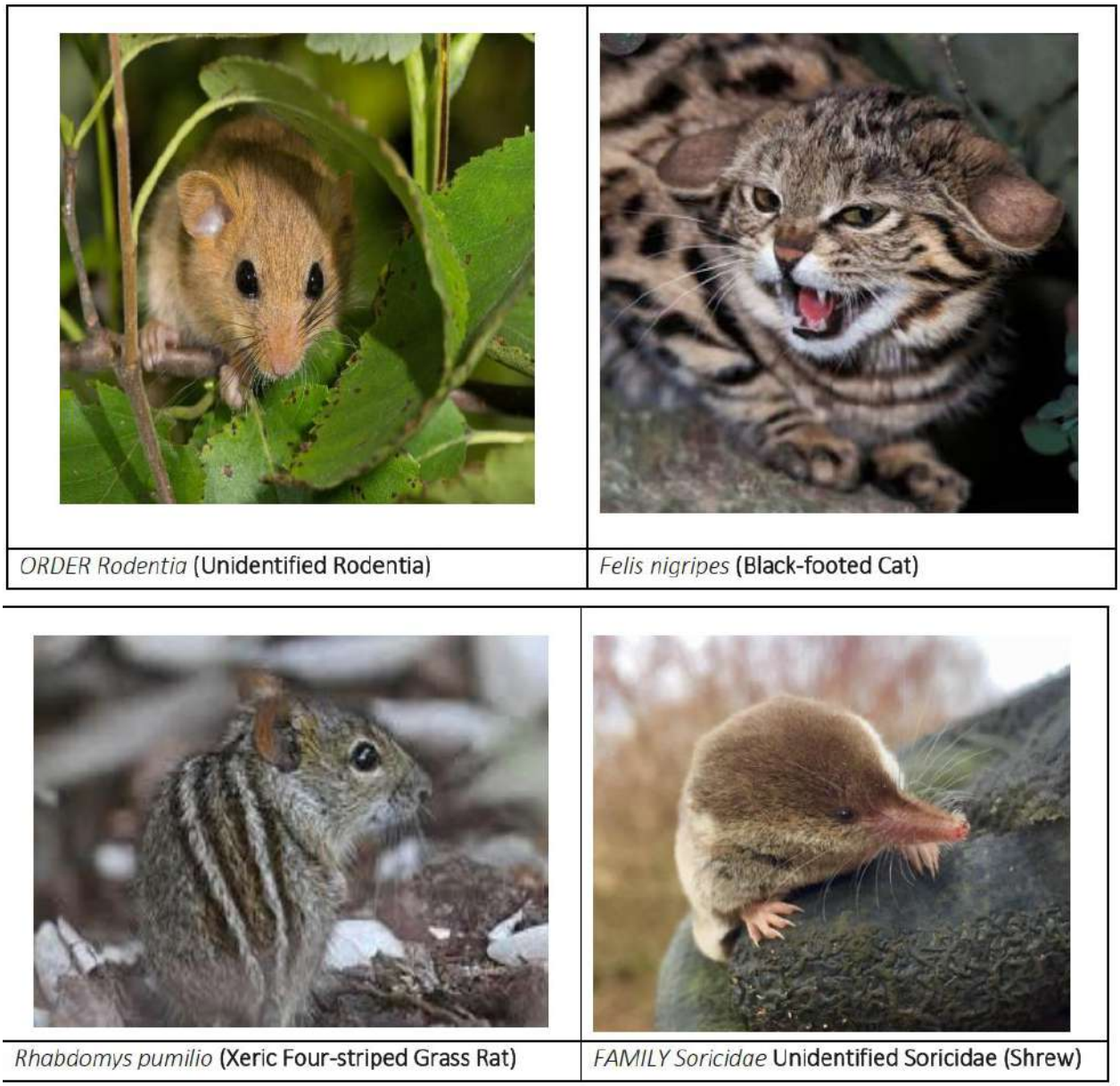
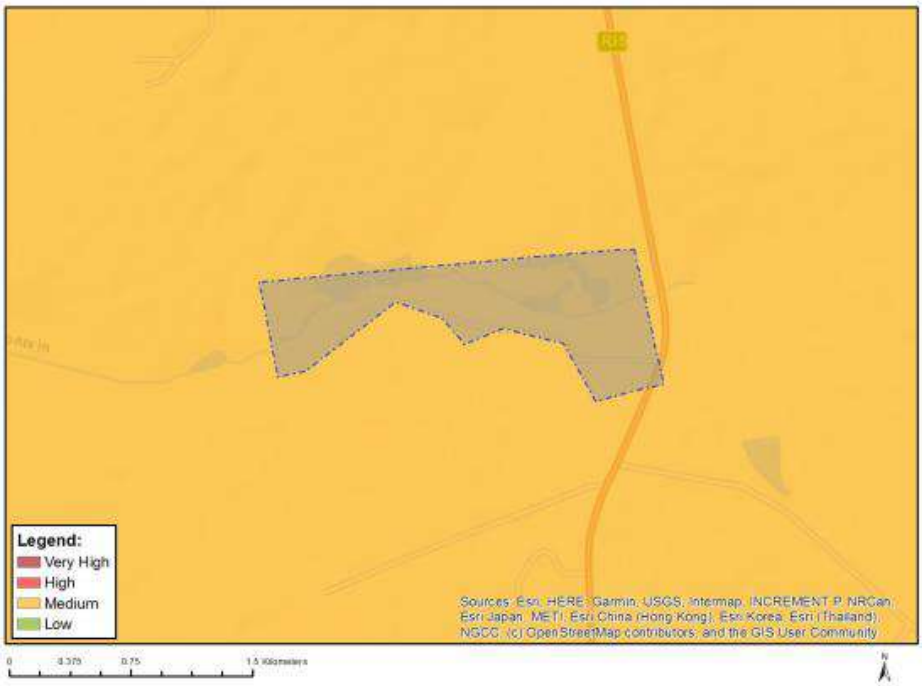


Image 18: Mammals identified on the VMUS website that might be found within the project area. (iNaturalist.org)

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Aves-Hydroprogne caspia
Medium	Mammalia-Crocidura maquassiensis
Medium	Mammalia-Dasymys robertsii
Medium	Mammalia-Hydrictis maculicollis
Medium	Mammalia-Ourebia ourebi ourebi

Figure 52: Animal species theme sensitivity (Screening tool)

10.10.1 Birds

Birds are considered good ecological indicators, since their presence or absence indicate whether the ecosystem is functioning properly or not. During ground truthing, no medium to high sensitivity of bird's species observed, only birds of least concern such as Anas undulata were observed (see figure 46). Bird communities and ecological condition are linked to land cover, as the types of bird

species in the area change when land cover changes. Habitat-specific species are sensitive to environmental change, with habitat destruction being the leading cause of species decline worldwide. It is widely accepted that vegetation structure, rather than the actual plant species, influences bird species distribution and abundance (Harrison et al., 1997). Due to their erratic flight patterns and short sighting intervals, birds are challenging to photograph. For a list of potential birds' species that may be present within the proposed mining right area which was last updated in 2020 (see table 15).

NO.	Ref	Common group	Common species	Genus	Species	Latest Adhoc
1	637		Neddicky	Cisticola	fulvicapilla	2016-08-06
2	844		Quailfinch	Ortygospiza	atricollis	2016-08-06
3	256		Ruff	Calidris	pugnax	2018-09-30
4	105		Secretarybird	Sagittarius	serpentarius	2016-08-06
5	431	Barbet	Black-collared	Lybius	torquatus	-
6	439	Barbet	Crested	Trachyphonus	vaillantii	2016-08-06
7	808	Bishop	Southern Red	Euplectes	orix	2020-07-12
8	812	Bishop	Yellow-crowned	Euplectes	afer	2017-03-11
9	67	Bittern	Little	Ixobrychus	minutus	2017-03-11
10	545	Bulbul	Dark-capped	Pycnonotus	tricolor	2017-03-11
11	154	Buzzard	Common	Buteo	buteo	2017-03-11
12	860	Canary	Black-throated	Crithagra	atrogularis	2017-03-11
13	859	Canary	Yellow-fronted	Crithagra	mozambica	2016-08-06
14	646	Cisticola	Levaillant's	Cisticola	tinniens	2017-03-11
15	629	Cisticola	Zitting	Cisticola	juncidis	-
16	212	Coot	Red-knobbed	Fulica	cristata	2018-11-08
17	50	Cormorant	Reed	Microcarbo	africanus	2018-04-08
18	47	Cormorant	White-breasted	Phalacrocorax	lucidus	-
19	203	Crake	Black	Zapornia	flavirostra	2016-08-06
20	522	Crow	Pied	Corvus	albus	2016-08-06
21	52	Darter	African	Anhinga	rufa	-
22	316	Dove	Cape Turtle	Streptopelia	capicola	2017-03-11
23	317	Dove	Laughing	Spilopelia	senegalensis	2017-03-11
24	318	Dove	Namaqua	Oena	capensis	-
25	314	Dove	Red-eyed	Streptopelia	semitorquata	2020-07-12
26	940	Dove	Rock	Columba	livia	-
27	104	Duck	White-backed	Thalassornis	leuconotus	-
28	96	Duck	Yellow-billed	Anas	undulata	2017-03-11
29	149	Eagle	African Fish	Haliaeetus	vocifer	-
30	60	Egret	Intermediate	Ardea	intermedia	-
31	59	Egret	Little	Egretta	garzetta	2018-11-08
32	61	Egret	Western Cattle	Bubulcus	ibis	2017-03-11
33	820	Finch	Red-headed	Amadina	erythrocephala	2016-08-06
34	707	Fiscal	Southern	Lanius	collaris	2020-11-07
35	86	Flamingo	Greater	Phoenicopterus	roseus	-
36	89	Goose	Egyptian	Alopochen	aegyptiaca	2018-11-08
37	88	Goose	Spur-winged	Plectropterus	gambensis	2017-03-11
38	4	Grebe	Great Crested	Podiceps	cristatus	-
39	6	Grebe	Little	Tachybaptus	ruficollis	2016-08-06
40	263	Greenshank	Common	Tringa	nebularia	2018-09-30
41	192	Guineafowl	Helmeted	Numida	meleagris	2020-11-07

42	55	Heron	Black-headed	Ardea	melanocephala	2016-08-06
43	56	Heron	Goliath	Ardea	goliath	-
44	54	Heron	Grey	Ardea	cinerea	2018-09-30
45	57	Heron	Purple	Ardea	purpurea	2017-03-11
46	62	Heron	Squacco	Ardeola	ralloides	2016-08-06
47	418	Hoopoe	African	Upupa	africana	2017-03-11
48	81	Ibis	African Sacred	Threskiornis	aethiopicus	2018-11-08
49	83	Ibis	Glossy	Plegadis	falcinellus	-
50	84	Ibis	Hadada	Bostrychia	hagedash	2017-03-11
51	228	Jacana	African	Actophilornis	africanus	2018-09-30
52	123	Kestrel	Rock	Falco	rupicolus	-
53	130	Kite	Black-winged	Elanus	caeruleus	2017-03-11
54	247	Lapwing	African Wattled	Vanellus	senegallus	-
55	245	Lapwing	Blacksmith	Vanellus	armatus	2020-07-12
56	242	Lapwing	Crowned	Vanellus	coronatus	2017-03-11
57	488	Lark	Red-capped	Calandrella	cinerea	-
58	703	Longclaw	Cape	Macronyx	capensis	-
59	510	Martin	Banded	Riparia	cincta	-
60	509	Martin	Brown-throated	Riparia	paludicola	2017-03-11
61	210	Moorhen	Common	Gallinula	chloropus	2017-03-11
62	390	Mousebird	Speckled	Colius	striatus	-
63	734	Myna	Common	Acridotheres	tristis	2017-03-11
64	361	Owl	Marsh	Asio	capensis	2016-08-06
65	311	Pigeon	Speckled	Columba	guinea	2020-07-12
66	692	Pipit	African	Anthus	cinnamomeus	-
67	233	Plover	Common Ringed	Charadrius	hiaticula	2018-09-30
68	237	Plover	Kittlitz's	Charadrius	pecuarius	2018-09-30
69	238	Plover	Three-banded	Charadrius	tricollaris	2018-09-30
70	649	Prinia	Tawny-flanked	Prinia	subflava	2016-08-06
71	805	Quelea	Red-billed	Quelea	quelea	2016-08-06
72	581	Robin-Chat	Cape	Cossypha	caffra	-
73	258	Sandpiper	Common	Actitis	hypoleucos	-
74	262	Sandpiper	Marsh	Tringa	stagnatilis	2018-09-30
75	264	Sandpiper	Wood	Tringa	glareola	2018-09-30
76	94	Shoveler	Cape	Spatula	smithii	-
77	250	Snipe	African	Gallinago	nigripennis	2016-08-06
78	786	Sparrow	Cape	Passer	melanurus	2018-09-30
79	784	Sparrow	House	Passer	domesticus	2016-08-06
80	4142	Sparrow	Southern Grey-headed	Passer	diffusus	2016-08-06
81	85	Spoonbill	African	Platalea	alba	2018-11-08
82	185	Spurfowl	Swainson's	Pternistis	swainsonii	2017-03-11
83	737	Starling	Cape	Lamprotornis	nitens	-
84	746	Starling	Pied	Lamprotornis	bicolor	-
85	745	Starling	Red-winged	Onychognathus	morio	2017-03-11
86	270	Stilt	Black-winged	Himantopus	himantopus	2018-09-30
87	253	Stint	Little	Calidris	minuta	2018-10-03
88	576	Stonechat	African	Saxicola	torquatus	2020-11-07
89	75	Stork	Saddle-billed	Ephippiorhynchus	senegalensis	2018-11-08
90	493	Swallow	Barn	Hirundo	rustica	2017-03-11
91	502	Swallow	Greater Striped	Cecropis	cucullata	2018-11-08
92	504	Swallow	South African Cliff	Petrochelidon	spilodera	2018-11-08
93	495	Swallow	White-throated	Hirundo	albigularis	-

94	208	Swamphen	African	Porphyrio	madagascariensis	-
95	385	Swift	Little	Apus	affinis	-
96	383	Swift	White-rumped	Apus	caffer	2015-01-10
97	97	Teal	Red-billed	Anas	erythrorhyncha	2017-03-11
98	305	Tern	Whiskered	Chlidonias	hybrida	-
99	1104	Thrush	Karoo	Turdus	smithi	-
100	686	Wagtail	Cape	Motacilla	capensis	2018-09-30
101	606	Warbler	African Reed (Old, Use Common Reed Warbler)	Acrocephalus	baeticatus	-
102	604	Warbler	Lesser Swamp	Acrocephalus	gracilirostris	2016-08-06
103	609	Warbler	Little Rush	Bradypterus	baboecala	-
104	843	Waxbill	Common	Estrilda	astrild	2018-11-08
105	838	Waxbill	Orange-breasted	Amandava	subflava	-
106	799	Weaver	Cape	Ploceus	capensis	-
107	803	Weaver	Southern Masked	Ploceus	velatus	2020-11-07
108	568	Wheatear	Capped	Oenanthe	pileata	2016-08-06
109	1172	White-eye	Cape	Zosterops	virens	-
110	846	Whydah	Pin-tailed	Vidua	macroura	2016-08-06
111	816	Widowbird	Fan-tailed	Euplectes	axillaris	2018-11-08
112	818	Widowbird	Long-tailed	Euplectes	progne	2020-07-12
113	419	Wood Hoopoe	Green	Phoeniculus	purpureus	2016-08-06
114	445	Woodpecker	Ground	Geocolaptes	olivaceus	-
115	453	Wryneck	Red-throated	Jynx	ruficollis	2016-08-06

Table 13: SABAP 2 bird list of the area (Birdlife South Africa)

Figure 53: Typical examples of Birds observed onsite. (Singo Consulting (Pty) Ltd, 2023)

Herpetofauna

Herpetofauna diversity onsite is considered low, with no reptile or amphibian species observed during ground truthing. This is likely due to the inherently secretive nature of reptile species, and seasonality. However, due to the area being heavily modifies, even the termitaria were not observed. The mine operations should not disturb/destroy any termitaria if observed during mining activities. During desktop study, the VMUS website displayed a list of potential reptile species that may be present in grid 2629AB, which covers the proposed mining right area and the last reptile species was recorded in 2019 namely (A) Trachylepis *punctatissima* (see *image 17)*.

Image 19: Reptiles identified on the VMUS website that might be found within the project area (iNaturalist.org)

11 AIR QUALITY

For the purpose of the baseline investigation, desktop study was done as per the area of interest and also the regional air quality in large. Measuring of gravimetric dust fallout in mg/m^2/day and particulate matter PM 10 in mg/m^3 converted to ug/m^3 in line with the standard was ensured. Comparison of different guidelines and standards was also ensured. The relevant similar referencing sites in the vicinity of the proposed project area were identified to determine previously experienced impacts. Passive and active sampling techniques were used for the baseline determination. Kindly note that no smelters and burning will be done on the vicinity of the mining right, thus an impact air quality assessment was not conducted on site, however desktop studies were done in general.

11.1 Passive sampling

Passive sampling for air quality monitoring is a method used to measure the concentration of certain air pollutants over a specific period without the need for continuous power supply or active air sampling equipment. It is a cost-effective and convenient approach to assess air quality and measure the presence of specific pollutants in the ambient air.

The passive sampling process involves the use of specialized devices or passive samplers, which are deployed in the target area for a predetermined duration. These samplers can absorb or adsorb air pollutants passively without the need for pumps or other active mechanisms. They rely on the natural movement of air and diffusion to collect the pollutants onto the sampling media such as buckets. The method of dust monitoring with buckets will be employed for this proposed project. After the sampling period, the buckets are retrieved, and the collected samples are analysed in a laboratory which is accredited with SANAS e.g Regens Laboratory to quantify the concentration of the targeted pollutants. The results provide valuable information about the air quality in the monitoring area during the sampling period.

11.2 Active sampling

No dust monitor has been implemented.

11.3 Discussion

Sensitive receptors have been identified in the immediate vicinity of the study area and proposed project area. The following may be affected by dust if not properly mitigated:

- farm homesteads

- Grazing of cattles
- Surface water bodies

The following sources were identified as potential pollutants:

11.3.1 Vehicle exhaust gases

Vehicle exhaust gasses contain pollutants like carbon dioxide (CO_2), carbon monoxide (CO), hydrocarbons, oxides of nitrogen (NOx), sulphur and PM10. Tiny amounts of poisonous trace elements like lead, cadmium and nickel. The quantity of each pollutant emitted depends on the type and quantity of fuel used, engine size, speed of the vehicle and abatement equipment fitted. Once emitted, the pollutants are diluted and dispersed in the ambient air. Pollutant concentrations in the air can be measured or modelled and then compared with ambient air quality criteria.

11.3.2 Veld fires

Veld fires are widespread across the world, occurring in autumn, winter and early spring. In addition to controlled burning for fire breaks and veld management, many fires are set deliberately for mischievous reasons. Some are accidental, like those started by motorists throwing cigarettes out of car windows. Emissions from veld fires are similar to those generated by coal and wood combustion. Whilst veld fire smoke primarily impacts visibility and landscape aesthetics, it also contributes to the degradation of regional scale air quality. Dry combustible material is consumed first when a fire starts. Surrounding live, green material is dried by the large amount of heat that is released when there are veld fires, and sometimes this material also burns. The major pollutants from veld fires are particulate matter, carbon monoxide, and volatile organics. Nitrogen oxides are emitted at rates from 1 to 4 g/kg burned, depending on combustion temperatures. Emissions of sulphur oxides are negligible (USEPA, 1996).

11.3.3 Grazing for cattle

The activities responsible for the release of particulates and gasses into atmosphere do, however, include:

- Particulate emissions generated due to wind erosion from exposed areas
- Particulate emissions generated due to the mechanical action of equipment used for tilling and harvesting operations

11.3.4 Mining activities in the project area

Mining operations like drilling, blasting, hauling, collecting, and transporting are the major sources of emissions and air pollution. The use of explosives releases carbon monoxide (CO). Dust and coal particles stirred up during the mining process, as well as soot released during aggregate transport, contributes to emissions and respiratory problems.

11.3.5 Trucks passing on the gravel road, loading and offloading raw materials

Dust emissions occur when soil is crushed by a vehicle, due to its low moisture level. Vehicles used on the roads will generate PM-10 emissions throughout the area and carry soils onto the paved roads, thereby increasing entrainment PM-10 emissions. The quantity of dust emissions from unpaved roads varies linearly with the volume of traffic.

11.3.6 Wind erosion as a result of RoM material and topsoil stockpiles

The topsoil and waste rock stockpiles generated during construction will be minimal and probably used for construction purposes on site (berm and foundations for buildings), since it is limited to the mining area.

11.3.7 Material handling (loading, hauling and tipping)

Material handling during loading, hauling and tipping as mining processes has been known to have influence on dust generation in terms of increasing the fugitive dust emissions being generated. With the different kind of materials – topsoil, soft, and hard, tipping will be negligible. The tipping is mostly associated with the ROM at the processing plant vicinity. During these activities factors such as the surrounding wind regime, the material tipping rate, and the moisture content of the material all have an influence on the dust generation at the tipping transfer points.

11.3.8 Plant crushing and screening.

There are two basic methods of crushing: compressive (jaw crushers, single and double toggles, gyratory crushers, cone crushers, roll crushers, ball mills and rod mills) or impact (rotary or vertical shaft impactors (e.g. Barmac), hammer mills (fixed or swing hammers)). Compressive crushing produces dust but does not in itself produce a great deal of air movement. The material passing through the crusher results in the dust from the process and the processed material to become airborne. Excessive clearance under the crusher can cause a lot of dust generation in the same way as a high discharge

point. Impact-type crushers, like hammer mills, act as powerful fans and not only produce dust from the impact of hammer on rock, but also blow the dust out.

In mining operations, dust control is a critical aspect of ensuring the health and safety of workers and nearby communities, as well as minimizing the environmental impact. Dry screening, in particular, presents unique challenges in managing dust emissions.

Dry screening involves the separation of materials based on particle size using screens or sieves without the addition of water. This process can generate significant amounts of airborne dust, especially when handling fine particles. To effectively control dust during dry screening, careful planning and layout of the screening system are essential.

Here are some key considerations for managing dust during dry screening:

1. Screen Layout and Design: The layout of the screening system should be designed to remove the fine particles as early as possible in the process. By separating the fine cut early on, larger particles are subjected to less agitation, reducing the amount of dust generated during screening.

2. Dust Collection Systems: Implementing efficient dust collection systems, such as dust collectors and baghouses, can capture airborne particles at the source. These systems help prevent the dispersion of dust into the surrounding environment.

3. Water Suppression: Where feasible, water can be used to suppress dust during dry screening. Wetting down the material and surrounding areas can help control dust emissions. Careful management of water usage is necessary to avoid over-wetting, which can lead to handling challenges and other environmental concerns.

4. Enclosures and Barriers: Enclosing the screening area or using barriers can help contain dust and prevent its dispersion. These measures are particularly important in areas with high dust generation potential.

5. Dust Monitoring and Assessment: Regular monitoring of dust levels and air quality is essential to assess the effectiveness of dust control measures. This data can inform adjustments or improvements to the dust control strategy.

6. Employee Training: Proper training for workers on dust control measures and the use of personal protective equipment (PPE) is crucial to ensure their safety and well-being.

7. Environmental Compliance: Mining operations must adhere to local environmental regulations and standards related to dust emissions. Compliance with these regulations is vital for the sustainable operation of the mine.

In most cases, the crushing and screening process represents a significant source of fugitive dust with high quantities of respirable fractions released into the atmosphere. Dust sources around the plant, excluding crushing and screening, include discharge into hoppers, long open chutes, and from conveyors and transfer points. High discharge heights produce an air pressure blast effect and create turbulence, which carries dust into the air. This causes particle fracture, and free fall allows the wind to pick up and carry the dust for a long distance from the discharge point.

The air quality in Mpumalanga, particularly in Middleburg, South Africa, has been a matter of concern due to its association with mining and industrial activities in the region. The province of Mpumalanga is known for its significant coal mining operations and power generation facilities, which can contribute to air pollution and air quality challenges.

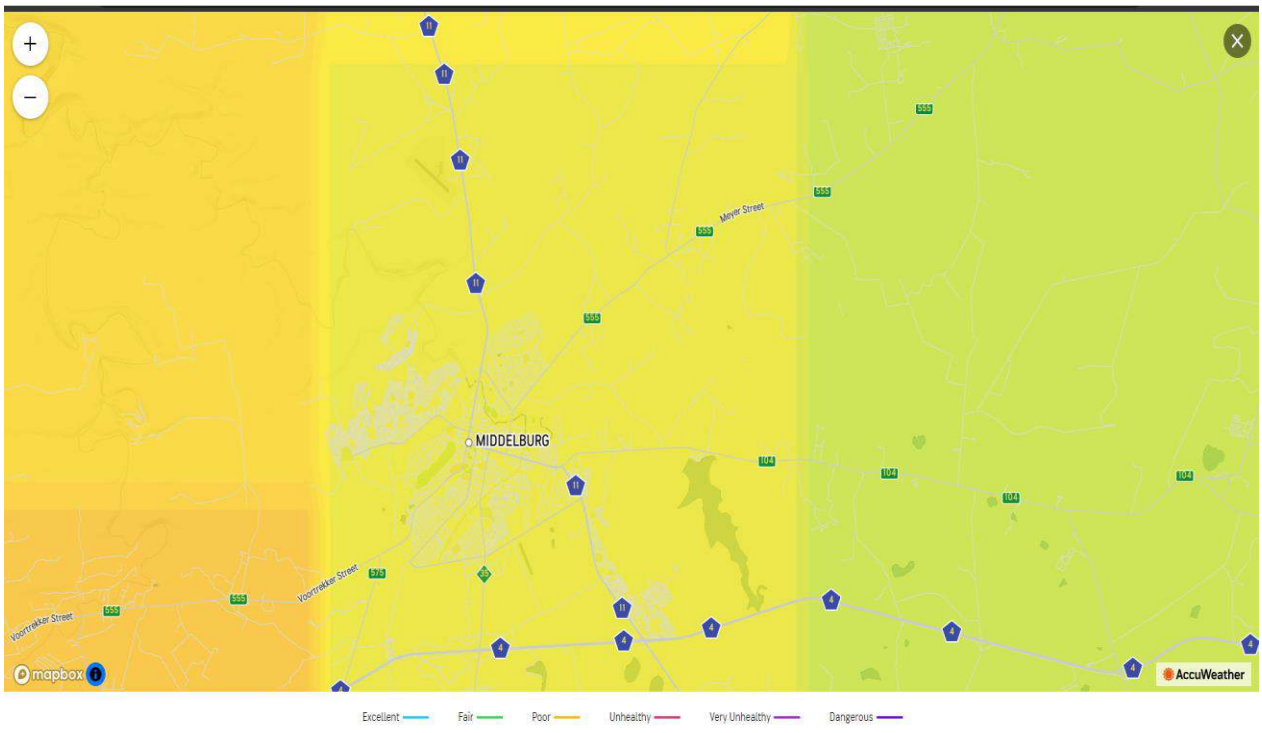


Figure 54: Air quality at the proposed area (https://www.accuweather.com/en/za/middelburg/299533/air-quality-index/299533)

12 NOISE

A noise impact assessment must be completed if:

- An industry is to be situated within 1,000m of a noise-sensitive development (SANS 10328:2008);
- It is generally required by the local or district authorities as part of the environmental authorisation or planning approval in terms of Regulation 2(d) of GN R154 of 1992.

Appendix 6 of GN R 982 of 2014 issued in terms of the NEMA, defines minimum information requirements for specialist reports. In South Africa, the document that addresses environmental noise is SANS 10103:2008. It has recently been revised and aligned with the guidelines of the World Health Organisation (WHO). It provides the maximum average ambient noise levels during the day and night to which different types of developments indoors may be exposed. In addition, SANS 10328:2008 (Edition 3) specifies the methodology to assess the potential noise impacts on the environment due to a proposed activity that might impact the environment. This standard also stipulates the minimum requirements to be investigated for scoping purposes and a detailed specialist report.

These minimum requirements are:

1. The purpose of the investigation
2. A brief description of the planned development or the changes that are being considered
3. A brief description of the existing environment
4. The identification of the noise sources that may affect the particular development, together with their respective estimated sound pressure levels or sound power levels (or both)
5. The identified noise sources that were not taken into account and the reasons why they were not investigated
6. The identified noise-sensitive developments and the estimated impact on them
7. Any assumptions made with regard to the estimated values used
8. An explanation, either by a brief description or by reference, of the methods that were used to estimate the existing and predicted rating levels
9. The location of the measurement or calculation points, i.e. a description, sketch or map
10. Estimation of the environmental noise impact
11. Alternatives that were considered and the results of those that were investigated
12. A list of all the interested or affected parties that offered any comments with respect to the environmental noise impact investigation
13. A detailed summary of all the comments received from interested or affected parties as well as the procedures and discussions followed to deal with them

14. Conclusions reached and recommendations made, i.e. if there could be a significant impact, or if more information is needed, a recommendation that an environmental noise impact assessment be conducted
15. If remedial measures will provide an acceptable solution, which would prevent a significant impact, these remedial measures should be outlined in detail and included in the final authorisation, if the approval is obtained from the relevant authority.

The SANS 10328:2008 and Noise Control Regulations defines a noise-sensitive development to include any of the following:

- residential districts
- non-residential districts
- educational, residential, office and health care buildings and their surroundings
- churches and their surroundings
- auditoriums and concert halls and their surroundings
- recreational areas

The receptors which were identified on site as shown on Figure 55 include:

Figure 55: Study area and receptors

The noise level on a typical city street with automobile traffic averages 60-65db, with larger vehicles like heavy trucks and diesel buses causing noise of up to 90db. Noise is already created by the R35 road and the gravel route that runs next to the project area which is used by trucks that transport crops.

Since noise is invisible, its impact on the surrounding environment is often difficult to determine. Where possible, noise reduction equipment will be fitted onto machinery. All equipment (especially diesel-powered) will undergo regular maintenance, and a programme will be implemented to check for defective or deteriorating vehicle noise emissions.

12.1 EIA investigation of existing and future noise levels

The operations of certain industrial operations may occur over a 24-hour cycle (day and night). The most important time of investigation will be during the night (defined by SANS10103:2008 as 22:00-06:00). Five scenarios will be investigated, including planning, construction, operation, closure and decommissioning and post-closure phases.

This will allow for comprehensive Engineering for Next Internetworking Applications (ENIA) during any project phase. The most relevant phase is the operational phase, as the noise capacity generated during this phase can be long-term. This document briefly discusses the vibrations and blasting together with noises that will impact fauna.

12.2 Phases investigated

12.2.1 Design phase

There will be no noise generating activities during this phase. During this phase certain mitigation measures can, however, be implemented, including design elements or management decisions which will eliminate or reduce noise generation activities.

12.2.2 Construction phase

Construction-related scenarios entail the implementation of infrastructure (subsoil, concrete and steel works, etc.) and haul routes; only daytime scenarios were considered. Most construction work will be conducted during daytime. At times, however, construction may be conducted during the night due to:

- Concrete works that must be done in one pour (e.g. concrete slabs)
- Working overtime due to schedule constraints caused by bad weather, etc.

12.2.2.1 Wash plant

The most relevant noisy activities are:

- Sub-soil works (compaction of soils, trenching, etc.)
- Concrete pouring and vibration (an on-site batching plant was not considered)
- Cranages moving large components and materials

A "general" noise scenario will be investigated at infrastructure areas (general referring to an accumulation of power tools, trucks, etc. used by the construction crew).

12.2.2.2 Delivery/access routes

Construction or upgrading or existing roads may include the following noise-generating activities:

- Delivery of different road paving aggregates and stockpiling them on site
- Soil excavation, removal of soil for foundations (with a grader, if required)
- Soil compaction with a vibrator roller
- Roads may be paved with a road paver and asphalt truck working in conjunction

12.2.2.3 Blasting

A review of the project and the surrounding areas was done before any specific analysis is undertaken and sensitivity mapping was also conducted, based on typical areas and distance from the proposed mining area. This sensitivity map uses distances normally associated where possible influences may occur and where influence is expected to be very low or none. Two different areas were identified in this regard:

Range	Criteria	Description
≤500m	High sensitivity	The area within 500m is considered an area that should be cleared of all people and animals prior to blasting. Levels of ground vibration and air blast are also expected to be higher closer to the blasting site.
500 – 1500m	Medium sensitivity	In this area, the possibility of impact is still expected, but it is moderate. The expected level of influence may be moderate, but there may still be reason for concern, as levels could be moderate enough not to cause structural damage but still upset people; and
≥1500m	Low sensitivity	In this area, it is relatively certain that influences will be low with low possibility of damages and limited possibility to upset people.

Desktop studies was done to preliminary check the orientation and the feel of the environment where the proposed project is located. As part of desktop studies, screening tool was used to assess the applied area and its surroundings.

See a full specialist study attached as appendix 11.

12.2.2.4 Operational phase

12.2.2.5 Haul road design

Three separate scenarios will be evaluated based on the RoM tonnes per month (tpm) that the open cast pits will be delivering. These include 10, 20 and 30 heavy vehicles per hour on long-haul routes.

12.2.2.6 Discard/mineral residue deposits management

For a designed scenario, the ADT will operate as close as possible to the receptors, while remaining on the project footprint. The assessed scenario will consider a direct line of sight from the residue deposit in relation to receptors, simulating times when equipment operates at the highest point on the footprint. It should be noted that berms would likely be implemented on the footprint of the project (e.g. a 2m-high berm on project footprint), but noise sources can extend over these berms (e.g. exhaust port above cabin of heavy equipment).

12.2.2.7 Closure and decommissioning phase

In general, removal and rehabilitation activities have a significantly lower noise impact than the construction and operational phases. The closure phase will be consolidated and considered the same as the construction phase for the following reasons:

- Removal and rehabilitation activities are generally less intense than construction and operational activities
- Noise levels are lower and will be limited to daylight hours, reducing the noise impact significance
- The impact will be similar or less than the construction phase impact.

12.2.2.8 Post-closure phase

No potential noise impact is envisaged during this stage as per our desktop study.

13 SITE OF ARCHAEOLOGICAL AND CULTURAL INTEREST

Singo consulting (Pty) Ltd has appointed a specialist (Integrated Specialist Services (Pty) Ltd) who will conduct a heritage impact assessment. Relevant published and unpublished sources were consulted to generate desktop information. This includes online databases such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) website, Google Earth, Google Scholar, and South African Heritage Resources Information System (SAHRIS). Published works on the archaeology, history and paleontology will also be consulted. Thus, the proposed mining right application site will be considered in relation to the broader landscape, which is a key requirement of the International Council on Monuments and Sites (ICOMOS) Guidelines.

As part of the desktop study, published literature and cartographic data, as well as archival data on heritage legislation, the history and archaeology of the area were studied. The desktop study will be followed by field surveys.

13.1 Consultation

The EIA public participation process was conducted by the EAP and specialists. The EIA public participation process invited and addressed comments from affected communities and all registered heritage bodies on the matters related to the proposed mining project including heritage concerns that may arise as a result of the project. Affected parties such as community members had concerns with regard to their graves and they were assured that no new impacts will be introduced to graves as there are also mining activities that are ongoing surrounding the proposed area however, a community meeting will be organised to again address the issue as the community was given an opportunity to discuss among each other of their expectations from the proposed project pertaining graves.

14 SOCIO-ECONOMIC CHARACTERISTICS

14.1 General

The Tornowize Mine is to be located in the Mpumalanga Province. The mine lies at Steve Tshwete Local Municipality.

14.2 Locality

The geographical location of the area of interest is significant within the province of Mpumalanga. The area is strategically located within the region's mining landscape, approximately 22.45 km north-east of Kriel and 6.04 km south of Komati, along the R35 provincial road. One noteworthy feature is the area of interest's proximity to existing operating mines. This location puts it in the midst of a thriving mining cluster, which includes the Middelkraal mine, Goedehoop Colliery, and Ilanga Colliery. The presence of these operational mines emphasizes the area's established mining activity and expertise. The accessibility of the area via the R35 provincial road enhances connectivity to surrounding areas and transportation routes. This has implications for logistical considerations and the ease with which resources can be moved.

The geographical context and proximity to active mining operations suggest that the area of interest is part of a mining hub within the province of Mpumalanga. This geographic setting, along with existing mining ventures, could potentially influence various aspects of the proposed project's planning and execution, such as infrastructure, socioeconomic dynamics, and environmental considerations.

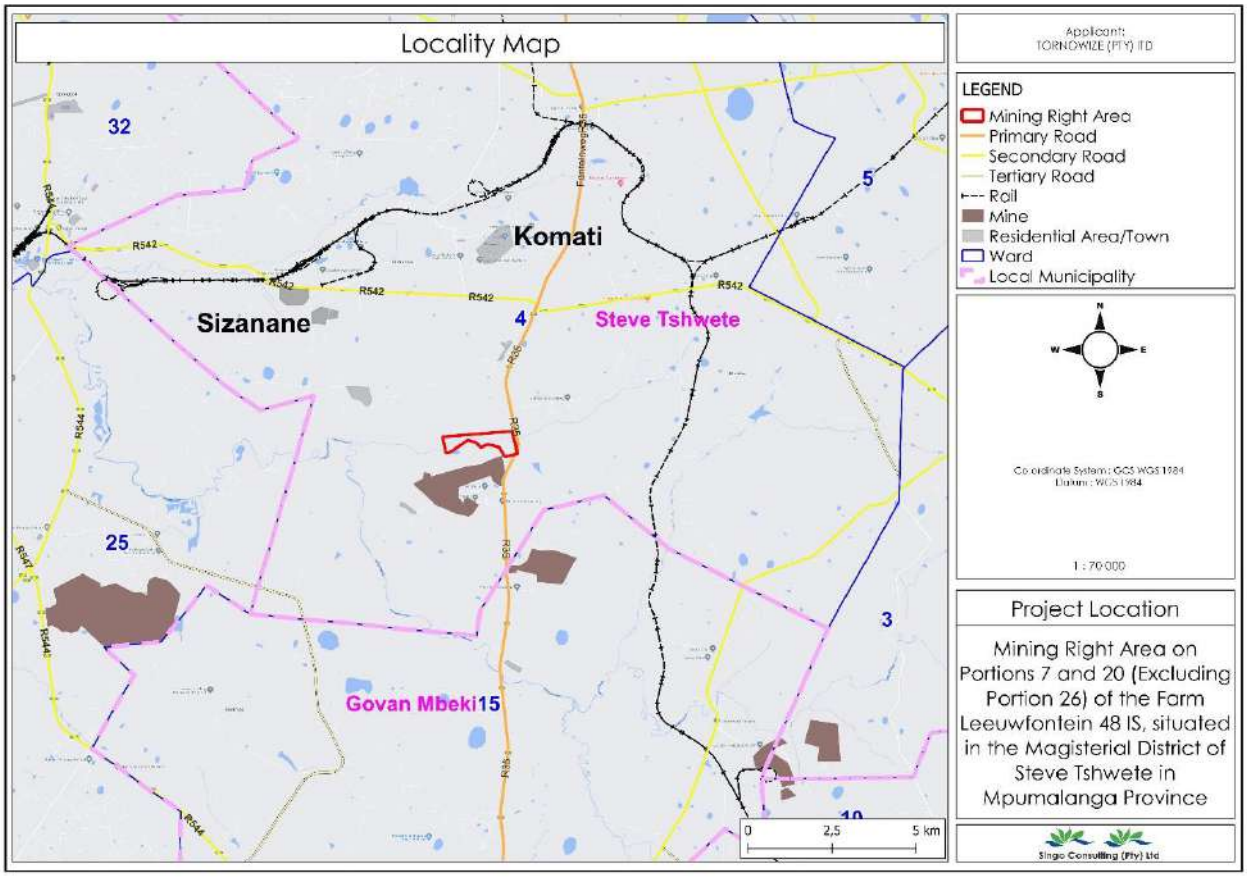


Figure 56: Locality map

14.3 Population and development analysis of municipality

14.3.1 Population size and composition

Population Size

This is according to Steve Tshwete IDP (2020-2021). It is imperative to note that population growth statistics was taken into consideration throughout the IDP planning processes of the municipality. Specific reference is made to the latest 2016 Community Survey in comparison to the Census 1996, 2001, 2007 Community Survey and 2011 Census in order to see the trend.

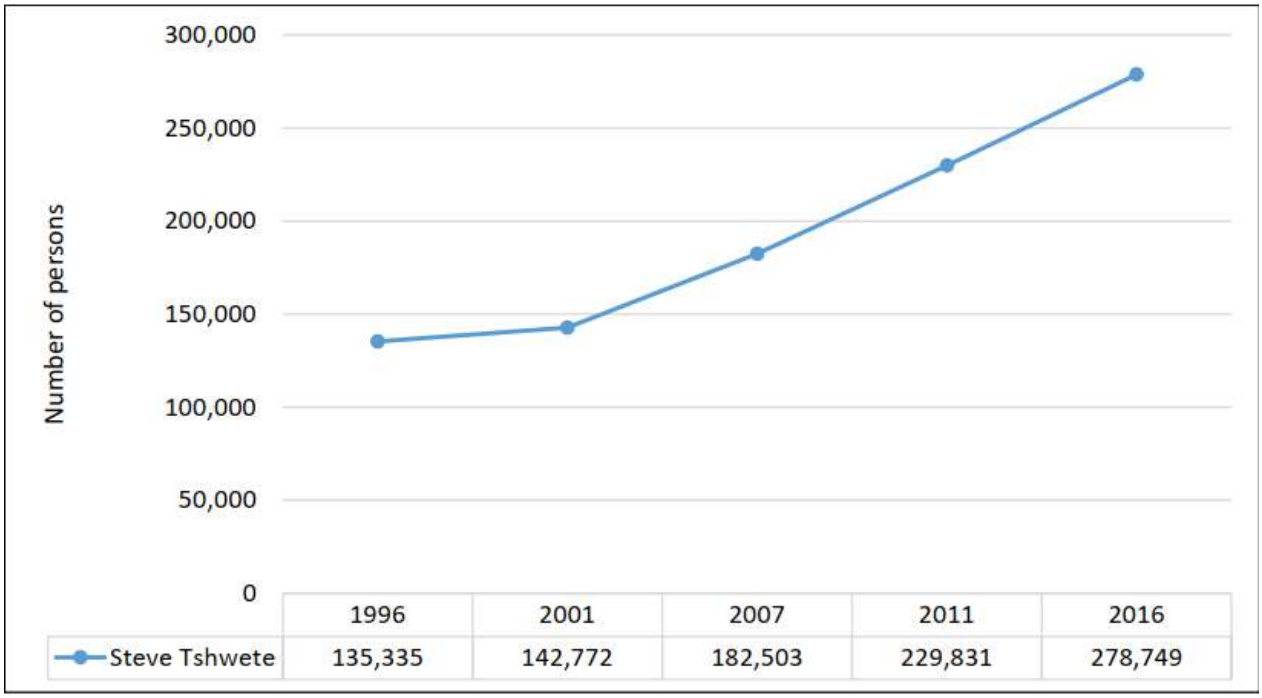


Figure 57: Population Size 1996,2001,2007,2011,2016 (Stats SA Community profile)

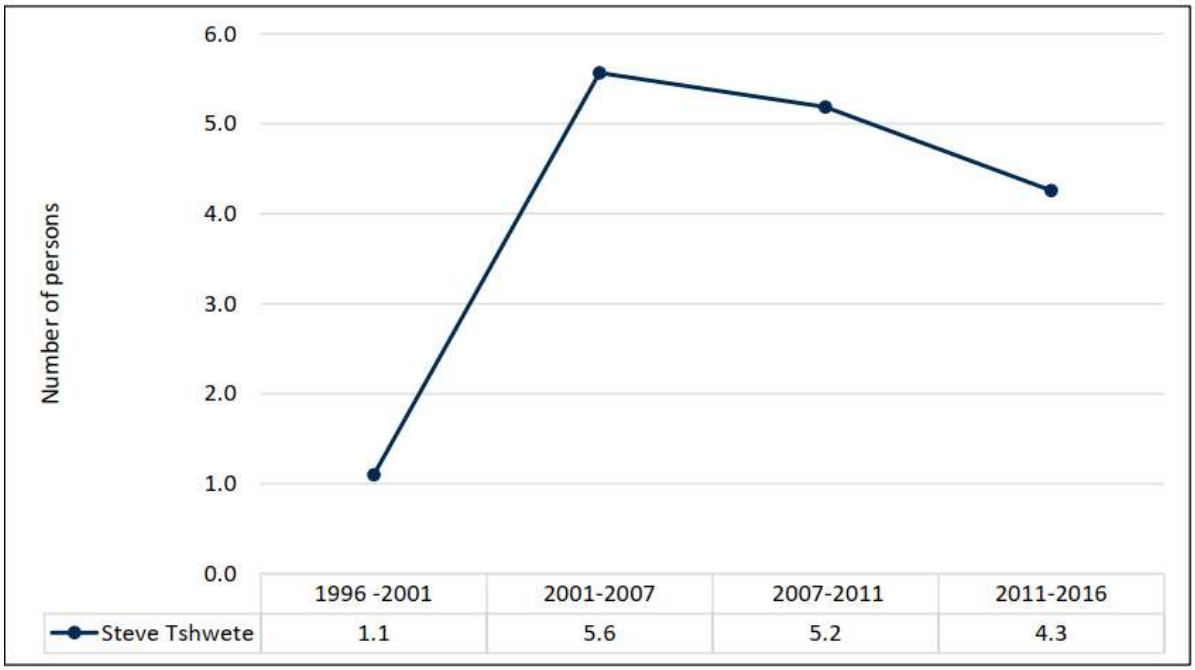


Figure 58: Population Growth rate (Stats Sa Community profile)

The figure 49 and 50 indicate that Steve Tshwete is increasingly under pressure due to population growth. In 2016, the total population in Steve Tshwete was 278 749. Population grew by 4.4 %. Over the nine year period from 2007 to 2016, STLM's population increased by 9.7%. In 2016, the municipality ranked the 7th largest population in the province and 19.3% of total population of Nkangala as per the 2016 community servey.This could be attributed to the number of industries that were opened within

the 10 years (2001-2011) that attracted workers into Middelburg. It is estimated that the population number for 2030 will be at more or less 509 000 people given the historic population growth per annum which will put pressure on the infrastructure and basic service delivery and eventually also sustainable job creation in the long run

14.3.2 Population distribution

Population distribution is the arrangement or spread of people living in a given area according to variables such as age, race, or sex.

Race

African/ black population continues to constitute the highest group followed by the white population since 1996 to date. Asian and coloured population constitute the minor population group.

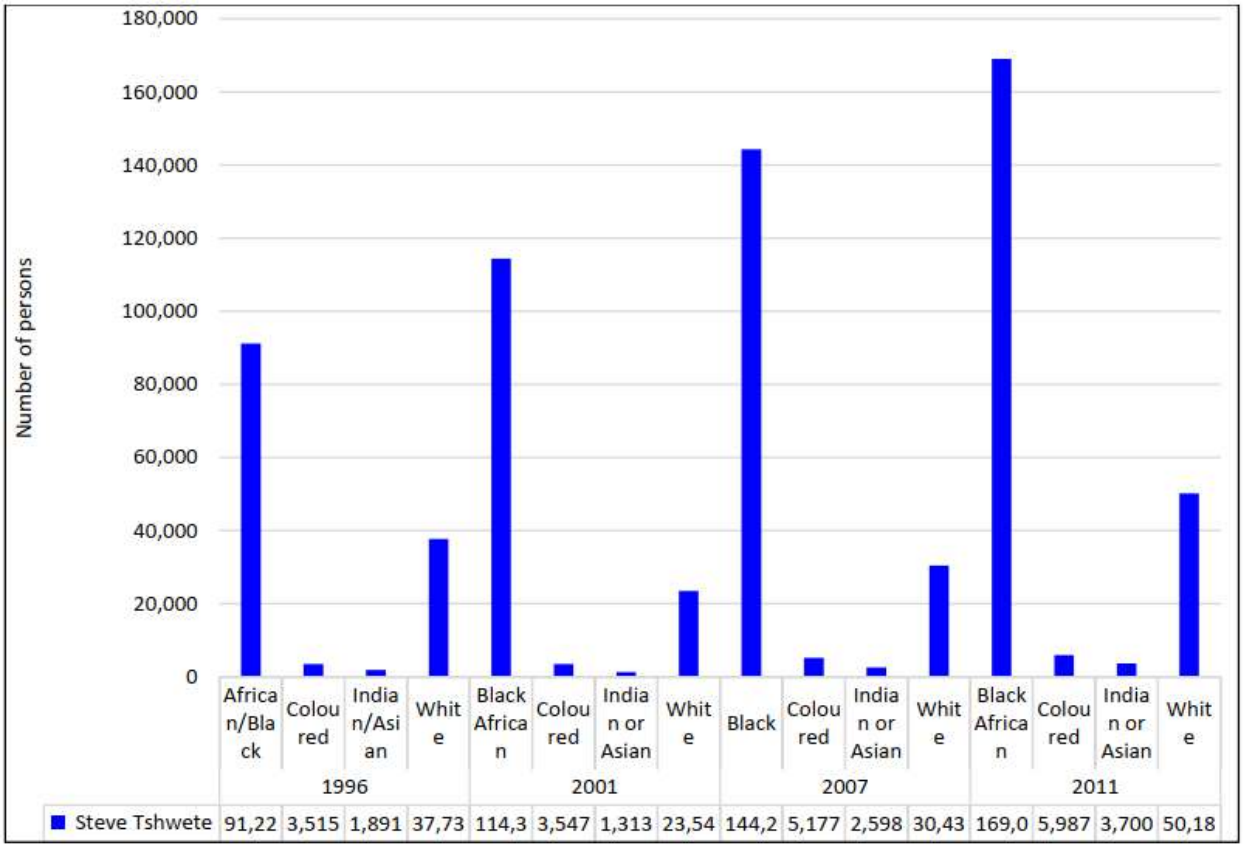
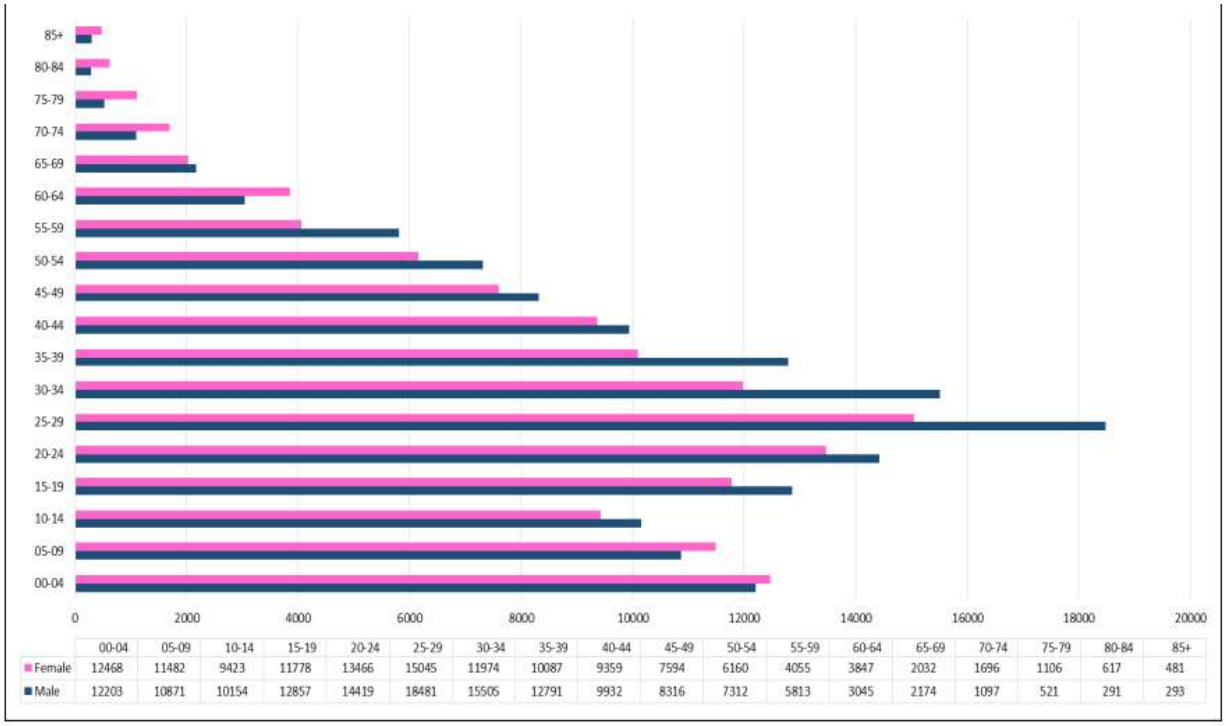


Figure 59: Population Group (Stats SA Community Profile)

Sex Ratio

The male population in Steve Tshwete is higher than female population in Steve Tshwete. Such an age structure is observed in population that attracts migrants due to lucrative employment opportunities.

There are manufacturing, industrial and mining companies in Steve Tshwete that attract people from across the country and other African countries. According to the Census 2011 migration data, STLM attract people, particularly from Limpopo (8%), Gauteng (7%), KwaZulu Natal(4%) and regionally(4%).



	00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Female	12468	11482	9423	11778	13466	15045	11974	10087	9359	7594	6160	4055	3847	2032	1696	1106	617	481
Male	12203	10871	10154	12857	14419	18481	15505	12791	9932	8316	7312	5813	3045	2174	1097	521	291	293

Figure 60: Sex ratio (Stats SA census 1996,2001,2011)

Age

It is highlighted in the pyramid that a significant portion of the population growth is between 20 and 34 cohort as well as the infants (0-4 cohort). In reference to figure 53 below, the most populous age group in 2016 were between ages 25 to 29. This could be the result of people migrating to the municipality seeking job opportunities as Steve Tshwete is considered to be one of the economic hub of Mpumalanga and is often the preferable choice of destination by job seekers across Mpumalanga Province.

Figure 53 indicates that the Youth population (15-34 years) constitute about 40.7% of the total population and the share of the male population in 2016 according to the CS was 52.4% and females 47.6%.

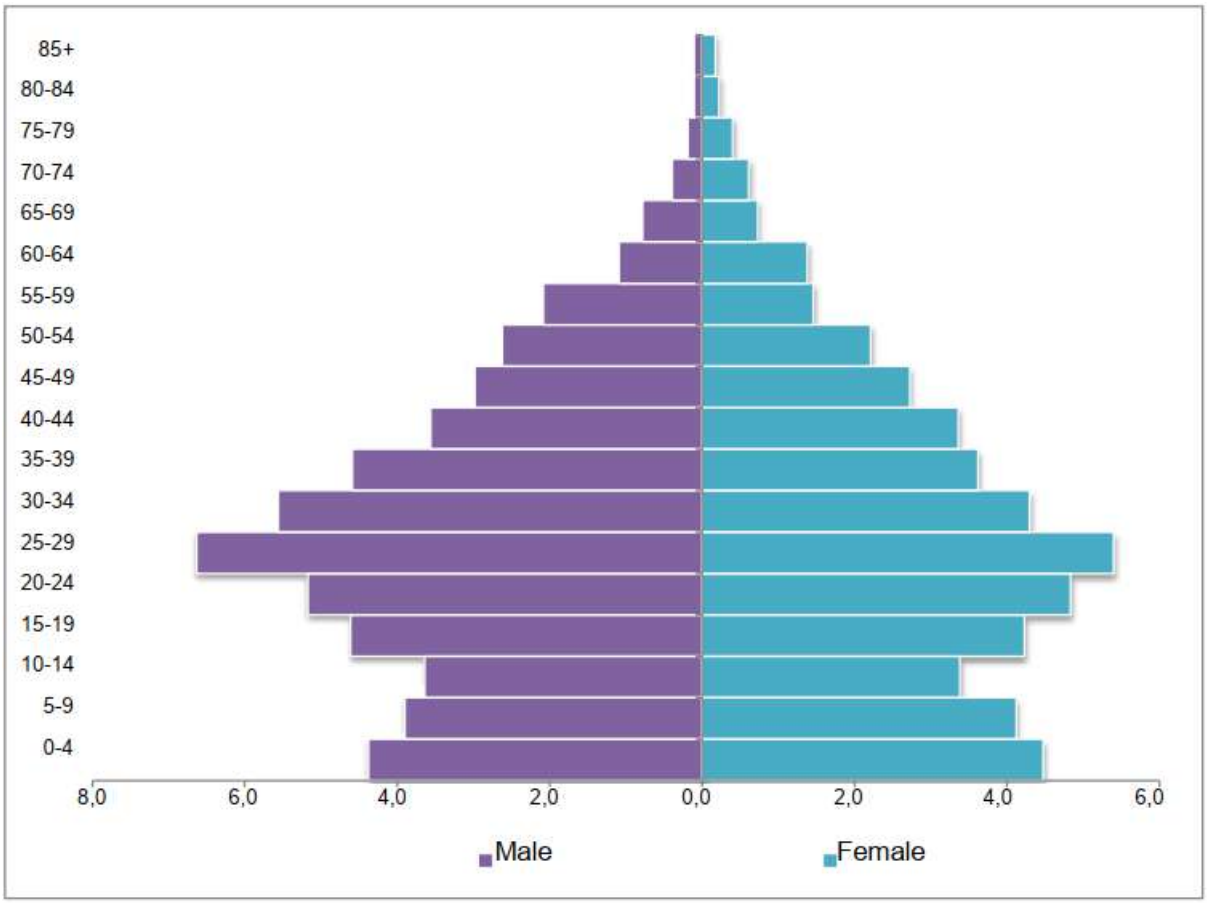


Figure 61: Distribution of population by age (CS 2016)

14.3.3 Educational attainment

In terms of education, the majority of the population of the municipality have some form of education with only 14.4. % of the population having no schooling as depicted in the diagram below (Census 2011). According to the 2016 Community Survey, the population in Steve Tshwete aged 20+ completed grade 12, increased from 73 793 in 2011 to 97 943 (increase of 24 150) in 2016 which translate to an increase of 32.7% in the relevant period. Steve Tshwete's grade 12 pass rate improved from 74.4% in 2011 to 86.3% in 2015 and became the 2nd highest of the municipal areas of the Province.The area achieved an admission rate to university/degree studies of 30.5% in 2015. In 2016, 22.9% grade 12s obtained admission to university/degree studies. Over the years, there has been great improvement of about 4.7% for grade 12 pass rate improved in STLM from 85.6% in 2014 to 89.0% in 2019 – ranked no 1 again in the province. The municipality, department of education and private sector to ensure that the 11% learners who did not qualify for university admission get accommodated in other institutions such as TVET colleges and Technikons.

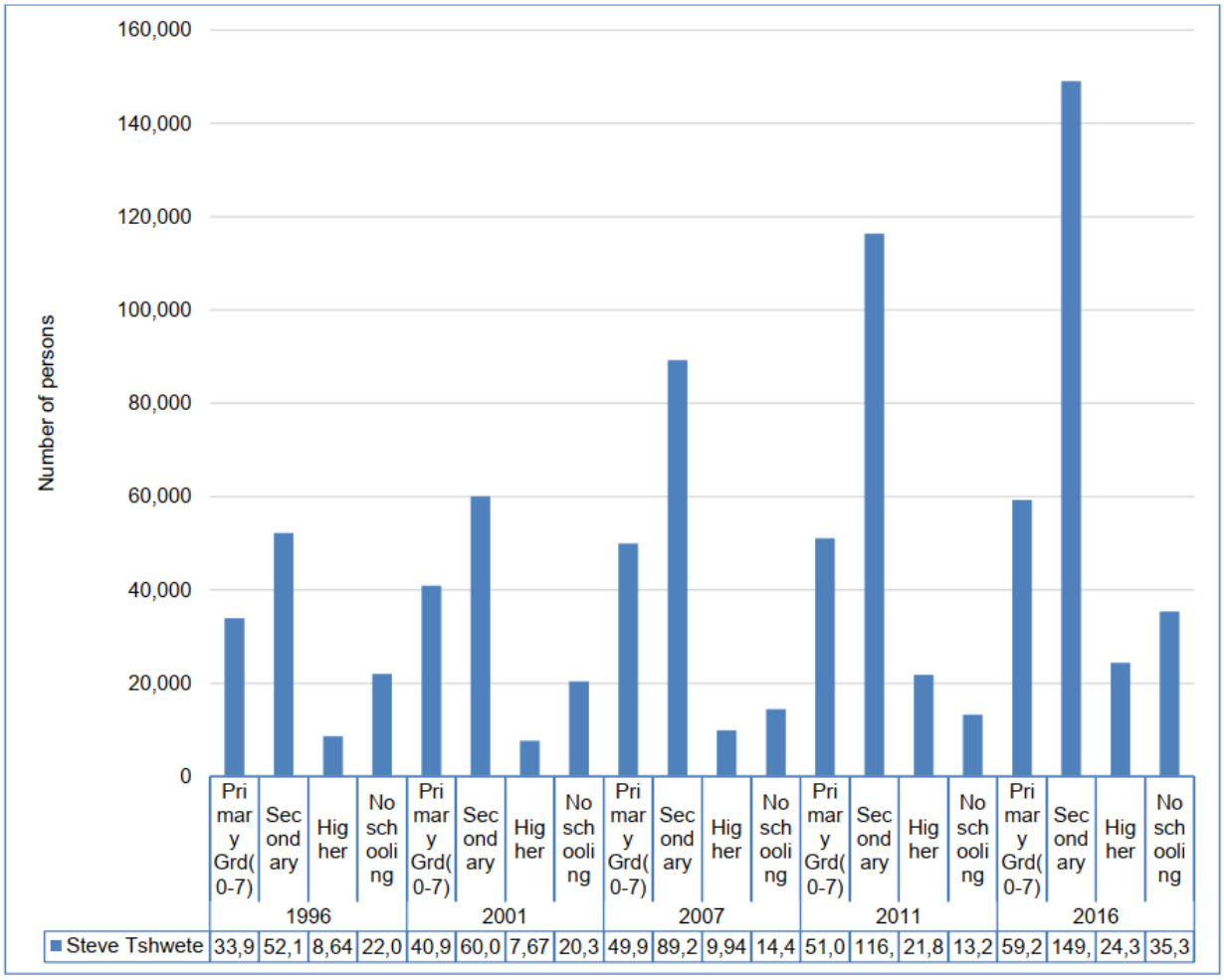


Figure 62: Highest education attainment 20+ years (Stats SA community profile)

14.3.3.1 Socio Economic Analysis

The socio-economic analysis is specifically aimed at spatial related matters, i.e. employment, income and economic profile. This analysis is based on a municipal level to give a broader overview of the Municipality.

Poverty and Inequality

According to the municipality IDP, In the last ten years the municipality has made huge investments in infrastructure and housing development as a result of that, poverty and inequality has been decreasing steadily. However, the current rate of unemployment and poverty are key factors contributing to high inequality levels.

INDICATORS	2001	2011	2015
Poverty rate	31.6%	25.9%	21%
Number of people in poverty	48 865	59 929	53 567
Poverty gap (R million)	R54	R110	R575

Source: Statistics South Africa Census 2001, 2011, 2016

Table 14: Poverty in Steve Tshwete.

According to the 2016 Community Survey of StatSA, the poverty headcount of Steve Tshwete increased from 4.3% in 2011 to 5.1% in 2016 which then made the municipality to be 4th lowest in the Province however the poverty intensity decreased slightly from 42.0% to 41.7% in the same period. In 2015, Steve Tshwete's share of population below the lower-bound poverty line was the 2nd lowest (favourable) among the municipal areas.

14.3.3.2 Human development index

Human Development Index (HDI) is defined as a standard measure of determining whether an area is developed, developing and developed. According to SERO 2018 report, the average trend on the HDI seems to be stable between 2011 and 2014 at 0.69 whilst bwteen 2015 and 2018 sitting at 0.69. Improved Human Development Index (HDI) from 0.67 in 2015 to 0.69 in 2018 – the highest in the province.

The predetermined life expectancy in South Africa is 65 and as a result that confirms the decline of the population group between the ages 65 and 85+ as depicted in the pyramid (figure 1). On the other hand, the high death rate within these population groups could be attributed to the top ten leading causes of death as listed by the STATS SA 2011, namely, influenza and pneumonia, other external causes of accidental injury, Tuberculosis, Intestinal infectious diseases, other forms of heart disease, Cerebrovascular diseases, Ischaemic heart diseases, Chronic lower respiratory diseases, Human immunodeficiency virus [HIV] disease, Diabetes mellitus.

Gini coefficient

The Gini coefficient is an index between zero and one, which is used to measure the gap between the rich and the poor. The gini-coefficient measure for Steve Tshwete Local Municipality was at 0.68 in 2001 and increased to 0.08 in a period of 10 years i.e. 0.60 in 2011. These figures express a minimal change in terms of the income level inequalities between the period of 2001 and 2011.

Social Grants

The table below shows the number of beneficiaries of social grants as per April 2018. Youth is generally, not targeted by South Africa's social welfare system. Child Grants followed by the old age grants were the highest payouts for the department while R303 837 was paid out to Disability Temporary Period.

NUMBER OF ACTIVE GRANTS PER LOCAL MUNICIPALITY PER GRANT TYPE		
Grant Type	**Total**	**Amount Paid**
Care Dependency Grant	481	R817 700
Child Support Grant	38 295	R15 700 950
Disability Grant	2 676	R4 549 200
Foster Care Grant	1 327	R1 273 920
Grant-In-Aid	231	R94 710
Old Age Grant	11 009	R18 768 460
Total	**54 019**	**R41 204 940**

Table 15: Social Grants beneficiaries (Dept of social security agency, 2019)

14.4 Employment

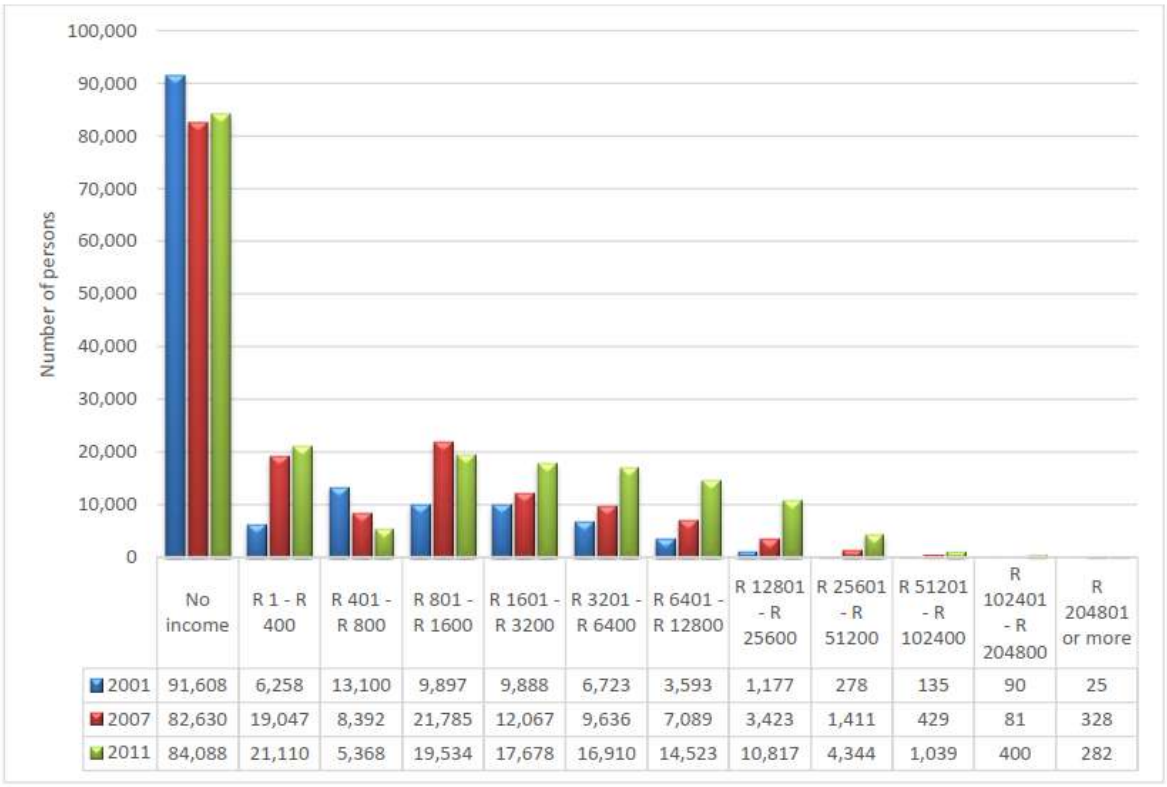
According to the Steve Tshwete municipality IDP (2020-2021), Steve Tshwete economy is one of the biggest economic areas and it is therefore expected that a significant number of employment opportunities are being provided in the area. Mining, trade and manufacturing are the major leading employment drivers in Steve Tshwete LM.

The unemployment rate of Steve Tshwete decreased slightly from 19.7% in 2011 to 16.4% in 2015 and was the lowest among all the municipal areas of Mpumalanga. In 2018, the municipality has recorded a slight increase yet again from 2015 figures to just 17,9% . Unemployment rate for females has increased from 21.8% in 2015 to 23.1% in 2018 and that of males from 12.9% in 2015 to 14.5% in 2018. Though there is a high growth rate of unemployment, Steve Tshwete still has the lowest percentage in the province. Youth unemployment rate according to the 2011 Census figures 27.1% - challenge with especially very high youth unemployment rate of females. The largest employing industries in Steve Tshwete are trade (including industries such as tourism), community/government services and mining. High labour intensity in industries such as agriculture, trade and construction.

14.4.1 Individual income

According to the census, the number of people without an income has decreased from 91608 to 84088 between 2001 and 2011. The majority (63690) of Steve Tshwete individual earn within the R1-R 3200 followed by about 47 633 individuals who earn from R3200-R102 400 in 2011, there

has been an increase this could be attributed to the number of mines and manufacturing industries located in STLM. The share of population in Steve Tshwete below the so-called lower-bound poverty line (of Stats SA) deteriorated from 23.4% in 2015 to 26.9% in 2018. In 2018, Steve Tshwete's share of population below the lower-bound poverty line was however, the lowest (favourable) among the municipal areas. The number of people below the lower bound poverty line was high at more than 70 000 people in 2018. Thi the very same year, Steve Tshwete's share of population below the lower-bound poverty line was however, the lowest (favourable) among the municipal areas. Individual income distribution in Steve Tshwete is detailed in the figure below.



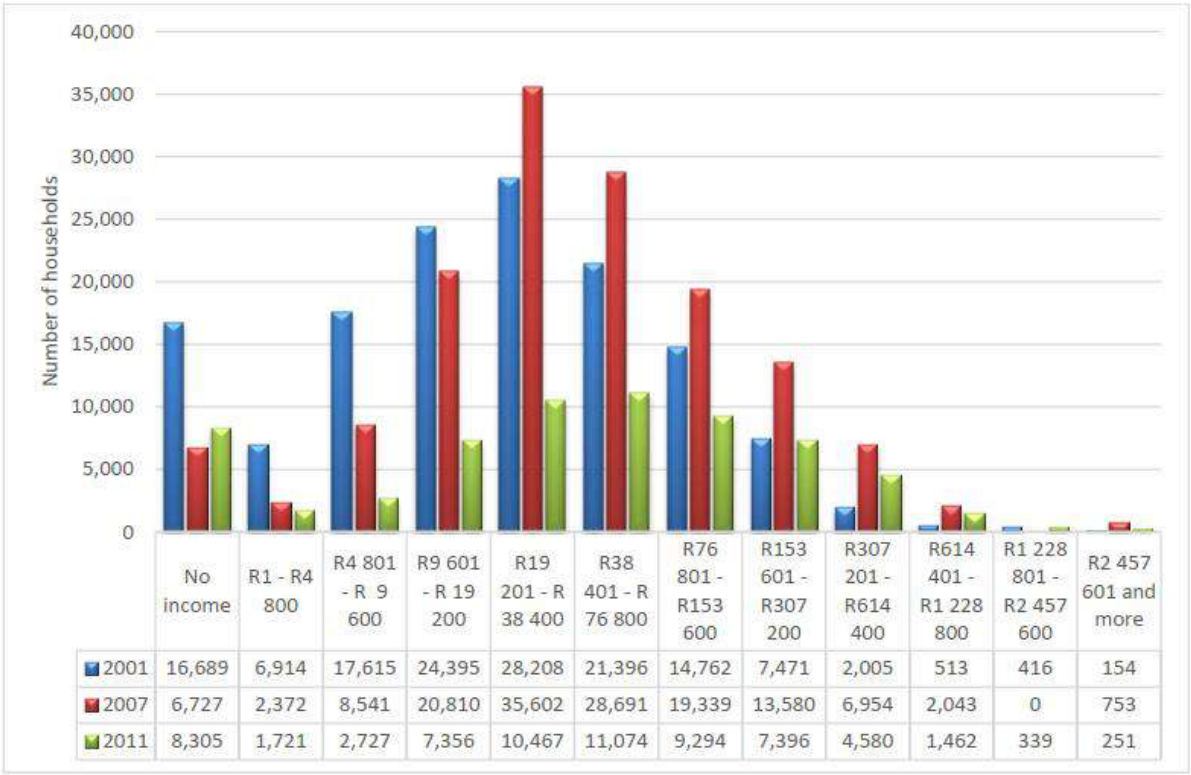
	No income	R 1 - R 400	R 401 - R 800	R 801 - R 1600	R 1601 - R 3200	R 3201 - R 6400	R 6401 - R 12800	R 12801 - R 25600	R 25601 - R 51200	R 51201 - R 102400	R 102401 - R 204800	R 204801 or more
2001	91,608	6,258	13,100	9,897	9,888	6,723	3,593	1,177	278	135	90	25
2007	82,630	19,047	8,392	21,785	12,067	9,636	7,089	3,423	1,411	429	81	328
2011	84,088	21,110	5,368	19,534	17,678	16,910	14,523	10,817	4,344	1,039	400	282

Source: Statistics South AfricaCensus 2001 and 2011

Figure 63; Individual income distribution in Steve Tshwete 2001 & 2011

14.4.2 Household income

According to Census 2011, the average annual household income increased from R 55 369 per annum in 001 to R134 026 per annum in 2011. This represents an absolute increase in nominal terms over the 10-year period, which was the highest among the eighteen local municipalities in the province. This is closely related to its higher education levels and employment rates.



	No income	R1 - R4 800	R4 801 - R 9 600	R9 601 - R 19 200	R19 201 - R 38 400	R38 401 - R 76 800	R76 801 - R153 600	R153 601 - R307 200	R307 201 - R614 400	R614 401 - R1 228 800	R1 228 801 - R2 457 600	R2 457 601 and more
2001	16,689	6,914	17,615	24,395	28,208	21,396	14,762	7,471	2,005	513	416	154
2007	6,727	2,372	8,541	20,810	35,602	28,691	19,339	13,580	6,954	2,043	0	753
2011	8,305	1,721	2,727	7,356	10,467	11,074	9,294	7,396	4,580	1,462	339	251

Source: Statistics South AfricaCensus 2001 and 2011

Figure 64: Household income 2001,2007,2011

14.4.2.1 Access to household`s services

Steve Tshwete Local Municipality has made great strides in providing this basic service to its communities. The table below reflect the progress made:

BASIC SERVICES	2011	2016
% of households with flush or chemical toilets	86.8%	81.9%
% of households with connection to piped (tap) water: on site & off site	98.2%	85.4%
% of households with electricity for lighting	90.8%	90.1%
% of households with weekly municipal refuse removal	84.7%	85%

Source: Stats SA Community Profiles (2011 & 2016)

Table 16: Households with access to services 2011 & 2016

Water and sanitation

Even though Access to water and sanitation remains fairly high in STLM, due to households increase between 2011 and 2016, the percentage of households with water and sanitation has decreased. The 2016 Community survey reveals that, 81.9 of households had access to potable water (household connections and communal stands) and 85.4% had flush and chemical toilets. In 2014, the Blue Drop Certified Systems awarded STLM a blue drop score of 97.1% (ranked 1st in the province, noting that the municipality continues to manage drinking water within their area of jurisdiction with distinction.

STLM was ranked second in terms of waste water services in the Green Drop Report which was at 61.9%.

Electricity

STLM is licensed to supply the following areas with electricity: Middelburg, Hendrina, Kwaza, Doornkop, Komati, Blinkpan and Koornfontein and comprises of the following divisions: Small consumer, Distribution and Planning and bulk connection. The provision of electricity within the municipality continues to decrease 0.7 between 2011 and 2016.

Refuse Removal

Census 2016 shows that the municipality continues to improve expanding the access to refuse removal. About 85% households had access to refuse removal atleast once a day. The municipal service extends to all the municipal towns but exclude the mining towns and rural areas which are self serviced. Bulk containers and provided for places like Kranspoort. Somaphepha, Mafube and Doorenkop have a transfer station and big containers that are serviced by the municipality.

Roads and stormwater

In 2011, the municipality had about 826 km of total road network. Out of the 828 km about 660 km were tarred and about 162.4km were gravel roads. The 162.4km includes roads within farm areas which are privately owned and the municipality is unable to provide tarred roads.

14.4.2.2 Conclusion

Steve Tshwete biggest contribution to the GDP is the mining sector and manufacturing, mining coal in the proposed decreasing the unemployment rate not just in the local municipality but also in the district, thus it will add to the con project it is anticipated to take 15 years as stated by the Competent Person Report.

During the operational phase, the mine will employ approximately 250 permanent employees, ranging from skilled to se varying education levels. It is estimated that 50 illiterate workers will be employed to fill unskilled vacancies. Skilled management, junior qualified and experienced specialists, technical and academically qualified workers, mana superintendents, and includes:

- Mine Manager
- Environmental Specialist
- Technical Superintendent
- Mine Planner
- Surveyor
- Safety officer
- Production Geologist and Geologist Assistant
- Secretary, Accountant and Office staff

- Processing Plant Manager
- Boiler Marker
- Electricians, etc.

Semi-skilled employment includes positions with discretionary decision-making power, such as:

- Shuttle car operator and vehicle operator
- Water tanker operator
- Pump station attendants
- General crew, etc.

Employees will be responsible to:

- Assist in career development plan
- Be motivated and willing to participate in career development
- Acquire competencies as provided by Tornowize Mine
- Take charge of self-development
- Adhere to service obligations

A skills, training and development policy and plan, together with social and labour plan has been drawn up with the purpose to provide guidelines the implementation and maintenance of comprehensive training and development strategies and for procedures.

15 TRAFFIC MANAGEMENT

The route system that can be used to access the proposed site is R542 and R35, the study will assess the routes and provide current roads and traffic conditions. The roads to be affected by the proposed mine activities are R542, R35 and Internal Farm Roads used by the landowner/users.

Figure 65: Associated routes that are close to the mine area (Google Earth)

The purpose of specialist traffic and transportation study is therefore to estimate the daily traffic that the proposed construction and operations is likely to generate. Furthermore, this study will endeavour to assess the impact of this additional traffic on the surrounding road network and make recommendations for mitigation or improvements.

15.1 Access roads

The site was found to have relatively moderate traffic volume consisting of both the heavy and light vehicles. The R35 a has the moderate traffic volume with no peak hours within the vicinity of the proposed site, the R38 also have moderate traffic volume consist mainly of heavy trucks also with no peak period. Other roads to be used during mining are secondary roads with very low traffic volumes and all busier throughout the day.

The two routes alternative system will be as follows:

(i) The area can be accessed through a gravel road from the R35 that runs from Komati to Bethal and ;

(ii) The area can be accessed from the gravel road that extends from the R544 that cuts the R547 that runs from Kriel to the R542.

15.2 Current land uses

The current land use and land cover of the proposed site includes:

- Mine
- Built up area
- Wetlands present on site
- Waterbodies
- Bare land

Images of current land use are enclosed below;

Table 17: Current land use images on the site

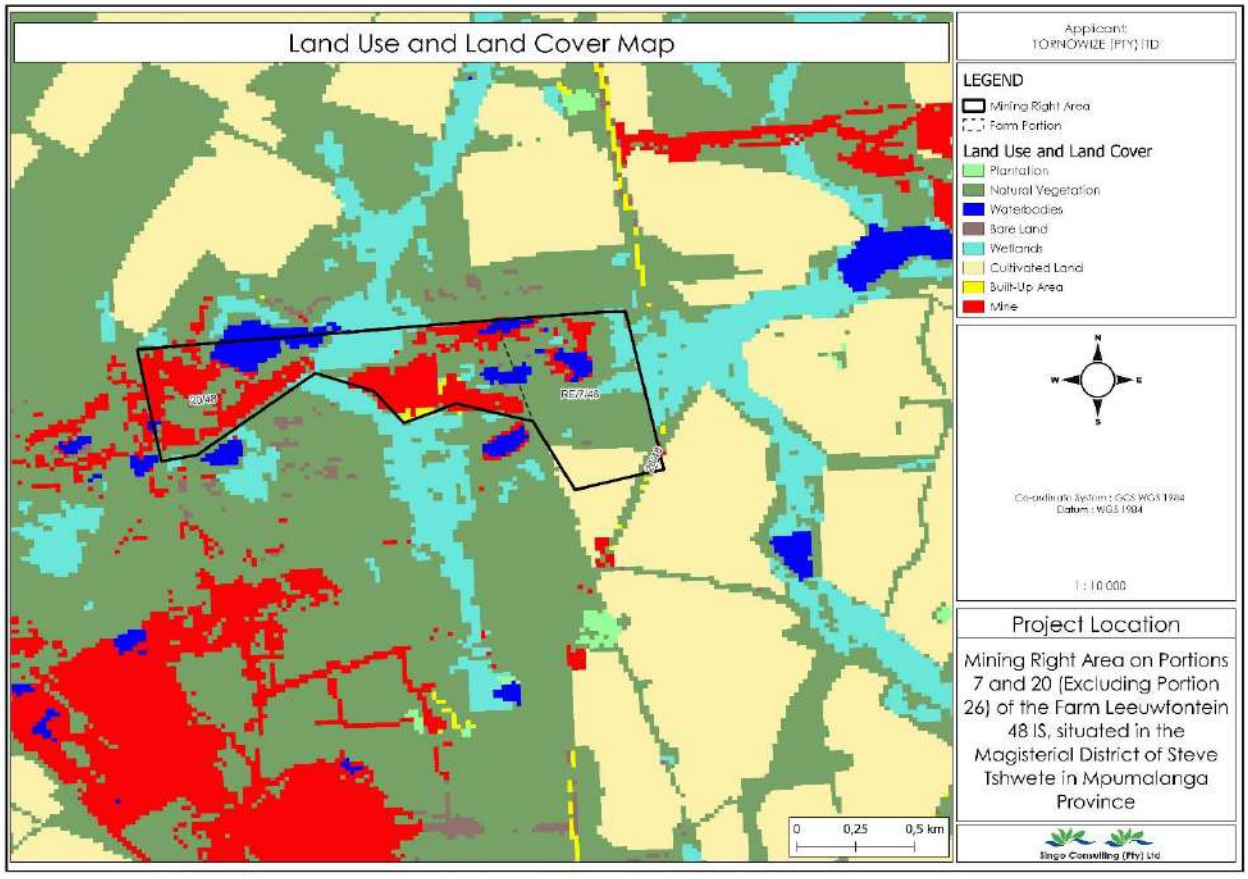

Land Use and Land Cover Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Land Use and Land Cover
Plantation
Natural Vegetation
Waterbodies
Bare Land
Wetlands
Cultivated Land
Built-Up Area
Mine
N
W
E
S
Co-ordinate System : GCS WGS 1984
Datum : WGS 1984
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
0
0,25
0,5 km
Singo Consulting (Pty) Ltd

Figure 66: Land use and land cover Map (Singo Consulting& Goggle earth)

The proposed infrastructure area pre-mining land use is presented on the layout below;

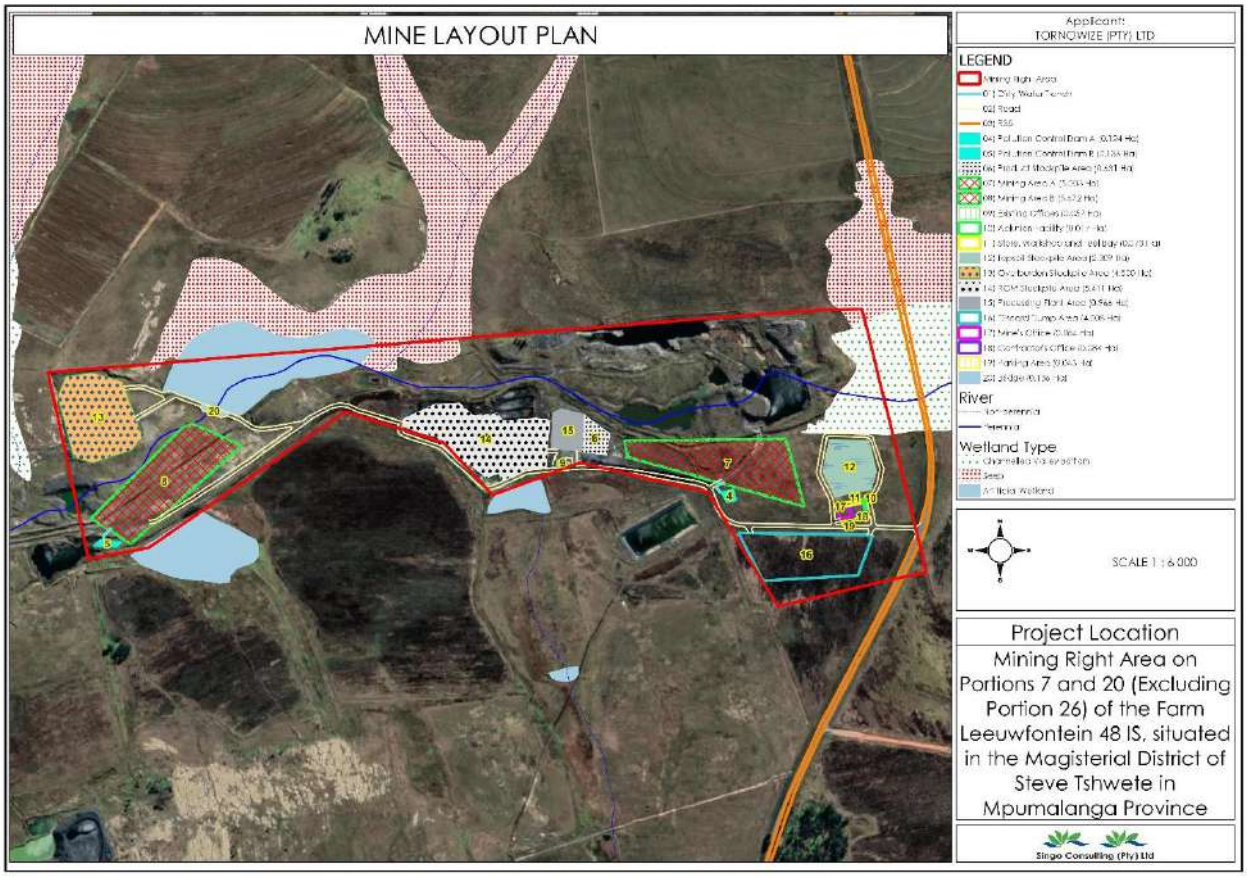


Figure 67: Mine Layout Plan

15.3 Specific environmental features and infrastructure on the site

There are various activities taking place within the proposed site which includes processing plant; and large portion of the land is covered with natural vegetation.

There is a number of wetlands within the proposed site (refer to figure 65)

Specialist studies in terms of sensitivities were conducted as part of the WULA requirements of the project. Specialist studies identified and conducted include:

- Surface water assessment at the river and streams
- Wetlands delineation and present ecological state determination

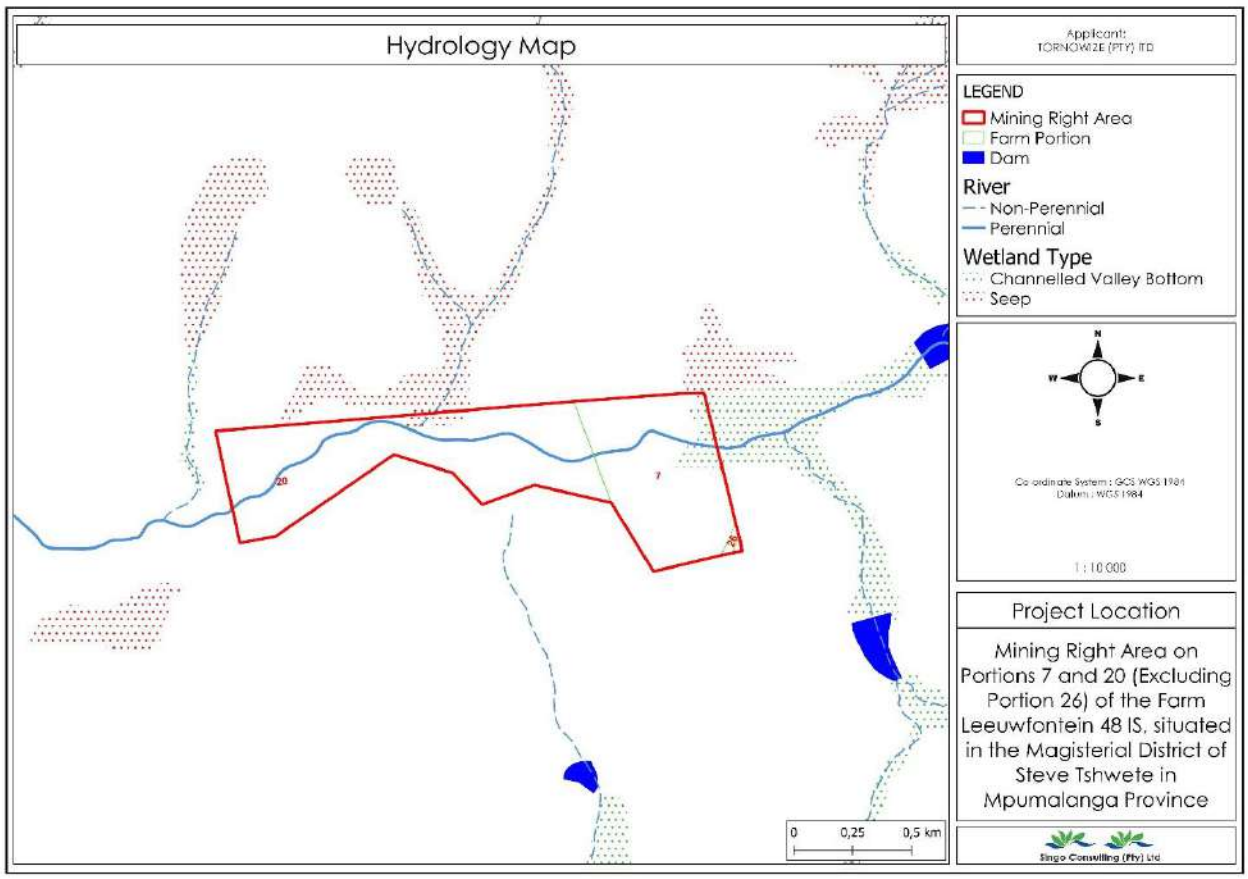


Figure 68: Hydrology Map (Singo Consulting)

15.4 Environmental and current land use map

Show all environmental and current land use features.

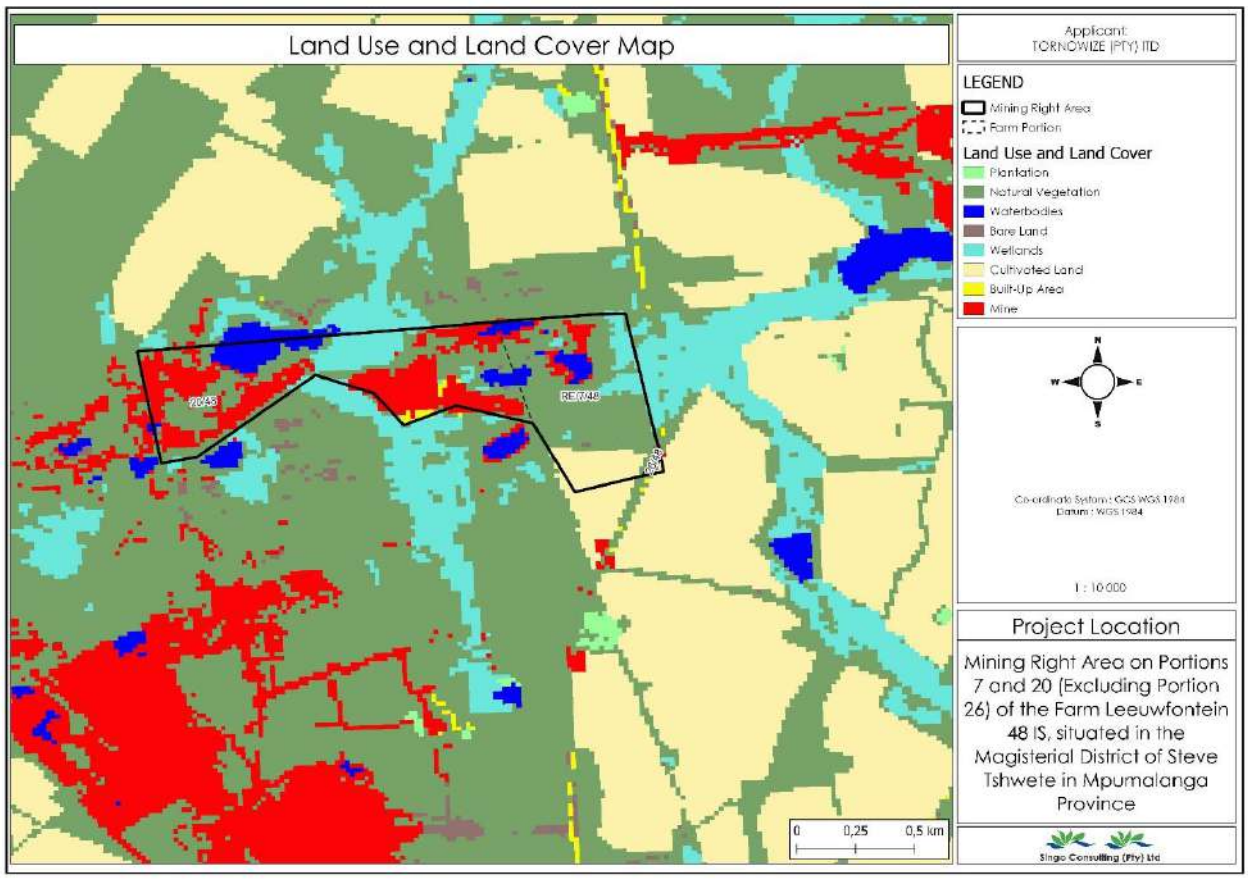


Figure 69: Current Land use map on the area.

15.5 Impacts and risks

Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated.

The EIA was undertaken in accordance with the impact assessment methodology as presented in the following section. Comments from stakeholders and responses are listed in a consultation report and are crossly referenced with the mitigation measures in the impact assessment tables.

15.6 Methodology used to determine the significance of environmental impacts

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

The impact identification process commenced by identifying all environmental aspects on site, whether sensitive or not. General environmental aspects that were considered includes:

- Topography
- Geology
- Soils, land use and capability
- Surface water, associated wetlands and aquatic ecosystems
- Groundwater
- Floral and faunal ecosystems
- Ambient environmental noise
- Archaeological and cultural sites
- Local traffic and safety
- Socioeconomics, health and safety
- Mine work Programme
- Social and Labour Plan
- Blasting
- Agricultural studies
- Rehabilitation
- Palaeontology study
- IWWMP
- Geotechnical Report
- CPR

All potential environmental impacts resulting from the activities and sub-activities listed in the report were listed under each of the aspects on tables.

As the specialist studies were completed, additional impacts identified through the specialist investigations were added, including impacts identified from the modelling exercises reported in the preceding section. All specialists utilise some form of impact rating like the process detailed in section 15.7. The impact rating completed by the specialists were as far as possible translated into the impact assessment process detailed below. As far as practically possible, considering variations in impact assessment methodology by different specialists, the specialist impact assessment is therefore duplicated within a single unified impact assessment process, to allow for all impacts to be assessed in the same way, reducing subjectivity, and allowing direct comparative ranking of all the impacts identified during the environmental processes.

Through the Public Participation Process (PPP), any issues or potential impacts identified by the I&APs were added to the list of potential impacts. All these impacts were then assessed, and their significance determined. Impact identification will be a consolidated approach based on Singo Consulting professional experience, specialist expertise and I&AP (including organs of state which are involved in the PPP) input.

15.7 Methodology

Direct, indirect and cumulative impacts of the issues that will be identified during the specialist investigations will be assessed in terms of standard rating scales to determine their significance. The rating system used for assessing impacts (or when specific impacts cannot be identified, the broader term issue should apply) is based on five criteria, namely:

1. Status of impacts – Determines whether the potential impact is positive (positive gain to the environment), negative (negative impact on the environment), or neutral (no perceived cost or benefit to the environment).
2. Spatial scale of impacts – Determines the extent of the impact. Potential impact is expressed numerically on a scale of 1 (site-specific) to 5 (global).
3. Temporal scale of impacts – Determines the extent of the impact in terms of timescale and longevity. Potential impact is expressed numerically on a scale of 1 (project duration) to 5 (permanent).
4. Probability of impacts – Quantifies the impact in terms of the likelihood of the impact occurring on a percentage scale of <5% (improbable) to >95% (definite).
5. Severity of impacts – Quantifies the impact in terms of the magnitude of the effect on the environment (receptor) and is derived by consideration of points 1, 2 and 3 above. For this particular study, a conservative approach is adopted for severity (e.g. where spatial impact was considered to be 2 and temporal impact was considered to be 3, a value of 3 would be adopted as a conservative estimate for severity of impact)

Table 18: Status of impact

Rating	Description	Quantitative rating
Positive	A benefit to the receiving environment (positive impact)	+
Neutral	No determined cost or benefit to the receiving environment	N
Negative	At cost to the receiving environment (negative impact)	-

Table 19: Spatial Scale of Impacts

Rating	Description	Quantitative rating
Very low(VL)	Site-specific: Impacts confined within the project site boundary.	1
Low(L)	Proximal: Impacts extend to within 1 km of the project site boundary.	2
Medium(M)	Logal: Impacts extend beyond to within 5 km of the project site boundary.	3
High(H)	Regional: Impacts extend beyond the site boundary and have a widespread effect, i.e. > 5 km from the project site boundary.	4
Very high(VH)	Global: Impacts extend beyond site boundary and have a national/global effect.	5

Table 20: Temporal scale impacts

Rating	Description	Quantitative rating
Very low(VL)	Project duration: Impacts expected only for the duration of the project or not longer than one year.	1

Low(L)	Short term: Impacts expected on a duration timescale of 1-2 years.	2
Medium(M)	Medium term: Impacts expected on a duration timescale of 2-5 years.	3
High(H)	Long term: Impacts expected on a duration timescale of 5-15 years.	4
Very high(VH)	Permanent: Impacts expected on a duration timescale exceeding 15 years.	5

Table 21: Probability of Impacts

Rating	Description	Quantitative rating
Highly improbable	Likelihood of the impact arising is estimated to be negligible <5%	1
Improbable	Likelihood of the impact arising is estimated to be negligible 5-35%	2
Possible	Likelihood of the impact arising is estimated to be negligible 35-65%	3
Probable	Likelihood of the impact arising is estimated to be negligible 65-95%	4
Highly probable	Likelihood of the impact arising is estimated to be negligible >95%	5

Table 22: Severity of Impacts

Rating	Description	Quantitative rating
Very low(VL)	Negligible: Zero or very low impact	1
Low(L)	Site-specific and short-term impacts	2
Medium(M)	Local scale and/or short-term impacts	3
High(H)	Regional and/or long-term impacts	4

Very high(VH)	Global scale and/or permanent environmental change	5

These five criteria combine to describe the overall significance rating. Calculated significance of impact determines the overall impact on (or risk to) a specified receptor and is calculated as the product of the probability (P) of the impact occurring and the severity (S) of the impact if it were to occur (Impact = P×S). This is a widely accepted methodology for calculating risk and results in an overall impact rating of Low (L), Low/Medium (LM), Medium (M), Medium/High (MH) or High (H). The significance of a particular impact is depicted in Table 33 and assigned a particular colour code in relation to its severity.

Table 23: Overall Significance Rating

Rating	Description		Quantitative rating
Low	PxS=1-3	(low impact significance)	L
Low/medium	PxS=4-5	(low/medium impact significance)	LM
Medium	PxS=6-9	(medium impact significance)	M
Medium/high	PxS=10-12	(medium/high impact significance)	MH
High	PxS=13-25	(high impact significance)	H

Table 24: Overall Significance rating- Severity

Probability (P)	Severity (S)				
	1	2	3	4	5
1	L	L	L	LM	LM
2	L	LM	M	M	MH
3	L	M	M	MH	H
4	LM	M	MH	H	H
5	LM	MH	H	H	H

The impact significance rating should be considered by authorities in their decision-making process based on the implications of ratings described in the following.

- ***Insignificant:*** The potential impact is negligible and will not have an influence on the decision regarding the proposed development.
- ***Low***: The potential impact is very small and should not have any meaningful influence on the decision regarding the proposed development.
- ***Low/medium:*** The potential impact may not have any meaningful influence on the decision regarding the proposed activity/development.
- ***Medium:*** The potential impact should influence the decision regarding the proposed activity/development.
- ***Medium/high:*** The potential impact will affect the decision regarding the proposed activity/development.
- ***High****:* The proposed activity should only be approved under special circumstances.

Practicable mitigation and optimisation measures are recommended, and impacts are rated in the prescribed way, both without and with the assumed effective implementation of the recommended mitigation (and/or optimisation) measures. Mitigation and optimisation measures are either:

- ***Essential:*** Measures that must be implemented and are non-negotiable.
- ***Best practice:*** Recommended to comply with best practice, with adoption dependent on the proponent's risk profile and commitment to adhere to best practice, and which must be shown to have been considered and sound reasons provided by the proponent if not implemented.

The model outcome is then assessed in terms of impact certainty and consideration of available information. Where a particular variable rationally requires weighting or an additional variable requires consideration, the model outcome is adjusted accordingly.

15.8 Positive and negative impacts of the proposed activities/development and alternatives

A comprehensive impact assessment has been conducted for studies which are listed in Table 33. The anticipated impacts are discussed to provide an indication of whether it will be positive or negative (Table 33)

Table 25: Anticipated Impacts

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Surface and groundwater		
Ground and surface water contamination	Negative	➢ Vegetation clearance and the exposure of soils must be kept to an absolute minimum. ➢ Temporary erosion control measures (e.g., sediment nets, berms, etc.) must be employed around working areas. ➢ The recommended water quality monitoring programme is implemented at least a year prior to construction, to obtain a suitable baseline for the wet and dry seasons. ➢ The proposed SWMP is implemented. Erosion and sediment control, as well as the containment and management of dirty water runoff, are the most important aspects to prevent negative impacts on the Olifants River. ➢ Energy dissipation measures are implemented at steep sections as well as at the exits of the proposed stormwater channels. ➢ Sufficient freeboard in the PCDs and other dirty water dams must be ensured at all times. The dams must be strictly managed in accordance with GN704 regulations. ➢ Dirty water must not be discharged to the environment. Excess water within the mine water circuit, must be appropriately dealt with, in agreement with the DWS. ➢ Abstractions from the Olifants River during the dry season months should be avoided as far possible. The use of water from flooded surrounding historical adits, or the construction of suitably sized PCDs should be investigated. ➢ Stormwater management and erosion control along the proposed mine roads must beensured. It is recommended that runoff is diverted off the roads through suitably spaced berms. ➢ Exemption from GN704 is obtained for infrastructure that is located within the floodlines or watercourses, or 100 m horizontal distance from a watercourse. ➢ Suitably sized culverts are placed where linear infrastructure crosses the minor nonperennial drainage lines.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		➢ Post mine closure, rehabilitation must ensure that erosion prevention is adequate for the long-term. ➢ The recommended mitigation measures and monitoring plans are implemented. **The following mitigation measures are recommended in the operation phase:** • The study area falls on a fractured aquifer system, the mine planning should take into consideration the fracture zones in the Vryheid formation, drilling activities should not contact the fractures as that is where most groundwater in the area is found and to prevent possible • groundwater pollution from residual explosive material used. • The numerical model should be recalibrated as soon as more hydrogeological data such as monitoring holes are made available. This would enhance model predictions and certainty. • It is recommended that there should be regular testing or monitoring of surrounding soil, water resources to detect any change in chemistry so that remedial measures are implemented in time. • The monitoring process throughout the existence of the project, the chemical and physical parameters of the water samples should be tested and compared with the SANS 241: 2015 • There should be soil, water resources and land pollution mitigation measures on site. • Wastewater source should be identified, and mitigation measures put in place to prevent groundwater contamination. • The stockpile, there should be regular monitoring of any heavy metal which could be exposed, as such could result in leaching during rainfall. • Proper and competent structure of the tailings dam should be built, to contain liquid,

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		or solid waste and to prevent such waste from entering the outside environment. • According to section 21(S21) of the National Water Act 36 of 1998, if a proposed project triggers any of the listed S21 activities, a water use license must be applied for. For this project, there will be activities which includes abstraction of water from groundwater, mining activities from the water courses dust suppression, dewatering, and ROM stockpiles. It is therefore recommended that a water use license be applied for. • It is recommended that to protect the wetlands onsite, it should be made easy to identify them, and further development is required before the operations commence such as planting of various plants. • It is recommended that compliance of relevant legislations be ensured, NEMA Act 107 of 1998, NWA Act 36 of 1998, NEM: waste Management Act 59 of 2008. • It is recommended that during the existence of the project there should also be regular maintenance of the mobile ablutions, to avoid leakage of waste into the ground. • There should be boreholes in and around the mining right area, to monitor the groundwater quality and quantity.
Wetland/River/ Hydrology/Geomorphology	Negative	• Include environmental awareness aspects into the site induction program to ensure all staff are aware of the location and importance of wetland habitats. • Establish emergency response measures and a clearly defined chain of communication to rapidly deal with any unforeseen impacts to wetlands, e.g. spills. • No stockpiling of the material may take place within the wetland/watercourse areas and temporary construction camps and infrastructure should also be located outside the wetland footprint. • Regular cleaning up of the wetland areas should be undertaken to remove litter. • Design and implement a construction stormwater management plan that aims to minimise the concentration of flow and

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		increase flow velocity, as well as minimise sediment transport off-site. • Where practically possible, the major earthworks should be undertaken during the dry season (roughly from April to August) to limit erosion due to rainfall runoff. • Store and handle potentially polluting substances and waste in designated, bunded facilities. • Waste should be regularly removed from the construction site by suitably equipped and qualified operators and disposed of in approved facilities. • Locate temporary waste and hazardous substance storage facilities a minimum of 100m from any wetland edge. • Keep sufficient quantities of spill clean-up materials on site.
Potential reduction of catchment yield of the aquifers through dewatering	Negative	• Regularly monitor groundwater levels as per the recommendations of the geohydrological report.
Excavated materials that are stockpiled in incorrect areas can interfere with the natural drainage, cause sedimentation and water pollution	Negative	• The areas excavated must have vegetated berms to separate dirty and clean water systems and serve as an erosion control measure. • The stockpiles must be vegetated to prevent erosion and subsequent siltation of clean and dirty water streams, as well as surface water resources. • Upslope diversion and down-slope silt containment structures should be constructed. • Surface water resources must be monitored pre-mining and during construction, as per the monitoring programme.
Terrestrial ecology		
Not rehabilitating the disturbed areas to allow for the agricul Specific	Negative	• This study aims to provide sufficient transparent and technically robust information on the impacts of mining to enable informed decision-making by the authorities. During site assessment, a CBA of perennial river and ESA of seep wetlands were observed onsite. The

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• Identified river and wetlands have high ecological function and high conservation importance. • Since river and wetlands are highly sensitive areas or no goes areas, no mining should occur within 100m of the identified river without determining the conditions for WUL from the DWS to avoid unnecessary disturbance of water resources. In case if mining must occur in the regulated area, a permit application needs to be lodged with DWS prior to any disturbance of the river and wetlands. A permit application should be lodged in terms of Section 21 (I) and (C) of the (National water Act NO. 36 of 1998). • It was discovered that the most sensitive parts of the mining right area is the dam wetlands. The identified water resources have high ecological function and high conservation importance. They provide habitat for aquatic animals, water source for livestock, and form part of the sources of freshwater in South Africa. Since wetlands and rivers are highly sensitive area or no-go areas, no mining should occur within 500 m of the identified wetlands and 100 m from the identified rivers without determining the conditions for WUL from the DWS • Proper rehabilitation and after-care of the disturbed area during mining should take place to prevent colonisation by invader species. All mitigation measures proposed in this report must be implemented during all phases of the proposed project. It is recommended that the management measures stipulated in this report be included in the proposed project's official EMPr and that these be assessed for efficacy during all phases of the project and adapted accordingly to ensure minimal disturbance of the study area ecology. The Ecology study for mining right significance of the impacts will be determined by the success of the mitigation measures implemented and the rehabilitation programme for the mined area.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Geology and soils		
• Land use change which will affect the soil and land use capability both during construction phase and post-mining operations. Loss of agricultural soils and land expected.	Negative	• In order to minimize effects, mining operations must be situated on ground with low- to medium-potential for agriculture. • Compensate landowners. • Wherever possible, restore areas damaged by mining so they may be used as agricultural land. If not, additional land uses that are regarded socially, economically, or ecologically appropriate throughout the decommissioning period must be taken into account. • Storm water management should be implemented daily throughout the site establishment / construction phase • Minimise the period of exposure of soil disturbances through a planning schedule • Bulk delivery of materials should be maximised to reduce the frequency of deliveries • Implementation of waste management during construction phase and throughout mining operation • Soils will be stripped according to the soil types and recommended depths.
Hydrocarbon spills can occur when using heavy machinery, as they all use oils and diesel to run. There is a chance of these breaking down and/or leaking during construction activities of roads, removal of topsoil and digging excavations for building and plant foundations. Contamination of area with hydrocarbons or hazardous waste materials.	Negative	• Prevent any spills from occurring • If a spill occurs, it is to be cleaned up immediately and reported to the appropriate authorities • All storage areas (for fuels and lubricants) will be compacted and have bunded containers to prevent soil pollution and appropriate oil separators installed • Water runoff traps should be constructed at the vehicle service sites to prevent polluted water runoff into areas that are not impacted upon • All vehicles are to be serviced regularly in a correctly bunded area • Hydrocarbon management procedure to contain details of emergency clean-up procedures and • Leaking vehicles will have drip trays place under them where the leak is occurring

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Storage of topsoil	Negative	• The topsoil will be stripped, and loaded onto dump truck • Topsoil will be stripped from all areas where physical surface disturbance will occur and stored at a designated area for future topsoil backfilling • Topsoil is to be stripped when the soil is dry (as far as practical possible), as to reduce compaction; and • To be stripped according to the stripping guideline and management plan, contained within this report and further recommendations contained within the rehabilitation plan, and stockpiled accordingly. • The handling of the stripped topsoil will be minimized to ensure the soil's structure does not deteriorate • Ensure stockpiles are placed on a free draining location so as to limit erosion loss • The movement of heavy vehicle should be limited to existing roads and be limited to areas where construction of haul road is to take place. • Compaction of the removed topsoil should be avoided by prohibiting traffic on stockpiles • Prevent unauthorised borrowing of stockpiled soil • Minimise the period of exposure of soil disturbances through a planning schedule • The stockpiles will be vegetated where the natural establishment of vegetation by the natural occurring seed bank is not sufficient (details contained in rehabilitation plan) in order to reduce the risk of erosion, prevent weed growth and to reinstitute the ecological processes within the soil and • Soils will be stripped according to the soil types and recommended depths.
Pollution		
Waste Management/Pollution Control	Negative	• Completely remove all the waste material from the site and transport it to another location for treatment and proper disposal. This so-called off-site solution is usually the most expensive option. An alternative is on-

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		site remediation, which reduces the production of leachate and lessens the chance of groundwater contamination. On-site remediation may include temporary removal of the hazardous waste, construction of a secure landfill on the same site, and proper replacement of the waste. It may also include treatment of any contaminated soil or groundwater. Treated soil may be replaced on-site and treated groundwater returned to the aquifer by deep-well injection. • A less costly alternative is full containment of the waste. This is done by placing an impermeable cover over the hazardous-waste site and by blocking the lateral flow of groundwater with subsurface cut-offs walls. It is possible to use cut off walls for this purpose when there is a natural layer of impervious soil or rock below the site. The walls are constructed around the perimeter of the site, deep enough to penetrate to the impervious layer. They can be excavated as trenches around the site without moving or disturbing the waste material. The trenches are filled with bentonite clay slurry to prevent their collapse during construction, and they are backfilled with a mixture of soil and cement that solidifies to form an impermeable barrier. Cut-off walls thus serve as vertical barriers to the flow of water, and the impervious layer serves as a barrier at the bottom. • Samples were classified as Type 4 waste, requiring landfill design of Class D. According to GNR 636: " Type 4 waste may only be disposed of at a Class D landfill designed in accordance with section 3(1) and (2) of this standard, or, subject to section 3(4) of this standard, Type 4 Waste may be disposed of at a landfill site designed in accordance with the
Social		
Recruitment strategies for the mine	Positive	N/A

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Advantage to previously disadvantage individuals	Positive	N/A
Community development programmes	Positive	N/A
Upgrades and expansion of services will benefit local area	Positive	N/A
Increased income generation for local community	Positive	N/A
Increased job opportunities for local mining communities	Positive	N/A
Economic injection to the area and Mpumalanga	Positive	N/A
Noise		
Noise emanating from heavy machinery and transport vehicles	Negative	• Noise barriers in the form of berms should be constructed as close to the noise sources as possible. • Mining-related machines and vehicles must be serviced regularly to ensure noise suppression mechanisms are effective, e.g. installing exhaust mufflers where possible. • Noisy machinery must be used predominately during daylight hours. • Grievance mechanism to record complaints should be kept on site and investigated. • Regular monitoring of noise to take place.
Noise from blasting	Negative	• Blasting operations are generally intermittent and should be limited to the day when ambient noise levels are highest.
Infrastructure (e.g. contractor's yard, weighbridge, workshop and stores)	Negative	• To reduce the visual impact of permanent structures, colours for roofing, walls, etc. should have a matt finish to reduce reflection. • Infrastructure must be located away from sensitive and elevated areas.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Location of stockpiles, pollution control dams and discard dumps	Negative	• Place as far away as possible from roads and settlements. • Topsoil stockpiles must be vegetated as soon as possible, to reduce erosion and decrease visual disturbance. • Keep stockpiles as low as possible to reduce visua impact. • Plant fast-growing indigenous trees around the dams to enhance visual.
Lighting pollution	Negative	• Avoid up-lighting of structures but rather direct the light downwards and focused on the object to be illuminated. • Use non-UV lights where possible, as light emitted at one wavelength has a low level of attraction to insects. This will reduce the likelihood of attracting insects and their predators specifically in the site camps.
Heritage and cultural		
Heritage resources disturbed/destroyed	Negative	▪ From an archaeological and heritage point of view, the proposed mining right application may be approved subject to mitigation measures implemented on the identified burial sites. ▪ The identified burial sites must be preserved *in situ* and properly mapped before any mining activity commences. ▪ The planners for the proposed mine must provide for a 100m buffer zone for the recorded burial sites. ▪ No heritage mitigation work is allowed without the consent of descendant families. ▪ The mining right application may be approved to proceed as planned under observation that project work does not extend beyond the surveyed site.
Paleontological sites disturbed/destroyed	Negative	
Cultural places disturbed/destroyed	Negative	

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		▪ Recorded buildings and structures should be preserved in situ accordance to section 34 of the NHRA. ▪ A 100m buffer zone should be provided to protect the identified building structures. ▪ Should chance archaeological materials or human burial remains be exposed during subsurface mining work on any section of the proposed development laydown sites, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in mining scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations. ▪ Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMPr, there are no other significant cultural heritage resources barriers to the proposed mining development. The Heritage authority may approve the mining right application to proceed as planned with special commendations to implement the recommendations here in made. ▪ If during development, operational or closure phases of this project, any person employed by the applicant, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance, work must cease at the site of the find and this person must report

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		this find to their immediate supervisor, and through their supervisor to the site manager. ▪ The site Manager must then make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area before informing an archaeological practitioner. ▪ It is the responsibility of the applicant to protect the site(s) from publicity (i.e., media) until a mutual agreement is reached. ▪ Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by MPHRA. ▪ The applicant is reminded that unavailability of archaeological materials (e.g., pottery, stone tools, remnants of stonewalling, graves, etc.) and fossils does not mean they do not occur, archaeological material might be hidden underground, and as such the client is reminded to take precautions during mining. ▪ Overall, impacts to heritage resources are not considered to be significant for the project receiving environment. It is thus concluded that the project may be cleared to proceed as planned subject to the Heritage Authority ensuring that detailed heritage monitoring procedures are included in the project EMPr for the mining phase, include chance archaeological finds mitigation procedure in the project EMPr). ▪ The findings of this report, with approval of the MPHRA, may be classified as accessible to any

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		interested and affected parties within the limits of the laws. .
Traffic		
Increased traffic volumes on the existing road networks	Negative	• It is expected that the majority of the workers will use public transport and the proposed development of the project can be supported from a traffic flow point of view with provision be made on site to accommodate the safe loading and off-loading of staff using public transport as well as an in-house traffic management plan. • Since the proposed development will generate less than 150 vehicles per hour during the peak hours, only a Traffic Impact Statement (TIS) is required.
Blasting and vibration		
Blasting and vibration	Negative	• Blast designs can be reviewed prior to first blast planned and done. Site conditions may change, or present certain difficulties not envisaged now. This will confirm if planned designs are applicable and expected outcomes are still within acceptable norms and standards. • The current proposed stemming lengths used provides for some control on fly rock. Consideration can be given to increase this length for better control. Specific designs where distances between blast and point of concern are known should be considered. Recommended stemming length should range between 20 and 30 times the blasthole diameter. In cases for better fly control this should range between 30 and 34 times the blast holes diameter. Increased stemming lengths will also contribute to more acceptable air blast levels. • Calculated minimum safe horizontal distance is 500m. The final blast designs that may be used will determine the final decision on safe distance to evacuate people and animals.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		This distance may be greater pending the final code of practice of the mine and responsible blaster's decision on safe distance. The blaster has a legal obligation concerning the safe distance and he needs to determine this distance. • During blasting care must be taken to ensure all people and animals cleared to outside the unsafe area as determined by the blaster. • A further consideration of blasting times is when weather conditions could influence the effects yielded by blasting operations. It is recommended not to blast too early in the morning when it is still cool or when there is a possibility of atmospheric inversion or too late in the afternoon in winter. Do not blast in fog. Do not blast in the dark. Refrain from blasting when wind is blowing strongly in the direction of an outside receptor. Do not blast with low overcast clouds. These 'do nots' stem from the influence that weather has on air blast. The energy of air blast cannot be increased but it is distributed differently and therefore is difficult to mitigate. It is recommended that a standard blasting time is fixed. • Video of each blast will help to define if fly rock occurred and from were. Immediate mitigation measure can then be applied if necessary. The video will also be a record of blast conditions.
Safety		
Blasting	Negative	• Clearly demarcated areas and erect signs to indicate blasting zones.
Roads and vehicles	Negative	• Speed limits must be in place on site and before access roads on a provincial or national road. • Ensure drivers are trained in road safety.
Surrounding neighbours	Negative	• Personnel are not permitted on other property without permission. • Avoid conflict with surrounding landowners. • Safety specialist will be appointed, and assessments will be conducted. Recommendations will be implemented.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Air quality		
Dust pollution	Negative	• The removal of vegetation will be minimised during stripping to reduce the effects of dust pollution as a result of exposed soil. • Water or dust control agents must be used in working areas, and roads will be sprayed for dust suppression on a regular basis in designated susceptible areas during heavy usage. • Dust monitoring must be undertaken in accordance to the monitoring programme. It is recommended that topsoil stockpiles be vegetated to sustain biological components and prevent dust emissions. • Reduction of dust fallout levels and particulate matter. • All coal haul trucks must be covered by a tarpaulin. • The overland conveyor bult should be covered and coal on the conveyor should be sprayed to reduce emissions.
Geotechnical Investigation		
Mine Infrastructures Development	Negative	The purpose of this report is to provide a general overview of the prevailing geotechnical conditions on the site, to guide decision-making with regards to the proposed Mine infrastructures establishment including foundation and structural designs. The classifications were based on desk study information and fieldwork. • A wide range of geotechnical conditions were evaluated to characterise the site into prevailing geotechnical zones. • Site investigations and laboratory test results indicated that the site is underlain mainly by colluvial, alluvial and residual soils characterised by a low active condition. • A poorly developed to well-developed pedogenic horizon is characteristic of the area. • Shallow groundwater seepage was not encountered in all the excavated test pits.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• Signs seepage and shallow pedigenic soils were encountered across the site. Good site drainage and damp proofing in foundations must be implemented across the site. • Outcrops and sub-outcrops were not encountered in the area however shallow hardpan ferricete do occur extensively across the site; therefore excavatability problems are anticipated. • The geotechnical zonation show that the site is developable albeit with precautions and/or remedial measures. • Backfill/dumping areas were not encountered on site. Local areas of such material may be present between the points of investigation. • Imported engineered soil will be required for road building and construction of pavements. • The investigated site is characterised by a minor slope however flat areas do occur across the site. Shallow well developed pedogenic soils were encountered across the site which may lead to poor stormwater drainage. The site must be shaped to improve stormwater runoff and extensive stormwater management must be considered. • The recommended foundation designs for the prevailing conditions across the major part of the site include lightly reinforced strip footings.
Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Surface and groundwater		
Ground and surface water contamination	Negative	➢ Vegetation clearance and the exposure of soils must be kept to an absolute minimum. ➢ Temporary erosion control measures (e.g., sediment nets, berms, etc.) must be employed around working areas.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		➢ The recommended water quality monitoring programme is implemented at least a year prior to construction, to obtain a suitable baseline for the wet and dry seasons. ➢ The proposed SWMP is implemented. Erosion and sediment control, as well as the containment and management of dirty water runoff, are the most important aspects to prevent negative impacts on the Olifants River. ➢ Energy dissipation measures are implemented at steep sections as well as at the exits of the proposed stormwater channels. ➢ The river must be appropriately diverted around working areas, and the generation of sediment must be controlled through suitable measures. ➢ Sufficient freeboard in the PCDs and other dirty water dams must be ensured at all times. The dams must be strictly managed in accordance with GN704 regulations. ➢ Dirty water must not be discharged to the environment. Excess water within the mine water circuit, must be appropriately dealt with, in agreement with the DWS. ➢ Abstractions from the Olifants River during the dry season months should be avoided as far possible. The use of water from flooded surrounding historical adits, or the construction of suitably sized PCDs should be investigated. ➢ Stormwater management and erosion control along the proposed mine roads must beensured. It is recommended that runoff is diverted off the roads through suitably spaced berms. ➢ Exemption from GN704 is obtained for infrastructure that is located within the floodlines or watercourses, or 100 m horizontal distance from a watercourse. ➢ Suitably sized culverts are placed where linear infrastructure crosses the minor nonperennial drainage lines. ➢ Post mine closure, rehabilitation must ensure that erosion prevention is adequate for the long-term.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		➢ The recommended mitigation measures and monitoring plans are implemented. **The following mitigation measures are recommended in the operation phase:** • The study area falls on a fractured aquifer system, the mine planning should take into consideration the fracture zones in the Vryheid formation, drilling activities should not contact the fractures as that is where most groundwater in the area is found and to prevent possible groundwater pollution from residual explosive material used. • The numerical model should be recalibrated as soon as more hydrogeological data such as monitoring holes are made available. This would enhance model predictions and certainty. • It is recommended that there should be regular testing or monitoring of surrounding soil, water resources to detect any change in chemistry so that remedial measures are implemented in time. • The monitoring process throughout the existence of the project, the chemical and physical parameters of the water samples should be tested and compared with the SANS 241: 2015 • There should be soil, water resources and land pollution mitigation measures on site. • Wastewater source should be identified, and mitigation measures put in place to prevent groundwater contamination. • The stockpile, there should be regular monitoring of any heavy metal which could be exposed, as such could result in leaching during rainfall. • Proper and competent structure of the tailings dam should be built, to contain liquid, or solid waste and to prevent such waste from entering the outside environment. • According to section 21(S21) of the National Water Act 36 of 1998, if a proposed project triggers any of the listed S21 activities, a water use license must be applied for. For this project, there will be activities which includes

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		abstraction of water from groundwater, mining activities from the water courses dust suppression, dewatering, and ROM stockpiles. It is therefore recommended that a water use license be applied for. • It is recommended that to protect the wetlands onsite, it should be made easy to identify them, and further development is required before the operations commence such as planting of various plants. • It is recommended that compliance of relevant legislations be ensured, NEMA Act 107 of 1998, NWA Act 36 of 1998, NEM: waste Management Act 59 of 2008. • It is recommended that during the existence of the project there should also be regular maintenance of the mobile ablutions, to avoid leakage of waste into the ground. • There should be boreholes in and around the mining right area, to monitor the groundwater quality and quantity.
Wetland/River/ Hydrology/Geomorphology	Negative	• Include environmental awareness aspects into the site induction program to ensure all staff are aware of the location and importance of wetland habitats. • Establish emergency response measures and a clearly defined chain of communication to rapidly deal with any unforeseen impacts to wetlands, e.g. spills. • No stockpiling of the material may take place within the wetland/watercourse areas and temporary construction camps and infrastructure should also be located outside the wetland footprint. • Regular cleaning up of the wetland areas should be undertaken to remove litter. • Design and implement a construction stormwater management plan that aims to minimise the concentration of flow and increase flow velocity, as well as minimise sediment transport off-site. • Where practically possible, the major earthworks should be undertaken during the dry season (roughly from April to August) to limit erosion due to rainfall runoff.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• Store and handle potentially polluting substances and waste in designated, bunded facilities. • Waste should be regularly removed from the construction site by suitably equipped and qualified operators and disposed of in approved facilities. • Locate temporary waste and hazardous substance storage facilities a minimum of 100m from any wetland edge. • Keep sufficient quantities of spill clean-up materials on site..
Potential reduction of catchment yield of the aquifers through dewatering	Negative	• Regularly monitor groundwater levels as per the recommendations of the geohydrological report.
Excavated materials that are stockpiled in incorrect areas can interfere with the natural drainage, cause sedimentation and water pollution	Negative	• The areas excavated must have vegetated berms to separate dirty and clean water systems and serve as an erosion control measure. • The stockpiles must be vegetated to prevent erosion and subsequent siltation of clean and dirty water streams, as well as surface water resources. • Upslope diversion and down-slope silt containment structures should be constructed. • Surface water resources must be monitored pre-mining and during construction, as per the monitoring programme.
Terrestrial ecology		
Not rehabilitating the disturbed areas to allow for the agricul Specific	Negative	• This study aims to provide sufficient transparent and technically robust information on the impacts of mining to enable informed decision-making by the authorities. During site assessment, a CBA of perennial river and ESA of seep wetlands were observed onsite. The • identified river and wetlands have high ecological function and high conservation importance. • They provide habitat for aquatic animals, water source for livestock and wild animals, and form part of the sources of freshwater in South Africa. • Since river and wetlands are highly sensitive areas or no goes areas, no mining should occur within 100m of the identified river without determining the conditions for WUL from the

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		DWS to avoid unnecessary disturbance of water resources. In case if mining must occur in the regulated area, a permit application needs to be lodged with DWS prior to any disturbance of the river and wetlands. A permit application should be lodged in terms of Section 21 (I) and (C) of the (National water Act NO. 36 of 1998). • Most of the areas of the proposed site are heavily modified due to cultivation, residential activities and grazing of livestock. The other area of a proposed site is an Ecological Support Area which is not yet disturbed, and it falls in a rocky area covered with perennial grass species such as Hyparrhenia hirta (L) Stapf. No floral species of conservation concern observed onsite. The area provides livestock and wild animals with area for grazing. When choosing areas to be mined, the applicant should prioritize development in low sensitive/already heavily and moderately modified area to avoid unnecessary disturbance of the natural areas. A pre-vegetation clearing walk should be carried out to identify SCC which might be present onsite and if identified the area should be demarcated and not disturbed during mining. The applicant must ensure that animals should not be intentionally killed/poached if identified. There should be a relocation of any threatened mammal species identified onsite before commencement of mining. • Proper rehabilitation and after-care of the disturbed area during mining should take place to prevent colonisation by invader species. All mitigation measures proposed in this report must be implemented during all phases of the proposed project. It is recommended that the management measures stipulated in this report be included in the proposed project's official EMPr and that these be assessed for efficacy during all phases of the project and adapted accordingly to ensure minimal disturbance of the study area ecology. The Ecology study for mining right significance of the impacts will be determined by the success of the mitigation measures implemented and the rehabilitation programme for the mined area.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Geology and soils		
• Land use change which will affect the soil and land use capability both during construction phase and post-mining operations. Loss of agricultural soils and land expected.	Negative	• In order to minimize effects, mining operations must be situated on ground with low- to medium-potential for agriculture. • Compensate landowners. • Wherever possible, restore areas damaged by mining so they may be used as agricultural land. If not, additional land uses that are regarded socially, economically, or ecologically appropriate throughout the decommissioning period must be taken into account. • Storm water management should be implemented daily throughout the site establishment / construction phase • Minimise the period of exposure of soil disturbances through a planning schedule • Bulk delivery of materials should be maximised to reduce the frequency of deliveries • Implementation of waste management during construction phase and throughout mining operation • Soils will be stripped according to the soil types and recommended depths.
Hydrocarbon spills can occur when using heavy machinery, as they all use oils and diesel to run. There is a chance of these breaking down and/or leaking during construction activities of roads, removal of topsoil and digging excavations for building and plant foundations. Contamination of area with hydrocarbons or hazardous waste materials.	Negative	• Prevent any spills from occurring • If a spill occurs, it is to be cleaned up immediately and reported to the appropriate authorities • All storage areas (for fuels and lubricants) will be compacted and have bunded containers to prevent soil pollution and appropriate oil separators installed • Water runoff traps should be constructed at the vehicle service sites to prevent polluted water runoff into areas that are not impacted upon • All vehicles are to be serviced regularly in a correctly bunded area • Hydrocarbon management procedure to contain details of emergency clean-up procedures and • Leaking vehicles will have drip trays place under them where the leak is occurring
Storage of topsoil	Negative	• The topsoil will be stripped, and loaded onto dump truck • Topsoil will be stripped from all areas where physical surface disturbance will occur and

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		stored at a designated area for future topsoil backfilling • Topsoil is to be stripped when the soil is dry (as far as practical possible), as to reduce compaction; and • To be stripped according to the stripping guideline and management plan, contained within this report and further recommendations contained within the rehabilitation plan, and stockpiled accordingly. • The handling of the stripped topsoil will be minimized to ensure the soil's structure does not deteriorate • Ensure stockpiles are placed on a free draining location so as to limit erosion loss • The movement of heavy vehicle should be limited to existing roads and be limited to areas where construction of haul road is to take place. • Compaction of the removed topsoil should be avoided by prohibiting traffic on stockpiles • Prevent unauthorised borrowing of stockpiled soil • Minimise the period of exposure of soil disturbances through a planning schedule • The stockpiles will be vegetated where the natural establishment of vegetation by the natural occurring seed bank is not sufficient (details contained in rehabilitation plan) in order to reduce the risk of erosion, prevent weed growth and to reinstitute the ecological processes within the soil and • Soils will be stripped according to the soil types and recommended depths.
Pollution		
Waste Management/Pollution Control	Negative	• Completely remove all the waste material from the site and transport it to another location for treatment and proper disposal. This so-called off-site solution is usually the most expensive option. An alternative is on-site remediation, which reduces the production of leachate and lessens the chance of groundwater contamination. On-site remediation may include temporary removal of the hazardous waste, construction of a secure landfill on the same site, and proper replacement of the waste. It may also include treatment of any

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		contaminated soil or groundwater. Treated soil may be replaced on-site and treated groundwater returned to the aquifer by deep-well injection. • A less costly alternative is full containment of the waste. This is done by placing an impermeable cover over the hazardous-waste site and by blocking the lateral flow of groundwater with subsurface cut-offs walls. It is possible to use cut off walls for this purpose when there is a natural layer of impervious soil or rock below the site. The walls are constructed around the perimeter of the site, deep enough to penetrate to the impervious layer. They can be excavated as trenches around the site without moving or disturbing the waste material. The trenches are filled with bentonite clay slurry to prevent their collapse during construction, and they are backfilled with a mixture of soil and cement that solidifies to form an impermeable barrier. Cut-off walls thus serve as vertical barriers to the flow of water, and the impervious layer serves as a barrier at the bottom. • Samples were classified as Type 4 waste, requiring landfill design of Class D. According to GNR 636: " Type 4 waste may only be disposed of at a Class D landfill designed in accordance with section 3(1) and (2) of this standard, or, subject to section 3(4) of this standard, Type 4 Waste may be disposed of at a landfill site designed in accordance with the
Social		
Recruitment strategies for the mine	Positive	N/A
Advantage to previously disadvantage individuals	Positive	N/A
Community development programmes	Positive	N/A

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Upgrades and expansion of services will benefit local area	Positive	N/A
Increased income generation for local community	Positive	N/A
Increased job opportunities for local mining communities	Positive	N/A
Economic injection to the area and Mpumalanga	Positive	N/A
Noise		
Noise emanating from heavy machinery and transport vehicles	Negative	• Noise barriers in the form of berms should be constructed as close to the noise sources as possible. • Mining-related machines and vehicles must be serviced regularly to ensure noise suppression mechanisms are effective, e.g. installing exhaust mufflers where possible. • Noisy machinery must be used predominately during daylight hours. • Grievance mechanism to record complaints should be kept on site and investigated. • Regular monitoring of noise to take place.
Noise from blasting	Negative	• Blasting operations are generally intermittent and should be limited to the day when ambient noise levels are highest.
Infrastructure (e.g. contractor's yard, weighbridge, workshop and stores)	Negative	• To reduce the visual impact of permanent structures, colours for roofing, walls, etc. should have a matt finish to reduce reflection. • Infrastructure must be located away from sensitive and elevated areas.
Location of stockpiles, pollution control dams and discard dumps	Negative	• Place as far away as possible from roads and settlements. • Topsoil stockpiles must be vegetated as soon as possible, to reduce erosion and decrease visual disturbance. • Keep stockpiles as low as possible to reduce visua impact. • Plant fast-growing indigenous trees around the dams to enhance visual.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Lighting pollution	Negative	• Avoid up-lighting of structures but rather direct the light downwards and focused on the object to be illuminated. • Use non-UV lights where possible, as light emitted at one wavelength has a low level of attraction to insects. This will reduce the likelihood of attracting insects and their predators specifically in the site camps.
Heritage and cultural		
Heritage resources disturbed/destroyed	Negative	▪ From an archaeological and heritage point of view, the proposed mining right application may be approved subject to mitigation measures implemented on the identified burial sites. ▪ The identified burial sites must be preserved *in situ* and properly mapped before any mining activity commences. ▪ The planners for the proposed mine must provide for a 100m buffer zone for the recorded burial sites. ▪ No heritage mitigation work is allowed without the consent of descendant families. ▪ The mining right application may be approved to proceed as planned under observation that project work does not extend beyond the surveyed site. ▪ Recorded buildings and structures should be preserved in situ accordance to section 34 of the NHRA. ▪ A 100m buffer zone should be provided to protect the identified building structures. ▪ Should chance archaeological materials or human burial remains be exposed during subsurface mining work on any section of the proposed development laydown sites, work should cease on the affected area and the discovery must be reported to the
Paleontological sites disturbed/destroyed	Negative	
Cultural places disturbed/destroyed	Negative	

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in mining scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations. ▪ Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMPr, there are no other significant cultural heritage resources barriers to the proposed mining development. The Heritage authority may approve the mining right application to proceed as planned with special commendations to implement the recommendations here in made. ▪ If during development, operational or closure phases of this project, any person employed by the applicant, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the site manager. ▪ The site Manager must then make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area before informing an archaeological practitioner. ▪ It is the responsibility of the applicant to protect the site(s) from publicity (i.e., media) until a mutual agreement is reached. ▪ Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		such remains, whether of recent origin or not, without the endorsement by MPHRA. ▪ The applicant is reminded that unavailability of archaeological materials (e.g., pottery, stone tools, remnants of stonewalling, graves, etc.) and fossils does not mean they do not occur, archaeological material might be hidden underground, and as such the client is reminded to take precautions during mining. ▪ Overall, impacts to heritage resources are not considered to be significant for the project receiving environment. It is thus concluded that the project may be cleared to proceed as planned subject to the Heritage Authority ensuring that detailed heritage monitoring procedures are included in the project EMPr for the mining phase, include chance archaeological finds mitigation procedure in the project EMPr (See Appendix 1 of attached HIA). ▪ The findings of this report, with approval of the MPHRA, may be classified as accessible to any interested and affected parties within the limits of the laws. .
Traffic		
Increased traffic volumes on the existing road networks	Negative	• It is expected that the majority of the workers will use public transport and the proposed development of the project can be supported from a traffic flow point of view with provision be made on site to accommodate the safe loading and off-loading of staff using public transport as well as an in-house traffic management plan. • Since the proposed development will generate less than 150 vehicles per hour during the peak hours, only a Traffic Impact Statement (TIS) is required.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• Analyses of existing traffic conditions on the road network surrounding the proposed residential development showed that generally the traffic conditions during typical weekday AM and PM peak hours are good with truly little congestion during peak hours. • The analyses of the existing plus development generated traffic showed that the additional traffic generated by the proposed project development will not have a major impact on the surrounding road network. The road network is currently operating well below its capacity. Therefore, the generated traffic volumes will easily be accommodated by the existing road network without reducing the levels of service on the surrounding road network and will have minimal effect on public transport or pedestrian activities in the area. We recommend one line to be added near the access point of the proposed project area to ease the flow of traffic and not to be congested.
Blasting and vibration		
Blasting and vibration	Negative	• Blast designs can be reviewed prior to first blast planned and done. Site conditions may change, or present certain difficulties not envisaged now. This will confirm if planned designs are applicable and expected outcomes are still within acceptable norms and standards. • The current proposed stemming lengths used provides for some control on fly rock. Consideration can be given to increase this length for better control. Specific designs where distances between blast and point of concern are known should be considered. Recommended stemming length should range between 20 and 30 times the blasthole diameter. In cases for better fly control this should range between 30 and 34 times the blast holes diameter. Increased stemming lengths will also contribute to more acceptable air blast levels. • Calculated minimum safe distance is 595m. The final blast designs that may be used will determine the final decision on safe distance to evacuate people and animals. This distance may be greater pending the final code of practice of

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		the mine and responsible blaster's decision on safe distance. The blaster has a legal obligation concerning the safe distance and he needs to determine this distance. • During blasting care must be taken to ensure all people and animals cleared to outside the unsafe area as determined by the blaster. • A further consideration of blasting times is when weather conditions could influence the effects yielded by blasting operations. It is recommended not to blast too early in the morning when it is still cool or when there is a possibility of atmospheric inversion or too late in the afternoon in winter. Do not blast in fog. Do not blast in the dark. Refrain from blasting when wind is blowing strongly in the direction of an outside receptor. Do not blast with low overcast clouds. These 'do nots' stem from the influence that weather has on air blast. The energy of air blast cannot be increased but it is distributed differently and therefore is difficult to mitigate. It is recommended that a standard blasting time is fixed. • Video of each blast will help to define if fly rock occurred and from were. Immediate mitigation measure can then be applied if necessary. The video will also be a record of blast conditions.
Safety		
Blasting	Negative	• Clearly demarcated areas and erect signs to indicate blasting zones.
Roads and vehicles	Negative	• Speed limits must be in place on site and before access roads on a provincial or national road. • Ensure drivers are trained in road safety.
Surrounding neighbours	Negative	• Personnel are not permitted on other property without permission. • Avoid conflict with surrounding landowners. • Safety specialist will be appointed, and assessments will be conducted. Recommendations will be implemented.
Air quality		

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Dust pollution	Negative	• The removal of vegetation will be minimised during stripping to reduce the effects of dust pollution as a result of exposed soil. • Water or dust control agents must be used in working areas, and roads will be sprayed for dust suppression on a regular basis in designated susceptible areas during heavy usage. • Dust monitoring must be undertaken in accordance to the monitoring programme. It is recommended that topsoil stockpiles be vegetated to sustain biological components and prevent dust emissions. • Reduction of dust fallout levels and particulate matter. • All coal haul trucks must be covered by a tarpaulin. • The overland conveyor bult should be covered and coal on the conveyor should be sprayed to reduce emissions.
Geotechnical Investigation		
Mine Infrastructures Development	Negative	The purpose of this report is to provide a general overview of the prevailing geotechnical conditions on the site, to guide decision-making with regards to the proposed Mine infrastructures establishment including foundation and structural designs. The classifications were based on desk study information and fieldwork. • A wide range of geotechnical conditions were evaluated to characterise the site into prevailing geotechnical zones. • The topography of the proposed mine infrastructures development area is generally flat with a very gentle slope. There were no outcrops and/or sub-outcrops that were encountered across the site. Flat areas which may present retarded stormwater dispersion do occur across the site and erosion is generally via sheetwash. • Data that was collected included identification of areas of outcrop, site drainage and storm water runoff, etc. Siting of test pit location was also conducted during the reconnaissance phase of the investigation. • A poorly developed to well-developed pedogenic horizon is characteristic of the area.

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
		• Test pits were excavated employing a tractor loader backhoe (TLB) to a depth of at least 3,0 m or until refusal was encountered. • No signs of previous subsidence were evident during the site investigation and no mining activity has occurred in this area. • The probability of landslides and mudslides occurring within this area are remote. This is primarily due to the low relief and relatively flat gradient of the area. • The available geological maps indicate that the site is not underlain by dolomite or soluble rocks/minerals. • Imported engineered soil will be required for road building and construction of pavements. • The recommended foundation designs for the prevailing conditions across a major part of the site include that structure can be placed on a Reinforced Concrete Raft Designed by a suitably qualified structural engineer. The Reinforced Concrete Raft should be founded as shallow as possible, on at least 300mm of G7 backfill compacted to at least 93% Mod AASHTO. It is recommended that a foundation pressure of 50 KPa should not be exceed for this application.

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

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

The impacts of development can be minimised if measures are implemented to reduce them. The mitigation measures ensure that the development considers the environment and the predicted impacts to minimise

impacts and achieve sustainable development. Recommendations as part of mitigations are listed all the studies conducted (Ecology, HIA and wetlands, etc.).

15.10 Motivation where no alternative sites were considered.

The property selected for the overall mining right application has been mined before by Ukufisa holding (Pty) Ltd and the EAP obtained the data from the landowner therefore it was assumed that the coal resource is economically feasible for mining.

15.11 Statement motivating the preferred site

Provide a statement motivation the final layout that is proposed.

The preferred site was chosen due to the following:

- Position of coal resource;
- The availability of coal reserves
- Depth of coal resource;
- Existence of operating coal mines

The extent of mining and the type of mining is limited by the extent and depth of the coal resource, which has limited space on site for other infrastructure. The site layout as depicted in this EIA/EMPR is based on economic feasibility and reducing environmental impact as per specialist studies. Infrastructure will be placed to avoid water resources with 100m and 500m buffer zones, as well as reducing development footprints in natural grassland areas as far as possible.

Process undertaken to identify, assess and rank impacts and risks of activity on the preferred site

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

The proposed mining area has been analysed by the EAP through a desktop study to identify any sensitivities that would be impacted by the proposed mining activity. Various specialist studies were identified based on the observations. Physical site visit was undertaken to confirm and expand on identified potential impacts. The phase was combined with public participation to involve the affected community.

Issues and concerns were raised by I&APs, including environmental aspects. Various other studies were conducted that are considered of importance in a mining project and included as specialist studies. The

impact assessment methodology utilised in the project. This method was also used for any proposed alternatives. The aim was to use the methodology to determine the significance of impacts before and after mitigation measures were applied.

15.12 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.

15.12.1 Plan of study/terms of reference

The scoping phase identified potential environmental impacts and discussed alternatives considered. The following section outlines the proposed plan of study to be conducted for the various environmental aspects during this EIA phase. It is important to note that the plan of study was guided by comments obtained from I&APs and other stakeholders during the scoping phase PPP.

15.12.2 Impact assessment phase objectives

The impact assessment phase will have the following objectives:

- Identify and assess the environmental (biophysical and social) impacts of the construction, operation, decommissioning and post-closure impacts of the proposed development. The cumulative impacts of the proposed development will also be identified and evaluated.
- Determine and assess alternative activities and locations in parallel with the proposed activity.
- Identify and evaluate potential management and mitigation measures that will reduce the negative impacts of the proposed development and enhance the positive impacts.
- Compile monitoring, management, mitigation and training needs in the EMPr.
- Provide the decision-making authorities with sufficient and accurate information to make a sound decision on the proposed development.

15.12.3 Impact assessment phase tasks

The impact assessment phase has four key elements, namely:

- Specialist studies: Specialist studies identified in the scoping phase and any additional studies that may be required by the authorities, will be conducted during the initial EIA phase. The relevant specialists will be appointed to conduct the various assessments. They will gather baseline information relevant to the study and assess impacts associated with the development. Specialists

also make recommendations to mitigate negative impacts and optimise benefits. The resulting information is synthesised into the draft EIAr that will be made available to I&APs for review.

- EIAr: This report's purpose is to gather environmental information and evaluate the overall project impacts, consider mitigation measures and alternative options, and make recommendations in choosing the best development alternative. The EIAr identifies mitigation measure/management recommendations to minimise negative impacts and enhance benefits.
- The draft EIAr and associated reports were made available for public and authority review and comment for a period of thirty days as it was for scoping phase. The availability of the draft EIAr was communicated to all registered I&APs and made easily accessible. After comments have been received, the final EIAr was compiled and submitted to the competent authority (DMRE) for review. This report will assist the DMRE in making an informed decision.
- EMPr: The EMPr provides guidelines to the proponent and the technical team on how to best implement the mitigation measure/management recommendations outlined in the EIAr during the construction, operational and decommissioning/rehabilitation phase. The EMPr is a legally binding document, and once approved cannot be amended without permission from the DMRE.
- PPP: The PPP initiated during the scoping phase, is continued. This includes continuous engagement with I&APs and stakeholders, through meetings, receiving comments, issues and concerns raised by I&APs and the authorities during the review period, and provides relevant responses to these comments.

16 DESCRIPTION OF ALTERNATIVES TO BE CONSIDERED, INCLUDING THE OPTION OF NOT GOING AHEAD WITH THE ACTIVITY

According to the MPRDA and NEMA regulations, feasible alternatives need to be considered and assessed during the scoping and impact assessment phase of the project. During the scoping phase, based on professional judgement of the EAP, the engineering designs, specialist inputs, and I&AP comments, alternatives have been considered. The alternatives identified must serve to achieve the triple bottom-line of sustainability i.e. they must meet the social, economic and ecological needs of the public. The alternatives must also aim to address the key significant impacts of the proposed project by maximising benefits and avoiding or minimising the negative impacts. The primary objective must be to avoid all negative impacts, rather than minimise them.

The "feasibility" and "reasonability" of and the need for alternatives must be determined by considering, inter alia:

- The general purpose and requirements of the activity
- Need and desirability
- Opportunity costs
- The need to avoid negative impact altogether

- The need to minimise unavoidable negative impacts
- The need to maximise benefits
- The need for equitable distributional consequence

A comparative assessment (in fulfilment with the above criteria) of all alternatives identified was undertaken as part of the Impact Assessment Phase.

17 TERRESTRIAL ECOLOGY

The Terrestrial Ecology Assessment undertaken during the EIA Phase is attached in Appendix 9.

17.1 Terrestrial threatened ecosystem

The SANBI, in conjunction with the DEA, released a draft report in 2009 entitled *Threatened Ecosystems in South Africa: Descriptions and Maps*, to provide background information on the List of Threatened Ecosystems (SANBI, 2009). The purpose of this report was to present a detailed description of each of South Africa's ecosystems and to determine their status using a credible and practical set of criteria. The following criteria were used in determining the status of threatened ecosystems:

1. Irreversible loss of natural habitat
2. Ecosystem degradation and loss of integrity
3. Limited extent and imminent threat
4. Threatened plant species associations
5. Threatened animal species associations
6. Priority areas for meeting explicit biodiversity targets as defined in a systematic conservation plan

In terms of section 52 (1) (a), of the NEM:BA, a new national list of ecosystems that are threatened and in need of protection was gazetted on 9 December 2012 (Government Notice 1002 (Driver et. al., 2004). The list classified all threatened or protected ecosystems in South Africa in terms of four categories: Critically Endangered (CR), Endangered (EN), Vulnerable (VU), or Protected. The purpose of categorising these ecosystems is to prioritise conservation areas in order to reduce the rates of ecosystem and species extinction, as well as preventing further degradation and loss of structure, function, and composition of these ecosystems. It is estimated that threatened ecosystems make up 9.5% of South Africa, with critically endangered and endangered ecosystems accounting for 2.7%, and vulnerable ecosystems 6.8% of the land area. It is therefore vital that Threatened Terrestrial Ecosystems inform proactive and reactive conservation and planning tools, such as Biodiversity Sector Plans, municipal Strategic Environmental Assessments (SEAs) and Environmental Management Frameworks (EMFs), Environmental Impact Assessments (EIAs) and other environmental applications (Mucina et al., 2006). According to data sourced from the SANBI, the proposed project is situated in a VU ecosystem (Eastern Highveld Grassland).

The Regulations in terms of Chapter 5 of the NEMA requires a description of the potential impacts the proposed development will have on the environment. Table 27 presents details of the identified impacts for the different proposed project activities and their proposed mitigation measures.

17.2 Impact assessment for the proposed project

Table 26: Identified impacts for the different proposed project activities and their proposed mitigation measures

Activity/aspect	Impact	Stage	Nature	Magnitude	Extent	Duration	Probability	Significance before mitigation	Mitigation measures
Vegetation clearing for the mining purpose	Destruction of protected plant species	Construction/ mining	Negative	Low (4)	Site only (1)	Long term (4)	Definite (5)	Medium (45)	1. Avoid areas like sheetrock with protected or listed plants on-site. 2. Use available farm roads to avoid trampling red listed plant species. 3. Supervision by an ecologist to ensure success of the rescue operation.
	Removal of the natural vegetation	Construction/ mining	Negative	Moderate (6)	Site only (1)	Long term (4)	Definite (5)	Medium (55)	4. Due to the sensitivity of the area, it is advised that areas designated for vegetation clearing should be identified, visibly marked off and approved as part of mining map. 5. Vegetation clearing areas should be kept to a minimum and restricted to the mining sites. 6. Exposed areas should be rehabilitated with plants indigenous to the project area after construction.
	Disturbance to animals on site	Construction/ mining	Negative	Moderate (6)	Local (2)	Short term (3)	High (4)	Medium (44)	7. Do not disturb nests, breeding sites or young animals. Do not attempt to kill or capture snakes unless a direct threat to employee safety. 8. Dogs or other pets are not allowed at the worksite, as they are threats to the natural wild animal. 9. A low-speed limit should be enforced on-site to reduce wild animal-vehicle collisions. 10. No animals must be intentionally killed or destroyed and poaching and hunting must be prohibited on-site. 11. Severe contractual fines/immediate dismissal must be imposed on any contract employee who attempts to snare or otherwise harm remaining faunal species. 12. Hunting weapons are prohibited on-site.

Activity/aspect	Impact	Stage	Nature	Magnitude	Extent	Duration	Probability	Significance before mitigation	Mitigation measures
									13. Contract employees must be educated on the value of wild animals and the importance of their conservation. 14. The ECO must conduct regular site inspections to remove any snares or traps that have been erected. 15. Employees and contractors must be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage. 16. Ensure that the colours used to paint the buildings, including the roof, blend with the environment.
	Increased soil erosion, increase in silt loads and sedimentation	Construction/ mining	Negative	Low (4)	Local (2)	Long term (4)	Definite (5)	Medium (50)	17. After mining, disturbed areas must be rehabilitated. 18. Avoid areas with sensitive soils and steep slopes during rain or windy season. 19. Ensure that roads are not paved, but well-maintained (gravel) to reduce water speed and promote infiltration.
	Establishment and spread of declared weeds	Construction/ mining	Negative	High (8)	Site (1)	Long term (4)	Definite (5)	High (65)	20. The best mitigation measure for alien and invasive species is the early detection and eradication of these species. This will be done using a monitoring programme. 21. An alien invasive management programme must be developed and implemented to control alien invasive species.
Waste generation	Pollution due to oil and fuel spills, erosion, and ablution facilities.	Construction/ mining	Negative	Moderate (6)	Local (2)	Long term (4)	Definite (5)	High (60)	22. Proper ablution and storage facilities must be provided on-site. 23. Proper Standard Operating Procedures (SOPs) must be in place to regulate refuelling and other potential polluting activities. 24. Must have rehabilitation strategy as part of EMP, like a clean-up plan/strategy if spills occur and proper

Activity/aspect	Impact	Stage	Nature	Magnitude	Extent	Duration	Probability	Significance before mitigation	Mitigation measures
									facilities (ablution) to ensure no sewerage spills into drainage lines and streams.
Wetland destruction	Mining on wetlands/along wetlands	Mining	Negative	High (8)	Local (2)	Long term (4)	Definite (5)	High (70)	25. Mining across wetlands must not take place and coarse immovable material (likeboulders and other rock in river channels) must not be removed to ensure continued stability and functioning of the river systems. 26. Ensure that mining activities are carefully monitored to limit impact on wetlands/riparian areas (particularly in-stream habitat); must be approved by WUL. 27. Do not lower the original stream bed / profile of the wetland as this may result in scouring in an upstream direction and further alteration of bed conditions.

17.3 Impact assessment the closure phase

Table 27: Impacts and proposed mitigation measures of activities in the Closure phase of the Mining project

Activity	Environmental aspect	Potential impact	Significance before mitigation	Mitigation type	Significance after mitigation
Closure and rehabilitation of surface mining (Box cut)	Biodiversity	**Topsoil, Overburden and ROM Stockpiles** **Landscaping and Replacement of Soils** • Surface mining activities usually mix the originality of the soil. **Box cut, opencast mining with a Roll over Rehabilitation Sequence** • Large area covered by box cut or open pit. **Access and Haul Roads Construction** • Compacted access and haulage rods they sterilize the soil due to compaction. • Imported road materials usually hamper fertility of the soil. **Mobile offices, toilets and sanitation** • Structures erected can cause completion on soil.	L	**Topsoil, Overburden and ROM Stockpiles** **Landscaping and Replacement of Soils** ▪ Final mitigation to reshape the landscape as close as possible to its original topographic features (e.g. slope and drainage lines, wetlands). ▪ Rehabilitation activities to place the plinthic and grey clay material in the sub-soils and the original A and B horizon material on top. Create an environment where the topsoil is at least 40- 60cm deep for proper aeration water holding capacity and drainage, resulting in proper root development. **Seeding with Grass Species and Legume Crops** ▪ Rehabilitation strategy to consider a three-stage approach where pioneer species is planted to create a soil environment for sub-climax species. After some time, climax species can be introduced. There are many case studies where reseeding is necessary because the sub-climax and climax grass species die back after the first or second season. ▪ Post rehabilitation land use to consider legume crops like soya, cow peas, Dolichos, or Lucerne to improve the soils microbial activity and soil	L

		Pollution Control Dam (PCD) • PCD covers large areas where vegetation has to grow. **Demolished structures prior mining and post mining** • The structures prior and post mining if they are not removed, they cannot sustain the ecosystem.		structure. ▪ Application of compost and other organic humic substances can be used to speed up the process of restoring soil Biodiversity **Box cut, opencast mining with a Roll over Rehabilitation Sequence** The excavated area must serve as a final depositing area for the placement of all waste and above mentioned stockpiles during mining. ▪ Rocks and coarse material removed from the excavation must be dumped into the excavation. ▪ Once excavations have been refilled with overburden, rocks and coarse natural materials and profiled with acceptable contours and erosion control measures, the topsoil previously stored, shall be returned to its original depth over the area. ▪ The area shall be fertilized if necessary, to allow vegetation to establish rapidly. ▪ The site shall be seeded with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora. **Access and Haul Roads Construction** • Roads shall be ripped or ploughed, appropriately fertilized (based on a soil analysis study) to ensure the re-growth of vegetation. • Imported road construction materials which may hamper re-growth of vegetation must be removed and disposed of in an approved manner prior to rehabilitation. • Roads that can and will be used by other users post closure should, however, be left provided this is agreed upon by all parties concerned. **Mobile offices, toilets and sanitation** On completion of operations, all buildings, structures or	

				objects on the office site shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002): ▪ Where office sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped. ▪ Areas containing sanitation drains shall be compacted and covered with a final layer of topsoil to a height of 10cm above the surrounding ground surface. ▪ The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora. ▪ Photographs of the office sites, before and during the mining/ operation and after rehabilitation, shall be taken at selected fixed points and kept on record for the information of the Regional Manager. Pollution Control Dam (PCD) • The PCD and associated structures (pipelines) erected will be removed at closure. • The plastic lining must be removed and can be recycled. • The earth walls will be flattened, and the area profiled and re-vegetated. Demolished structures prior mining and post mining • The rubbles from prior and post mining structures will be returned or used to backfill the box cut upon closure. • Once the entire mine site infrastructure is demolished (including new infrastructure discussed above), the areas must be covered with a minimum of 300 mm of uncontaminated topsoil and vegetated	

				with vegetation that is suitable for the type of soil and climate.	

Activity	Environmental aspect	Potential impact	Significance before mitigation	Mitigation type	Significance after mitigation
Removal of infrastructure area, conveyor and shafts	Soil	Compaction and contamination from heavy vehicles usage and spillage of hydrocarbons, reagents (from infrastructure and machinery), raw materials and dirty water runoff, and the loss of soil due to erosion by wind and or water.	M	• Return of the stored soils onto areas of disturbance where infrastructure has been demolished and removed. • Contour and stabilise slopes to be free draining and limit/control vehicle movement and dirty water outflows. • Introduction of vegetation cover and irrigation in the first months of introduction or until such time, vegetation's sustain itself.	L
	Vegetation	Increase in alien vegetation of the site are common due to indigenous vegetation clearance. Alien vegetation can be introduced by humans, vehicles and natural winds.	M	• Re-establish indigenous vegetation as soon as possible. • Conduct alien species survey quarterly. • Establishment of an Alien Invasive management plan and implementation thereof on a yearly basis.	L
	Air Quality	**Demolition and removal of all infrastructure (incl. transportation off site)** Demolition of buildings and foundation and subsequent removal of rubbles generated. There is cleaning-up of workshops, fuels and reagents, removal of power and water supply, removal of haul and access roads. Potential for impacts during this phase will depend on the extent of demolition and	M	• The area of disturbance must be kept to a minimum, as demolition should be done judiciously avoid the exposure of larger areas to wind erosion. • Speed restrictions when vehicles are loading demolished materials should be imposed and enforced. • Cabs of machines should be swept or vacuumed regularly to remove accumulated dust. • Exhaust pipes of vehicles should be directed so that they do not raise dust. • Engine cooling fans of vehicles should be shrouded so that they do not raise dust.	M

Activity	Environmental aspect	Potential impact	Significance before mitigation	Mitigation type	Significance after mitigation
		rehabilitation efforts during closure as well as features which will remain. The process includes dismantling and demolition of existing infrastructure, transporting and handling of topsoil on unpaved roads in order to bring the site to its initial/rehabilitated state. Demolition and removal of all infrastructures will cause fugitive dust emissions.		• Hard surfaced haul roads or standing areas should be washed down and swept to remove accumulated dust. • Dust suppression of roads being used during rehabilitation should be enforced.	
	Noise	Demolition activity has also the potential to increase noise levels. Demolition can sometime be made possible by use of explosives (Blasting).	M	**Pre-planning phase mitigation options be adhered to.** Proper or better selection of demolition method must be undertaken. Communication between the communities and the mine developers need to be implemented and maintained, highlighting the outcome mine area. The mine developer should consider co-ordinate, working time with periods when the communities are likely not at home. An example would be to work within the 8 am to 2 pm timeslot to minimize the significance of the impact.	L
	Surface water	Composition of infrastructure) can potentially cause contamination and deterioration in water quality due to erosion.	M	• Ensure that demolished materials are removed immediately after being demolished to avoid contamination.	L
Closure of the mine	Ground water	• Deterioration of groundwater quality • Leaching/Seeping of contaminants into sub-surface	H	• A three-year water monitoring programme post closure must be imposed. • A pollution control dam (PCD) could be used to intercept polluted seepage water. This should be considered if it is found that the Olifant's are indeed negatively affected by pollution. Regular sampling of	M

Activity	Environmental aspect	Potential impact	Significance before mitigation	Mitigation type	Significance after mitigation
				the streams/rivers/wetlands is essential to decide on this option if needed. • Implement as many closure measures during the operational phase, while conducting appropriate monitoring programmes to demonstrate actual performance of the various management actions during the life of mine. • All mined areas should be flooded as soon as possible to minimise oxygen from reacting with the remaining pyrite. • Monthly groundwater sampling must be conducted to establish a database of groundwater quality to assess plume movement trends. • Audit the monitoring network annually. • Geochemical testing of the ROM should be conducted to aid in the prediction of contaminant release and potential geochemical changes induced in the subsurface, by means of geochemical modelling. • Clean and dirty water trenches should be separated as planned. • Waste rock dumps and stockpiles can be lined with available compacted clay from the area to minimise infiltration of contamination.	
	Ground water	Decant increase of the level of water table	H	• Mine to consider treatment of the decant water. • Major fractures encountered while mining must be sealed by grouting, both on inflow and outflow areas • A decant management plan will be developed at mine closure. • Monitoring of the water table rebound will continue post-closure and the modelling updated to quantify the long-term impacts. If necessary, the management measures should be revised based on the modelling results.	M

Activity	Environmental aspect	Potential impact	Significance before mitigation	Mitigation type	Significance after mitigation
				• Treated water will be discharged to the river as per DWS standard or supplied to the nearest farming plots.	
	Ground water	**Formation of AMD** At the closure and decommissioning phase, ingress of water and oxygen into the workings could lead to AMD due to sulphide minerals present. Should the contaminated mine water decant onto surface and then be allowed to enter into the surface water resources of the area, it would have a significant impacting potential, resulting in pollution of the surface water resource.	H	• Geochemical assessment and modelling exercise should be conducted to determine the post closure quality of mine water. This will also benefit the Water Use Licence Application in process. • Monthly monitoring of water levels and water quality. • The rise of water will be closely monitored to ensure that the environmental safe level is not exceeded and that appropriate extraction works and treatment facilities are constructed in time to treat the surplus water once the environmental safe level is reached. The water will then be actively maintained at or below the environmental safe level. • A decant management plan will be developed at mine closure. • Monitoring of the water table rebound will continue post-closure and the modelling updated to quantify the long-term impacts. If necessary, the management measures should be revised based on the modelling results. • Treated water will be discharged to the river system as per DWS standards or neighbouring farming plots.	H
	Socio Economic	Loss of employment due to closure of mine	H	• Employee supporting initiatives such as Counselling and assistance is provided, in collaboration with the workers and union representatives, to workers to overcome shock and distress of being retrenched and assistance is necessary in obtaining other employment and manage retrenchment packages. • Proper retirement plans and savings.	M

Activity	Environmental aspect	Potential impact	Significance before mitigation	Mitigation type	Significance after mitigation
	Topography	Sinkholes of the rehabilitated area will cause ponding that will cause an increase in the recharge into the mined-out workings	H	• Install ground-level movement monitoring systems.	M
	Soils	Topsoil will be mixed during the placement procedures.	M	• Consider natural system with materials from the B horizons first and overlay it with the A horizon soils. Avoid overload of trucks to prevent spillages of topsoil. Avoid driving over the topsoil areas to limit compaction and rip the topsoil after placement.	L
	Vegetation	Failure to establish vegetation on the areas where the infrastructure was removed can enhance the possibility of the establishment of alien vegetation.	L	• Re-establish indigenous vegetation as soon as possible after the placement of the topsoil. • Return the land to agriculture and support it.	L
	Air Quality	**Rehabilitation (spreading of soil, re-vegetation & profiling/contouring)** There is the reshaping and restructuring of the landscape.	L	• Plants used for re-vegetation should be indigenous to the area, hardy, fast-growing, nitrogen-fixing, provide high plant cover, be adapted to growing on exposed and disturbed soil (pioneer plants) and should easily be propagated by seed or cuttings. • The area of disturbance must be kept to a minimum, as demolition should be done judiciously avoid the exposure of larger areas to wind erosion. • The bare soil will be prone to erosion and therefore there is need to reduce the velocity near the surface of the soil by re-vegetation. • Leaving the surface of the soil in a coarse condition reduces wind erosion and ultimately reduces the dust levels. • Additional mitigation measures include keeping the soil moist using sprays or water tanks, using wind breaks. • The best time to re-vegetate the area must be linked to the distribution and reliability of the rainfall.	L

Activity	Environmental aspect	Potential impact	Significance before mitigation	Mitigation type	Significance after mitigation
				• Speed restrictions should be imposed and enforced. • Cabs of machines should be swept or vacuumed regularly to remove accumulated dust. • Exhaust pipes of vehicles should be directed so that they do not raise dust. • Engine cooling fans of vehicles should be shrouded so that they do not raise dust. • Dust suppression of roads being used during rehabilitation should be enforced. • It is recommended that the rehabilitation by vegetating should begin during the operational phase already as the objective is to minimise the erosion. • These measures should be aimed to reduce the potential for fugitive dust generation and render the impacts on ambient air quality negligible.	
	Visual	Final rehabilitation, after care and maintenance of the vegetation and to ensure that the final landform is maintained.	M	• Return the land closer to its natural state. • Plant some indigenous trees to create a barrier between the neighbours and roads. • Dust from Stockpile areas, roads and other activities must be managed by means of dust suppression to prevent excessive dust. • A wind barrier system that encloses the stockpiles and tailing dumps;	M

17.4 Cumulative impacts

Table 28: Assessment of potential cumulative impacts

Activity	Environmental aspect	Potential Impact	Significance before mitigation	Mitigation type	Significance after mitigation
Tornowize Mine Project	Visual	The construction of the proposed Tornowize mine with its associated infrastructure will increase the cumulative visual impact of mining/industrial type infrastructure within the region. In context of the existing mining and agricultural character, the construction phase of the mine will contribute to a regional increase in heavy vehicles on the roads in the region, with construction activity noticeable. In context of the existing mining and agricultural character, the operational phase of the mine will contribute to a regional increase in small vehicles on the roads in the region. An overland conveyor will also be added to the scenery of the immediate surroundings	H	• The visual impact can be minimized by the creation of a visual barrier along the roads. The area will be rehabilitated after mining is concluded and thus the visual impact will be removed, and the area will be restored. • The visual impact and impact on sense of place of the proposed project will contribute to the cumulative negative effect on the aesthetics of the study area.	M
	Biodiversity	The impacts on the ecology of the area will be significant more especially on the surface mining or box cut area, if highly sensitive areas are disturbed such as wetlands. It is expected that there will be losses of vegetation and flora along with associated faunal habitat. The primary impacts will be fragmentation and edge effects with a reduction in movement of remaining naturally occurring and isolation of pockets of vegetation.	M	• Construction of all above surface infrastructure on agricultural land • Implement or adopt mitigations by biodiversity study.	L
	Soil and topography	Sinkholes are commonly associated with underground mining is subsidence.	H	• Monitor of the ground level movements.	L

Activity	Environmental aspect	Potential Impact	Significance before mitigation	Mitigation type	Significance after mitigation
	Ground water	The groundwater quality will be contaminated due to mining activities.	M	• Monitoring of ground water to form a baseline • Update hydro census	M
	Socio Economic	Project, together with other existing and planned mining operations will result in several economic benefits for local communities through direct and multiplier effects. These effects are usually stimulated by wage bills, local and regional procurement spend, and investment into LED. The proposed Project will add to the existing positive effect of mining on local economic development by applying best practice in terms of local employment and procurement, as well as LED.	P	• No mitigation for this positive impact needed.	P
		Population influx is also likely to exacerbate pressure on existing infrastructure and services, and the growth or establishment of informal settlements.	H	• Communication with the municipality • Formalisation of informal settlement	M

17.5 Summary of specialist reports

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

Table 29: Specialist summary report

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations included in the EIA report	Reference to section in report included
Biodiversity studies: **Flora**	❖ The proposed project area consists of Moist Sandy Highveld Grassland vegetation and is covered. and no floral species of conservation concern were observed within the project area, only species. of least concern were observed due to the area being heavily modified. However, if the species ofconservation concern might be discovered during mining activities, the applicant is required to follow the list of protected species under Schedule 11, which state that no person may cut, disturb,damage, or destroy any protected tree or possess, collect, remove, transport, export, purchase,sell, donate, or in any other manner acquire or dispose of any protected plant unless he or she is the holder of a permit which authorises him or her to do so. When choosing areas to be mined, theapplicant should prioritize development in low sensitive/already heavily modified areas. Theapplicant must ensure that animals should not be intentionally killed/poached if identified. Thereshould be a relocation of any threatened mammal species which might be identified onsite before commencement of mining .	X	Attached detailed biodiversity study report on Appendix 9.
Geo-Hydro Assessment	<u>Monitoring</u> ❖ Conduct water monitoring and implement remedial actions as required and effective rehabilitation to as close to pre-mining conditions as practically possible. ❖ It is recommended that the monitoring network be extended to all the boundaries; north, south, east and west of the proposed mining right. The construction must be overseen by a qualified Hydrogeologist to monitor pollution in the upper weathered aquifer as well as the lower fractured aquifer. ❖ A monitoring network should be dynamic. This means that the network should be extended over time to accommodate the migration of contaminants through the aquifer as well as the expansion of infrastructure and/or addition of possible pollution sources. An audit on the monitoring network should be conducted annually	X	Attached detailed Hydrogeology study report on appendix 12.

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations included in the EIA report	Reference to section in report included
	<u>Modelling</u> ❖ The numerical model should be recalibrated as soon as more hydrogeological data such as monitoring holes are made available. This would enhance model predictions and certainty <u>Water contamination</u> ❖ Prevention of pollution of surface water resources and impacts on other surface water users by training of workers to prevent pollution, equipment and vehicle maintenance, fast and effective clean-up of spills, effective waste management, manage clean and dirty water in accordance <u>Flow of water</u> ❖ The disturbance of streams and surface drainage patterns and reduction in flow to downstream must be mitigated through careful design of ephemeral stream diversion that minimizes impacts on the downstream environment, limit activities and infrastructure within wetland and watercourses and their flood lines and implementation of storm water management plan to divert clean water ❖ Clean water trenches should be constructed surrounding the mining right to prevent clean water from entering the mining area, regarded as a dirty water catchment ❖ Dirty water trenches must be constructed as well to direct water from the mine to the pollution control dam, thereby preventing any contaminant water from leaving the mine area.		
Soil, land use and land capability Assessment	• The proposed mining land should be returned to its origin as before mining activities and the rehabilitation performance assessment in the proposed land must be done progressively (annually) during the operational phase by a soil specialist. • Final surface rehabilitation of all disturbed areas during mine activities. Rehabilitation of unnecessary water management facilities once appropriate to do so. • Specialists should be used to evaluate the erosion and other possible impacts during the entire mining process.		Attached detailed soil and land study report on appendix 15.

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations included in the EIA report	Reference to section in report included
	• Limit impacts to the footprints to keep physical impacts as small as possible. Areas for road, site lay-out should be minimized, dust generation.		
Blasting Impact Assessment	• Singo Consulting (Pty) Ltd was contracted by Tornowize (Pty) Ltd as part of Environmental Impact Assessment (EIA) to perform an initial review of possible impacts with regards to blasting operations in the proposed new opencast mining operation. Ground vibration, air blast, fly rock and fumes are some of the aspects as a result from blasting operations. The report concentrates on the ground vibration and air blast intends to provide information, calculations, predictions, possible influences and mitigations of blasting operations for this project. • Due to the location of R35 cutting through the project area, blasting is not recommended for eastern part of the project, a ripper can be used instead. • Where necessary soft blasting can be used away from the R35. • There is no specific concern for fly rock currently. The current proposed stemming lengths used provides for some control on fly rock. Consideration can be given to increasing this length for better control. Specific designs where distances between blast and point of concern are known should be considered. Recommended stemming length should range between 20 and 30 times the blasthole diameter. In cases for better fly control this should range between 30 and 34 times the blast holes diameter. Increased stemming lengths will also contribute to more acceptable airblast levels. • The calculated minimum safe horizontal distance is 500m from any publicinfrastructures. The final blast designs that may be used will determine the finaldecision on safe distance to evacuate people and animals. This distance may begreater pending the final code of practice of the mine and responsible blaster'sdecision on safe distance. The blaster has a legal obligation concerning the safedistance and he needs to determine this distance	X	Attached detailed Blasting study report on appendix 11.
Rehabilitation Plan	• Ensure that all water users have been identified and that the applicable authorisations are obtained in terms of the NWA (obtain WUL before construction or operation of the mine is undertaken) • It is recommended that the financial provision for closure and rehabilitation be annually updated as per the requirements of the MPRDA Surface water monitoring of associated wetlands surrounding the project area is to be undertaken to determine the impacts associated with operations of the proposed mine.	X	Attached detailed Rehabilitation study report. On appendix 16.

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations included in the EIA report	Reference to section in report included
	• Regular audits should be undertaken by a soil scientist during the soil stripping process. This will guarantee that soil is stripped and stockpiled correctly. • Regular audits should be undertaken to monitor the progress of areas that have been rehabilitated.		
Wetland Study	• A Pollution Control Dam should be developed onsite and all dirty water from the working area should be channeled to Pollution Control Dam through dirty water trench to avoid contamination of the wetlands. • The Pollution Control Dam and dirty water trenches should be lined to avoid contamination of soil and surface and underground water. • No dirty water should be channeled to wetlands area to avoid contamination of wetlands. • Dirty water from the mining right area should not be mixed with clean water. • Adhere to stormwater management design measures to ensure proper stormwater management onsite.	x	Attached detailed Wetland study report on appendix 20.

Specialist Reports are attached on Appendices Sections:

18 ENVIRONMENTAL IMPACT ASSESSMENT

18.1 Summary of the key findings of the EIA

The EIA confirms that the proposed activities (without mitigation) are expected to have impacts of high significance in relation to groundwater, surface water, and socio-economic conditions. The key impacts relating to the Tornowize Mine with high significance before mitigation are included in the following table.

Table 30: Summary of high-impact activities

Phase	Activity	Aspect	Potential impact	Pre-mitigation	Post-mitigation
Construction	Construction of the pollution control dam.	Surface water	• Loose material can contaminate surface water in the event of a storm water run-off occurring during the construction of these facilities. Runoff from areas where hydro-carbon spills are present may also cause deterioration in surface water quality. • Blasting of surfaces, footprint clearance on the sites of the proposed processing plant and other infrastructure, and other excavations in the mining area are likely to lead to increased sediments in runoff water.	High (-)	Medium (-)
	Mine development and associated conveyor route development between Tornowize Mine and nearest rail-siding	Surface water	• Loose material can contaminate surface water in the event of a storm water run-off occurring during the construction of the roads. Runoff from areas where hydro-carbon spills are present may also cause deterioration in surface water quality.	High (-)	Low (-)
		Noise	• Construction activities may cause an increase in background noise levels. Blasting of the shafts and ramp material may cause structural damage to property and be a danger to people and animals within 500 m of the blast area. Drilling of blast holes can potentially cause an increase in background noise levels. It also has the potential to cause deterioration in air quality due to generation of dust and vehicle emissions. • Noise impact that would only occur in the operational phase. • Noise level can be controlled by means of berms and shielding structures.	High (-)	Medium (-)
		Heritage structures	• Construction activities have the potential to impact the historical structures.	High (-)	Medium (-)

Phase	Activity	Aspect	Potential impact	Pre-mitigation	Post-mitigation
		Noise	• Noise impact that would only manifest in the operational phase but that can be avoided in the construction phase by implementation of measures in construction of ventilation shafts. • Impacts of noise need to be controlled by means of berms and shielding structures.	High (-)	Medium (-)
	Socio-economic impact of the Tornowize Mine project as a whole		**Health and safety risks for workers** • Inadequate management of the construction process and general construction related activities could result in health and safety risks for workers, manifesting in the following ways: • Construction related accidents due to structural safety of project infrastructure. The excavation of the shaft will result in the formation of topographical voids, which may be a safety risk to the employees, livestock and neighbouring landowners. • Dust generation and air pollution resulting in respiratory diseases • High ambient noise levels caused by machinery and construction equipment resulting in health issues for workers. • Poor management of the construction process resulting in pollution problems (e.g. insufficient sanitation facilities, littering and refuse), fly's rodents and pests and possible contamination of water sources. • Unsafe and insufficient drinking water • An increase in HIV/AIDS and other STDs due to prostitution activities and temporary sexual relationships with local women, unwanted pregnancies that place further pressure on Basic Health Care Services. • Dehydration and sunburn, as high temperatures could be experienced during summer months.	High (-)	Medium (-)
	Socio economic of the Tornowize Mine project as a whole		**Community health and safety** • Residents, surrounding landowners and road users could be subject to community health and safety impacts if the construction process is not managed adequately. This could include: • Road accidents, subsequently placing pressure on local emergency, disaster management and health services (fire, ambulance, police services, etc.) • Unauthorised access/trespassing at the construction site, resulting in theft, public safety issues and even death	High (-)	Medium (-)

Phase	Activity	Aspect	Potential impact	Pre-mitigation	Post-mitigation
			• Fire hazards at the construction site and the possibility of fires spreading and damaging surrounding farmland and infrastructure. • Dust generation and air pollution caused by gravel roads, and machinery resulting in respiratory diseases.		
Operational	Operation of mine, conveyor belt and infrastructure area containing stockpiles	Surface water	Loose material as well as the contaminated overburden material can contaminate surface water during rainfall events resulting in dirty water runoff. Runoff from areas where hydrocarbon spills are present may also cause deterioration in surface water quality.	High (-)	Low (-)
		Ground water	Seepage from the overburden stockpile can contaminate the groundwater immediately below the stockpile as well as adjacent areas.	High (-)	Low (-)
		Air quality	**Dust from Material Handling** Material handling of coal and crushed coal are potential sources of dust emissions at the various handling stations. Handling stations include the conveyor transfer points and the loading of the conveyors. Various climatic parameters e.g. Wind speed and precipitation influence the amount dust generated from material handling operations. The volume of material being moved and height that the material is dropped at also influence the dust generation at the various handling points. Dust can influence adjacent roads and households	High (-)	Medium (-)
		Noise	During the operational phase, increased noise levels can be expected	High (-)	Medium (-)
		Groundwater	**(Lowering of groundwater levels- boreholes)** The mining operation in the operational phase may draw down the water table, affecting boreholes of adjacent property owners	High (-)	Medium (-)
Operational	Crushing and screening of coal	Air quality	**Emissions by means of crushing and screening** In this activity, the use of the primary and secondary crusher and Discard handling are the most likely to have implications on ambient air quality. The crushing process releases fugitive dust, especially if there are no enclosure and water sprays. Dust contained within the RoM ore can be released into the atmosphere during this process i.e. fugitive dust (containing TSP, as well as PM10 and PM2.5). Wind erosion from stockpiles can be a perennial source of dust if not properly managed during and post mining operations. The plant,	High (-)	Low (-)

Phase	Activity	Aspect	Potential impact	Pre-mitigation	Post-mitigation
			crushing and screening areas all have the potential to generate dust and therefore specific mitigation measures can be assigned to each of these activities.		
	Operation of the Tornowize Mine in general	Socio-economic Impacts: Local economic impacts	**Impacts on procurement / supporting industries / local SMMEs** The Mining Charter sets BEE compliance guidelines and as such Tornowize Mine will have to procure all products and/or services from BEE compliant outlets. In order to ensure and promote the procurement of products and/or services from SMMEs who are BEE compliant as well as black owned and/or black empowered, strategies are identified in the Colliery's SLP. It is expected that most goods and services will be available locally from within the Municipal area. Supporting industries, local SMMEs and contractors include: • Contractors to transport and dispose of domestic and industrial waste • Equipment cleaning (trucks, conveyors, belt) • Maintenance and repairs of infrastructure, roads, etc. • Operation of tuck shops • Laundry and catering services • Security, etc.	Medium positive	High positive
		Socio-economic Impacts: Skills development and social responsibility	**Impacts on the local community / community projects** As part of a mine's Social and Economic Development responsibility, the mine must get involved with a relevant Local Economic Development Projects as identified in the IDP of a municipality. Tornowize Mine is however not in the position to get involved with the day-to-day running of a LED project.	Medium positive	High positive
		Socio-economic Impacts: Individual and family level impacts	**Impacts of the conveyor belt** At this stage the exact properties to be impacted by the conveyor belt's route is unknown. Impacts that could occur include safety issues for humans and animals, dust, illegal trespassing and security impacts (theft of the conveyor belt infrastructure, etc.).	High (-)	High (-)

Phase	Activity	Aspect	Potential impact	Pre-mitigation	Post-mitigation
		Socio-economic Impacts: Individual and family level impacts	**Illegal trespassing** Illegal trespassing could occur at the shaft complex and along the conveyor belt route, resulting in safety (death) and security issues (theft, vandalism, etc.). Should the recruitment process not be managed adequately, illegal informal settlements could be established on private land if workers and contractors want to reside close to their place of employment.	High (-)	High (-)
		Socio-economic Impacts: Individual and family level impacts	**Health and safety risks for workers** Mining activities could impact on the health and safety of workers: Use of the continuous mechanical miners may generate dust resulting in respiratory diseases Employees working near mine machinery will be exposed to high levels of noise, which may in the long run be detrimental to their health Traffic accidents on access and haul roads An increase in HIV/AIDS and other STDs due to prostitution activities and temporary sexual relationships with local women, unwanted pregnancies that place further pressure on Basic Health Care Services. Employees that live away from their families tend to have long-term relationships with multiple partners and often do not consistently use condoms. The risk of contracting HIV is also significant when women aim to start or extend their families; Accidents due to structural safety of project infrastructure and so forth	High (-)	High (-)
		Socio-economic Impacts: Health and safety impacts	**Community health and safety risks** Surrounding landowners, residents and road users in and around the proposed new shaft development, stockpile areas and settlement dams could be subject to community health and safety impacts if the operation of the mine is not managed adequately. Possible impacts during the operational phase are not unlike those that could be experienced during construction, albeit with a lower severity and could include: • Road accidents (it is anticipated that large construction vehicles will leave the site only for major overhaul and maintenance purposes, as the conveyor belt will be used to transport coal). • Unauthorised access/trespassing at the shaft complex and conveyor belt, resulting in theft and related public safety issues	High (-)	High (-)

Phase	Activity	Aspect	Potential impact	Pre-mitigation	Post-mitigation
			• Veld fires and the possibility of fires spreading and damaging surrounding farmland, private properties and infrastructure • Dust generation and air pollution caused by gravel roads and vehicle emissions and machinery resulting in respiratory diseases. • Possible subsidence of undermined areas during the operational phase and thereafter • Possible accidents and death should people get in contact with the conveyor.		
Closure	Closure of Opencast mine	Groundwater	**Deterioration of groundwater quality** Leaching/Seeping of contaminants into sub-surface	High (-)	Medium (-)
			Decant Rise of water table	High (-)	Medium (-)
			Formation of Acid Mine Drainage (AMD) • At the closure and decommissioning phase, ingress of water and oxygen into the voids could lead to AMD due to sulphide minerals present. • Local patches of mine water in contact with carbonaceous material will be acidic as the carbonate minerals are not efficient to neutralize the acid produced. As the mine gets flooded this acidic water will meet the neutral-alkaline drainage from the silicate minerals. • Although the heterogeneity and the probable mixing of different geochemical units give uncertainty to the exact quantification of the groundwater parameters, the average mine water will only be slightly acidic over the long term in the post-closure mine system under the conditions assumed in the modelling. • Should the contaminated mine water decant onto surface and then be allowed to enter into the surface water resources of the area, it would have a significant impacting potential, resulting in pollution of the surface water resource.	High (-)	High (-)
		Socio-economic	**Loss of employment due to closure of mine** Due to the closure of the mine, job losses will occur	High (-)	Medium (-)

Phase	Activity	Aspect	Potential impact	Pre-mitigation	Post-mitigation
	Rehabilitation	Topography	Subsidence of the rehabilitated area will cause ponding that will cause an increase in the recharge into the mined-out workings	High (-)	Medium (-)
	Closure of Opencast mine	Groundwater	**Formation of Acid Mine Drainage (AMD)** At the closure and decommissioning phase, ingress of water and oxygen into the voids could lead to AMD due to sulphide minerals present. Local patches of mine water in contact with carbonaceous material will be acidic as the carbonate minerals are not efficient to neutralize the acid produced. As the mine gets flooded this acidic water will meet the neutral-alkaline drainage from the silicate minerals. Although the heterogeneity and the probable mixing of different geochemical units give uncertainty to the exact quantification of the groundwater parameters, the average mine water will only be slightly acidic over the long term in the post-closure mine system under the conditions assumed in the modelling. Should the contaminated mine water decant onto surface and then be allowed to enter the surface water resources of the area, it would have a significant impacting potential, resulting in pollution of the surface water resource.	High (-)	High (-)
		Socio-economic	**Loss of employment due to closure of mine** Due to the closure of the mine, job losses will occur	High (-)	Medium (-)
	Rehabilitation	Topography	Subsidence of the rehabilitated area will cause ponding that will cause an increase in the recharge into the mined-out workings	High (-)	Medium (-)

18.2 Final site map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided including buffers. Attach as Appendix 4.

A map as required in this Section has been attached in Appendix 5.

18.3 Positive and negative implications and risks of the proposed activity and identified alternatives

All alternatives have been assessed along with the advantages and disadvantages of the various alternative options and preferred site layout options. Positive and Negative impacts were listed in table 35 of this report.

18.3.1 Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr

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

The purpose of the EMPr is to provide relevant management measures to conduct activities with due care and diligence, as well as avoid/ limit any adverse impacts of the mining operation. The EMPr is compiled to help control impacts that may occur to meet acceptable standards, both as a legal and social responsibility to the environment within which the activities take place.

The objective of the EMPr is to create management structures that address the comments of stakeholders with regards to the development, establishes a method of monitoring and auditing environmental management practices during all phases of the activity and ensures that safety recommendations are complied with. Additionally, the EMPr provides a method to ensure performance and compliance with all the relevant regulatory authority provisions and guidelines while monitoring of the commitments allows for continual feedback and opportunities to improve.

18.4 Final proposed alternatives

Provide an explanation for the final layout of the infrastructure and activities on the overall site as shown on the final site map together with the reasons why they are the final proposed alternatives which respond

to the impact management measures, avoidance, and mitigation measures identified through the assessment.

Proposed alternatives are detailed above, and the positive and negative impacts of the alternatives and preferred option have been described. The final site map is a result of pre mining considerations of sensitive receptors, recommendations from the DWS and the evaluation of impacts is described in Table 1 and Figure 4.

18.5 Aspects for inclusion as conditions of authorisation

Any aspects which have not formed part of the EMPr that must be made conditions of the environmental authorisation. Tornowize (Pty) Ltd is a black owned company.

18.6 Description of any assumptions, uncertainties and gaps in knowledge

The following assumptions and limitations have been identified with regards to the environmental baseline, impacts and mitigation measures:

- The public participation process has been sufficiently effective in identifying the critical issues that needed to be addressed through specialist investigations and/or by the EAP. Specialist input has thus been appropriately scoped to investigate the critical issues;
- The public participation process has sought to involve key stakeholders and individual landowners. It is assumed that where participation has been sought from the organizational representative/s, that these parties have the authority to comment on behalf of their organisation;
- The public participation process provided offered opportunity for stakeholders to express any issues and concerns. It has thus been effective in identifying critical issues that the specialist investigations and/or EAP needed to address;
- A monitoring and evaluation system, including auditing, is recommended in line with this EMP, to track the implementation of this specific EMP to ensure that management measures are effective to avoid, minimize and mitigate impacts; and that corrective action is being undertaken to address shortcomings and/or non-performances.

19 REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD BE AUTHORISED OR NOT

19.1 Reasons why the activity should be authorised or not.

To our knowledge, no fatal flaws have been identified. However, I&AP's have raised many concerns as per consultation report which includes but not limited to; several environmental and social impacts are envisaged from construction phase through to post-closure, which require careful mitigation and monitoring. It is the opinion of the EAP that all major impacts have been identified and have been assigned appropriate management measures. Most HIGH negative impacts with mitigation, are reduced to a MEDIUM or LOW significance, and can be managed accordingly. There are a few impacts that will stay at a High negative significance after mitigation and include Social Economic Impacts of the Conveyor belt, illegal trespassing, Health and safety risk for workers and community health and safety risk. Others are Ground water impacts in the Closure phase that is associated with the formation of Acid Mine Drainage.

Other positive impacts that results in a High Positive Significance after mitigation include the impact on procurement / supporting industries / local SMMEs, Impacts on the local community / community projects.

It is recommended by the EAP that the proposed black owned Tornowize Mine be authorised, on the assumption that the environmental and social management commitments included in this EIA/EMPr are adhered to, the project description remains as per the description provided in this document and considering the positive social impacts associated with the project and there are already many mines that are operating from the proposed site which has been granted authorisation for. The negative and positive significance of impacts must be weighed up against each other for a final decision by the Competent Authorities.

19.2 Conditions that must be included in the authorisation

To ensure compliance with, and implementation of the EMPr by:

- Appointing of a suitably qualified individual to oversee implementation of the EMPr during all phases of the project; and
- Appointing a suitably qualified Environmental Control Officer to undertake audits on a regular basis throughout the construction phase
- To ensure that all staff, contractors and sub-contractors are aware of and understand the requirements of the EMPr and environmental issues in relation to their individual areas of work by:

- Developing an induction and training program covering the EMPr, environmental awareness, dealing with environmental incidents and waste management; and
- Advising staff commissioned during pre-construction and construction, including subcontractors, of EMPr requirements through the induction program as well as on notice boards at the contractor's camps during construction and notice boards during operation. These notice boards should cover the EMPr, environmental awareness, dealing with emergencies and waste management.
- Compile with all Water Use Licence (WUL) Authorisations and update water balance before commencement.
- The undertaking of a detailed Geo-Hydrological study with special reference to Acid Mine Drainage. The groundwater model predictions should be verified once time dependent groundwater monitoring data become available. Predicted flow simulation and decant rates for later years of mine development can significantly be improved by observation data from earlier years and subsequent updates of the groundwater model.
- Authorization should be subject to the undertaking of a ground water monitoring programme with associated updated hydro census. The monitoring programme should cover pre and post mining conditions to evaluate and determine the effect of mining on ground water supply, and pollution.

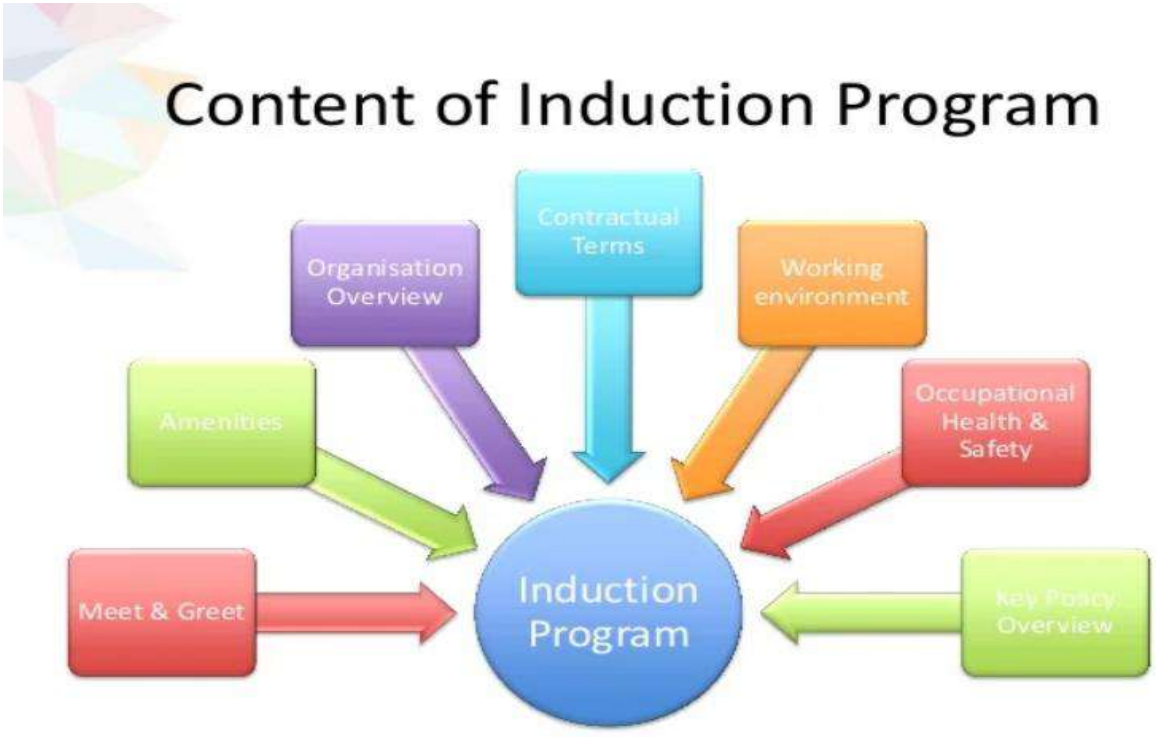


Image 20: Content of the induction programme.

19.2.1 Rehabilitation requirements

The requirements of the final rehabilitation, decommissioning and mine closure plan are stated in Appendix 4 of the NEMA Regulations Pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations (GNR 1147). The purpose is to identify a post mining land use that is feasible through the following:

- The requirements of the final rehabilitation, decommissioning and mine closure plan are stated in Appendix 17 of the NEMA Regulations Pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations (GNR 1147). The purpose is to identify a post mining land use that is feasible through the following:
- Providing the vision, objectives, targets and criteria for final rehabilitation, decommissioning and closure of the project;
- Outlining the design principles for closure
- Explaining the risk assessment approach and outcomes and link closure activities to risk rehabilitation;
- Detailing the closure actions that clearly indicate the measures that will be taken to mitigate and/or manage identified risks and describes the nature of residual risks that will need to be monitored and managed post closure;
- Committing to a schedule, budget, roles and responsibilities for final rehabilitation, decommissioning and closure of each relevant activity or item of infrastructure;
- Identifying knowledge gaps and how these will be addressed and filled;
- Detailing the full closure costs for the life of project at increasing levels of accuracy as the project develops and approaches closure in line with the final land use proposed; and
- Outlining, monitoring, auditing and reporting requirements.

Large volumes of soil need to be stripped and stockpiled for later use in mine site rehabilitation particularly from the stockyards, laydown and railway loop sites. The use of stripped stockpiled soil for rehabilitation purposes must include detailed post rehabilitation however pre-vegetation soil analysis as well as detailed liming and fertilizer recommendations based on the soil analytical results, as well as the type of vegetation to be established. The surrounding land uses are associated with cultivated and livestock farming, wetlands and waterbodies, farmhouses. These planned project activities that may be implemented within the applied land will change the land capability for the lifetime of mine, whereas land use is modified from wild to mining among the mine site. However, rehabilitation and mitigation will change the land capability at the best back to grazing enabling the land use to also change to grazing.

19.3 Period for which the environmental authorisation is required

Environmental authorisation will be required for the following periods:

- Construction = 2 years
- Operation = 15 years (including ramp up and ramp down)
- Closure = 2 years

19.4 Undertaking

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

The EAP undertakes that the information provided is correct, and that the comments and inputs from stakeholders and Interested and Affected parties are been recorded in the report. The undertaking of the EAP is included in the end of the EMPr in Part B, and is also an undertaking for Part A.

19.5 Financial provision

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

Applicant: Tornowize PTY (LTD)
Evaluator: Rofhiwa Nemutandani

CALCULATION OF THE QUANTUM

DMRE REF: 10383 MR

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0.151	19	1	1	2.869
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	0.05	49	1	1	2.45
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	26.918	284292	0.2	1	1530514.411
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	1.217	189528	1	1	230655.576
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	0.1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	29.523	150138	0.3	1	1329757.252
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0.58	57087	1	1	33110.46
14	2 to 3 years of maintenance and aftercare	ha	29.523	19980	1	1	589869.54
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
					Sub Total 1		3713912.558

1	Preliminary and General	445669.507	weighting factor 2 1	445669.507
2	Contingencies	371391.2558		371391.2558
			Subtotal 2	4530973.32
			VAT (15%)	679646.00
			Grand Total	5210619

Rofhiwa Nemutandani
26/06/2023

Singo Consulting (Pty) Ltd

Figure 70:Calculated financial provision.

Tornowize (Pty) Ltd is a black owned company from historical disadvantaged background. An amount of (R 5 210619.00) was calculated and will be paid within 6 months of production.

19.5.1 Confirm that this amount can be provided for from operating expenditure

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

There are already engagements with potential investors for the project to run and also for rehabilitation processes. It is upon the granting of the project that all investors will bring forth all necessary capitals.

19.6 Deviations from the approved scoping report and plan of study

19.6.1 Deviations from the methodology used in determining the significance of potential environmental impacts and risks

Provide a list of activities in respect of which the approved scoping report was deviated from, the reference in this report identifying where the deviation was made, and a brief description of the extent of the deviation.

Deviations from the scoping report include some specialist studies that were not undertaken but were indicated in the Scoping Report. Air quality and Noise studies were listed as part of specialist studies, however regarding the Tornowize Mine they were done as part of desktop studies, Waste classification, and Hydro-Pedology studies were excluded in the EIA phase because of the requirement of these studies in the WULA process. These studies are being undertaken as part of the WULA requirements.

19.6.2 Motivation for the deviation

The fact that this is an integrated EIA application, some of the studies will be catered under WULA and Waste to form an integrated Environmental authorisation. Deviations from the scoping report include some specialist studies that were not undertaken but were indicated in the Scoping Report. Air quality and Noise studies were listed as part of specialist studies, however regarding the Tornowize Mine they were done as part of desktop studies. Waste classification and Hydro-Pedology studies were excluded in the EIA phase because of the requirement of these studies in the WULA process. These studies are being undertaken as part of the WULA requirements.

20 OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

20.1 Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the NEMA

The EIA report must include the following:

20.1.1 Impact on the socio-economic conditions of any directly affected person

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

All impacts on socio-economic condition are assessed as part of the SLP and desktop EIA studies.

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

Provide the results of Investigation, assessment, and evaluation of the impact of mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of national estate contemplated in section 3

(2) (i) (vi) of the Act, attach the investigation report as Appendix 2.18.2 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6 and 2.12 herein.

The heritage assessment for the Tornowize Mine project is being undertaken. Mitigation measures will be recorded into the final EIAR.

21 OTHER REQUIREMENTS IN TERMS OF SECTIONS 24(4)(A)AND (B) OF THE ACT

The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 2292)(h), exist. The EAP must attach such motivation as an Appendix.

Mineral resources are by nature very difficult to locate as it requires extensive prospecting and calculated determination of stock. Minerals can only be mined where they exist. The proposed property is in an area where prospecting has indicated the presence of coal on this property. Alternatives were assessed in this report and impacts were assessed in the Impact Assessment tables (table 35)of this report.

PART B: ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1 ENVIRONMENTAL MANAGEMENT PROGRAMME

1.1 Details of the EAP

Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required.

The details and expertise of the EAP are detailed in Part A 3. (a) (i) and (ii) and a cv is attached.

1.2 Description of the aspects of the activity

Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required.

The details of the aspects of the activity are described above in Part A.

1.3 Composite map

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

Refer to Appendix 5 for the Tornowize Mine layout with all sensitivities and buffers identified.

1.4 Description of impact management objectives including management statements (i) Determination of closure objectives

Ensure that the closure objectives are informed by the type of environment described in 2.4 herein.

The closure objectives for mining internationally and in South Africa focuses on the restoration of previous land use capabilities, the zero-net loss of biodiversity, and the satisfaction of community requirements. Project closure objectives for Tornowize Mine will be in line with the above mentioned and is as follows:

- Re-establishment of the pre mining land use and land capability to a level as close as possible to the pre-mining environment
- Re-establishment of function to any biodiversity areas of concern that could and have been affected by the mining operations
- Prevent any form of contamination of soils, surface water and ground water.

- Implementation of on-going rehabilitation to regulated standards
- Implementation of sustainable community projects that will be self-driven after mine closure.
- Maintenance and Monitoring of rehabilitated areas.

1.4.1 The process for managing environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity

Pumping of water from the mine as a result of the mining activity will be undertaken. Water pumped from the mine will be stored in the wastewater dams within the infrastructure area where appropriate treatment will take place. All measures and appropriate standards for discharge will be included in the Water use license application requirements. The sewage treatment plant will be a modular plant with effluent release to the water course. Leakages or failure of function of such a plant can lead to ecological degradation.

1.4.2 Potential risk of acid mine drainage

Indicate whether the mining can result in acid mine drainage.

As it is a coal mine there is potential for AMD from pyrite coal being exposed to oxygen and water. The potential contaminants that may emanate from the mining activities are Ca, Mg, Cl and SO4. There may be a possibility of acid generation. Potential risk of acid mine drainage has been identified through the hydro-geology study and mitigations have been included on the report in appendix 12.

1.4.3 Steps taken to investigate, assess, and evaluate the impact of acid mine drainage

A model is being constructed to quantify potential impacts on receptors such as groundwater users and rivers as part of water balance report. This model will as an important step be undertaken once enough chemical information is available on the coal. Once this is available the applicant will undertake the necessary specialist inputs to address the problem.

1.4.4 Engineering or mine design solutions to avoid or remedy AMD

As part of the WULA requirements; it is recommended that to avoid AMD, water need to be tested and if needed, be pumped into the pollution control dam (PCD). From the PCD, it will be pumped to the water treatment plant for treatment. After confirmation that the water is on the correct standard, water will be re-used or made available to adjacent farmers. The WULA will have mitigation measures and conditions to be implemented. More information will be gathered as part of the WULA process for this purpose and will

include the waste classification and updated Geo-Hydrological study that will include geochemical sampling and analysis as well as constructing a geochemical model.

1.4.5 Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage

A model is being constructed to quantify potential impacts on receptors such as groundwater users and rivers as part of water balance report. This study is being compiled as part of the WULA requirements.

1.4.6 Volumes and rate of water use required for mining, trenching or bulk sampling

To be determined with the water use license application after additional studies and the water balance has been undertaken.

1.4.7 Has a water use license been applied for?

A water use licence application (WULA) has been submitted with Ref: WU28322. A WULA is underway parallel to the mining right application. Some of the WULA studies will be updated and compliance level will constantly be monitored even after the mining right has been granted.

2 FINANCIAL PROVISION

2.1 Determination of the amount of financial provision

Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under Regulation 22 (2) (d) as described in 2.4 herein.

The closure objectives for mining internationally and in South Africa focuses on the restoration of previous land use capabilities, the zero-net loss of biodiversity, and the satisfaction of community requirements.

Project closure objectives for Tornowize Mine will be in line with the above mentioned and is as follows:

- Re-establishment of the pre mining land use and land capability
- Re-establishment of function to any biodiversity areas of concern that could and have been affected by the mining operations
- Prevent any form of contamination of soils, surface water and ground water.
- Implementation of on-going rehabilitation to regulated standards
- Implementation of sustainable community projects that will be self-driven after mine closure.
- Maintenance and Monitoring of rehabilitated areas.

2.2 Confirm that environmental objectives in relation to closure have been discussed with landowner and I&APs

The environmental objectives are being made in line with the concerns raised by Interested and Affected parties. The stakeholder and public participation consultation is still on-going and transparent. The EIA report for public view included the Closure objectives, specialist study findings and financial provision for scrutiny. It has been discussed with the lawful lease agreement holders that the Surface mining activities (Box cut) that will take place in Leeuwfontein 48 IS, Potion 7 & 20 (Excluding portion 26) will only affect 98.600ha. Surface mining will be rehabilitated and once all procedures are done the land will be suitable for other natural activities to take place again.

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

A detailed Rehabilitation plan is attached as specialist studies on appendix 17.

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

The rehabilitation plan is designed to comply with the requirements of the closure objectives.

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

The Guideline Document for the Evaluation of the Quantum of Closure Related Financial Provision Provided by a Mine, Department of Minerals and Energy, 2005) was referred to. The revised version of 2019 quantum was used as per DMR guidelines. A calculated quantum is provided in figure 68.

2.6 Confirm that the financial provision will be provided as determined

Tornowize (Pty) Ltd is a black owned company from historical disadvantaged background. An amount of (R52 10619) was calculated and will be paid within 6 months of production. Financial provision is included in figure 68.

2.7 Mechanisms for monitoring

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

2.7.1 Monitoring of impact management actions

The mine will implement an ongoing monitoring programme for its proposed operations as recommended, ensuring environmental requirements stipulated in this EMPr are complied with. Various monitoring mechanisms have been suggested and included in specialist studies and revolves around Ground water, Air quality and Noise.

2.7.2 Monitoring and reporting frequency

Enclosed on table 39 section.

2.7.3 Responsible persons

An Environmental Control Officer will be responsible for ensuring that all necessary environmental monitoring required for the Tornowize Mine project is undertaken as per the monitoring programmes.

2.7.4 Time period for implementing management actions

Impact Management will be undertaken in each respective phase in which it would be applicable. In terms of monitoring, each management action will be implemented.

2.7.5 Mechanism for monitoring compliance

Monitoring programmes are enclosed in table 39 and will be implemented accordingly.

Table 31: Aspect Monitoring and Monitoring Plan

SURFACE MONITORING ASPECTS AND PLAN				
Monitoring Aspect	**Role**	**Responsibility**	**Time Frames**	**Reporting**
Dust Monitoring	Site Manager to ensure compliance with the guidelines as stipulated in the EMP Compliance to be monitored by the Environmental Control Officer	- Control the liberation of dust into surrounding environment by the use of inter alia, water spraying and / or other dust allaying agents - Limit speed on the access roads to 30 km/h to prevent the generation of excess dust. - Spray roads with water or an environmentally friendly dust allaying agent that contains no PCB's (e.g. DAS products) if dust is generated above acceptable limits.	Throughout Construction, Operational and Decommissioning Phase	• Daily compliance monitoring by site management Quarterly compliance monitoring of site by an Environmental Control Officer

		- Assess effectiveness of dust suppression equipment. - Re-vegetate all disturbed or exposed areas as soon as possible to prevent any dust source from being created. - Thoroughly soak all stockpiles to ensure dust suppression on the site.		
Noise Monitoring	Site Manager to ensure compliance with the guidelines as stipulated in the EMP. Compliance to be monitored by the Environmental Control Officer	- Ensure that employees and staff conduct themselves in an acceptable manner while on site. - Ensure that all mining vehicles are equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.	Throughout Construction, Operational and Decommissioning Phase	- Daily compliance monitoring by site management - Quarterly compliance monitoring of site by an Environmental Control Officer
Management of weed/invader plants	Site Manager to ensure compliance with the guidelines as stipulated in the EMP.	- Implement a weed and invader plant control management plan.	Throughout Construction, Operational and Decommissioning Phase	- Daily compliance monitoring by site management

	Compliance to be monitored by the Environmental Control Officer	- Control declared invader or exotic species on the rehabilitated areas. - Keep the temporary topsoil stockpiles free of weeds		- Quarterly compliance monitoring of site by an Environmental Control Officer
Storm water Monitoring	Site Manager to ensure compliance with the guidelines as stipulated in the EMP. Compliance to be monitored by the Environmental Control Officer	- Divert storm water around the topsoil heaps, stockpile areas and access roads to prevent erosion and loss of material - Divert runoff water around the stockpile areas with trenches and contour structures to prevent erosion of the work areas. - Conduct mining in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management, developed by the Department of	Throughout Construction, Operational and Decommissioning Phase	- Daily compliance monitoring by site management - Quarterly compliance monitoring of site by an Environmental Control Officer

		Water Affairs, and any other conditions which that department may impose.		
Management of health and safety risks	Site Manager to ensure compliance with the guidelines as stipulated in the EMP. Compliance to be monitored by the Environmental Control Officer	- Ensure that workers have access to the correct PPE as required by law. - All operations to adhere to the Occupational Health and Safety Act	Throughout Construction, Operational and Decommissioning Phase	- Daily compliance monitoring by site management - Quarterly compliance monitoring of site by an Environmental Control Officer
Waste management	Site Manager to ensure compliance with the guidelines as stipulated in the EMP. Compliance to be monitored by the Environmental Control Officer	- Ensure that vehicle repairs only take place at the off-site - Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility	Throughout Construction, Operational and Decommissioning Phase	- Daily compliance monitoring by site management - Quarterly compliance monitoring of site by an Environmental Control Officer

		- Clean spills immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognized facility - Always ensure the availability of suitable covered receptacles and conveniently placed for the disposal of waste - Store non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., in a container with a closable lid at a collecting point. Collection should take place on a regular basis and disposed of at the recognized landfill site Ermelo. Prevent refuse from being dumped on or in		

		the vicinity of the mine area. - Biodegradable refuse to be handled as indicated above.		
Management of access roads	Site Manager to ensure compliance with the guidelines as stipulated in the EMP. Compliance to be monitored by the Environmental Control Officer	- Maintain newly constructed access roads to minimize dust, erosion or undue surface damage. - Divert storm water around the access roads to prevent erosion. - Erosion of access road: Restrict vehicular movement to existing access routes to prevent crisscrossing of tracks through undisturbed areas	Throughout Construction, Operational and Decommissioning Phase	- Daily compliance monitoring by site management - Quarterly compliance monitoring of site by an Environmental Control Officer
Topsoil Monitoring	Site Manager to ensure compliance with the guidelines as stipulated in the EMP.	- Remove the first 300mm of topsoil in strips and store at the stockpile area. - Keep the temporary topsoil stockpiles free of weeds. - Place topsoil stockpiles on a levelled area and	Throughout Construction, Operational and Decommissioning Phase	- Daily compliance monitoring by site management - Quarterly compliance monitoring of site by an Environmental Control Officer

	Compliance to be monitored by the Environmental Control Officer	implement measures to safeguard the piles from being washed away in the event of heavy rains/storm water. - Topsoil heaps should not exceed 2m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. - Divert storm and runoff water around the stockpile area and access roads to prevent erosion.		
Surface Water Monitoring	Site Manager to ensure compliance with the guidelines as stipulated in the EMP. Compliance to be monitored by the Environmental Control Officer	- Conduct quarterly water analysis when water is present in the stream bordering the site.	Throughout Construction, Operational and Decommissioning Phase	- Daily compliance monitoring by site management - Quarterly compliance monitoring of site by an Environmental Control Officer

3 FREQUENCY OF THE PERFORMANCE ASSESSMENT REPORT SUBMISSION

The EMPr performance assessment (audit) must be undertaken every year by an external auditor, and a report must be compiled and submitted to the competent authority every two years. Operational internal environmental inspections will need to be done once a month by the mine's Environmental personnel. A yearly internal audit needs to be undertaken by the mines environmental department.

4 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.

4.1 Employee communication

It is recommended that the contractor will inform employees of any environmental risks which may result from their work by compiling a risk assessment and discussing this at regular training sessions (including basic environmental awareness training at induction).

4.2 Environmental awareness plan as a solution to risks

It is recommended that an Environmental Awareness Plan is to be compile that describes how potential environmental pollution and degradation can be avoided by dealing with potential environmental risk. This Environmental Awareness Plan will be provided on site and discussed with the employees at regular training sessions (including basic environmental awareness training at induction). The awareness content can be based on the topics on the illustration below and other topics can be formulated through the conditions written on the EA and also by using the approved EMPr.

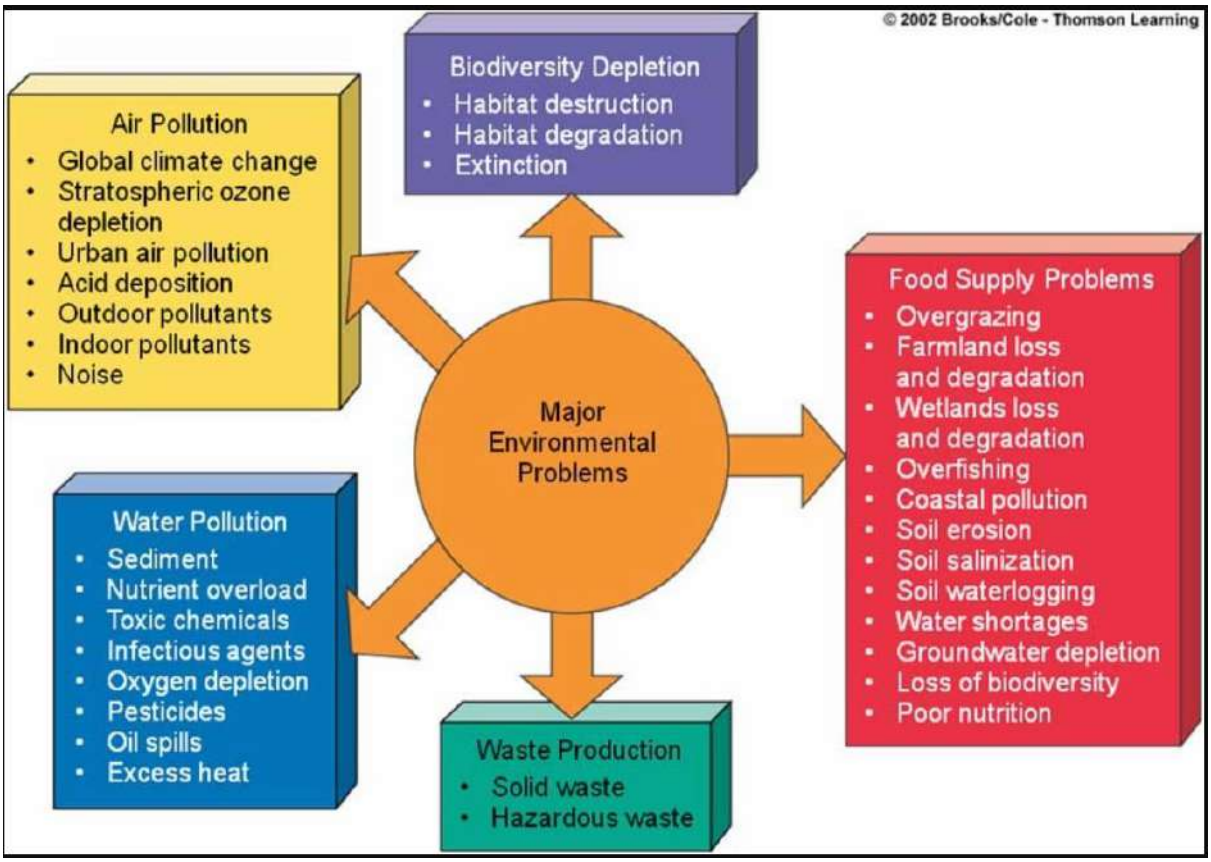


Figure 71: Environmental Awareness Content (http://4.bp.blogspot.com/-3TXKtX8HzT4/Uvjkm6Cap_I/AAAAAAAABCM/9oPu5TdTOxI/s1600/Untitled-3.jpg)

4.3 Environmental awareness training

The Environmental Control Officer (ECO) shall be responsible for compiling and Environmental Awareness Training Programme for all staff members that aims at explaining the mitigation measures described in this report. Before commencing with any work, all staff members shall attend the Environmental Awareness Training Programme. After attending the programme, all contractors and subcontractors shall sign an Environmental Training register as proof of their training; which shall be kept as proof for auditing purposes.

The environmental training should, as a minimum, include (but not be limited to) the following:

- The importance of conformance with all environmental policies;
- The environmental impacts, actual or potential, of the proposed activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with this EMP, including associated procedures and emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures; and

- The mitigation measures required to be implemented when carrying out their work activities
- SHE induction and awareness training;
- An Environmental Management Systems (EMS) coordinator has been appointed;
- General Awareness Training.

4.4 Manner in which risks will be dealt with to avoid pollution or environmental degradation

The environmental management programme and associated management options are intended to minimise environmental risk as far as possible. Should, however, circumstances lead to unacceptable risks, emergency systems and procedures have been designed and will be implemented in the case of an emergency to prevent or minimise the consequential environmental damage. The environmental emergency contingency plan addresses any reasonably anticipated failure (most probable risk) for the entire mining area and focuses on incidents that could cause environmental emergencies. The most crucial aspect of the emergency system is the identification and communication of the emergency to the appropriate persons. Consequently, the names of the appropriate contact person together with their contact numbers would be prominently displayed around the facility. The contact details will be updated on a regular basis.

4.5 Specific information required by the competent authority.

Financial provision has been compiled for Tornowize Mine Project. This provision will be reviewed annually for adequacy and amended to compensate for new activities and/or inflation

4.6 Undertaking

The EAP herewith confirms:

- the correctness of the information provided in the reports
- the inclusion of comments and inputs from stakeholders and I&APs
- the inclusion of inputs and recommendations from the specialist reports where relevant
- the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed

-END-

4.7 EAP DECLARATION

EAP DECLARATION

I, …… declare that:

General declaration:

• I act as the independent EAP in this application.

• I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.

• I declare that there are no circumstances that may compromise my objectivity in performing such work.

• I have expertise in conducting Environmental Impact Assessments ("EIAs"), including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity.

• I will comply with the Act, Regulations and all other applicable legislation.

• I will take into account, as far as possible, the matters listed in Regulation 8 of the Regulations when preparing the application and any report relating thereto.

• I have no, and will not engage in, conflicting interests in the undertaking of the activity.

• I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority.

• I will ensure that information containing all relevant facts in respect of the application is distributed or made available to I&APs and the public and that participation by I&APs is facilitated in such a manner that all I&APs will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the

application

- I will ensure that the comments of all I&APs are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments made by I&APs in respect of a final report may be attached to the report without further amendment to the report.

• I will keep a register of all I&APs that participated in a PPP.

• I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.

• All the particulars furnished by me in this form are true and correct.

• I will perform all other obligations as expected from an EAP in terms of the Regulations.

• I realise that a false declaration is an offence in terms of Regulation 71 of the Regulations and is punishable in terms of section 24F of the Act.

Disclosure of vested interest (delete whichever is not applicable)

• I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity other than remuneration for work performed in terms of the Regulations.

• I do not have any vested interest in the proposed activity other than remuneration for work performed in terms of the NEMA regulations.

Signature of the EAP

Date: August 2023

APPENDICES

Appendix 2: Qualifications of the EAP

LaRSSA

LAND REHABILITATION SOCIETY
OF SOUTHERN AFRICA

LAND REHABILITATION SOCIETY OF SOUTHERN AFRICA

hereby certifies that

Mr Ndinannyi Kenneth Singo

is a fully paid-up member of the Society having all the rights and privileges of a

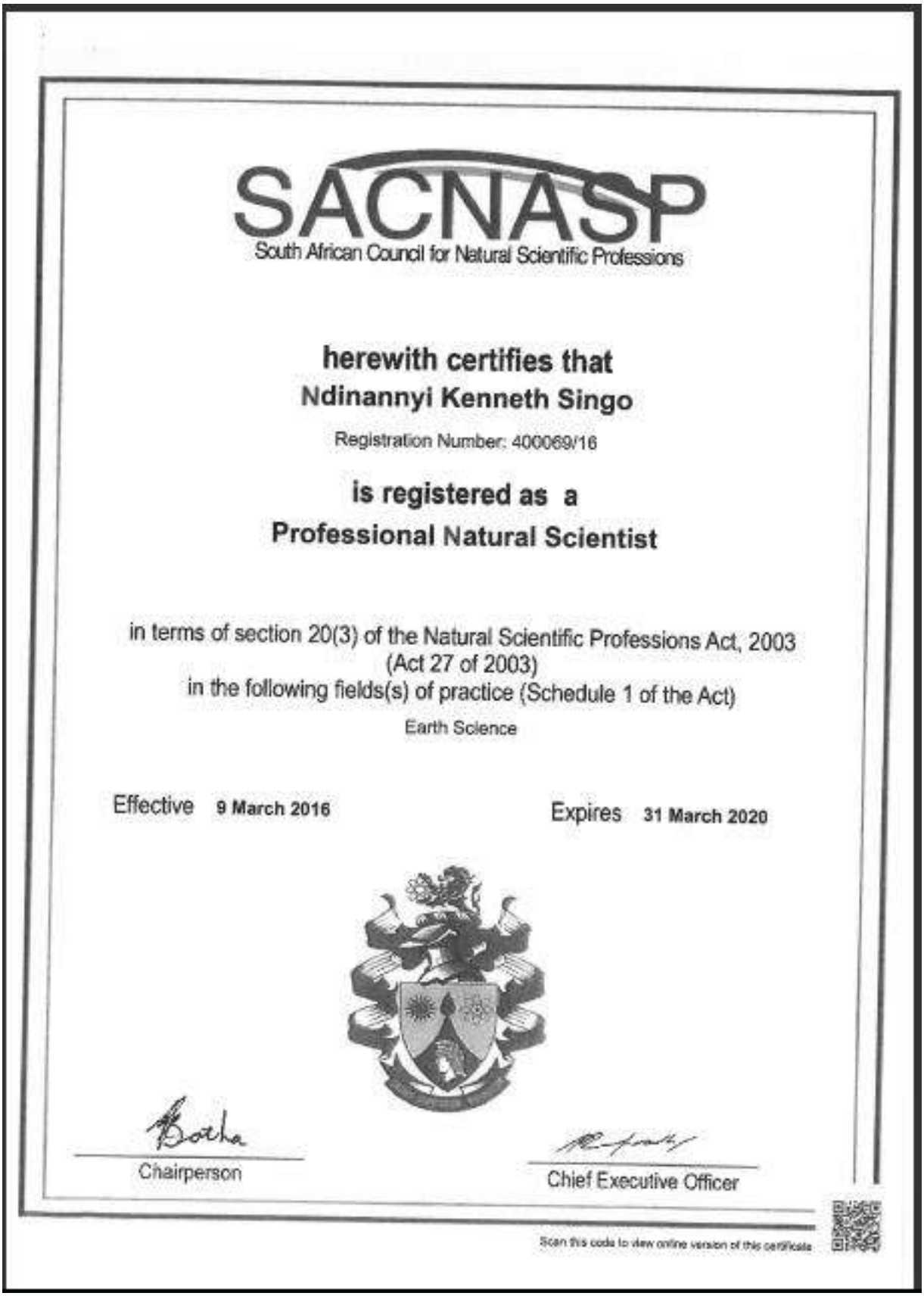
Associate Member

Membership ID:

On behalf of the Executive Council

President of the Society
Date Joined: 10 June 2015

Vice President of the Society
Expiry date: 26 February 2020



SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Ndinannyi Kenneth Singo

Registration Number: 400069/16

is registered as a

Professional Natural Scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following fields(s) of practice (Schedule 1 of the Act)

Earth Science

Effective **9 March 2016** Expires **31 March 2020**

Chairperson

Chief Executive Officer

Scan this code to view online version of this certificate

UNISA
UNIVERSITY OF SOUTH AFRICA

We certify that

NDINANNYI KENNETH SINGO

having complied with the requirements of the Higher Education Act and the Institutional Statute, was admitted to the degree of

MASTER OF SCIENCE

in Environmental Management

at a congregation of the University on 14 October 2013

06/03/19

Vice-Chancellor

Executive Dean

University Registrar

University of Venda

This is to Certify that the Degree of

Bachelor of Earth Sciences in Mining and Environmental Geology

was Awarded to

SINGO NDINANNYI KENNETH

at a Ceremony held on the

07-MAY-2009

in Accordance with the Provisions of the Act and Statute

06/03/19

Vice Chancellor

University Registrar

Dean

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Ndinannyi Kenneth Singo

Registration number: 400069/16

is registered as a

Professional Natural Scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule I of the Act)

Earth Science

09 March 2016

06/03/19

09 March 2016

Pretoria

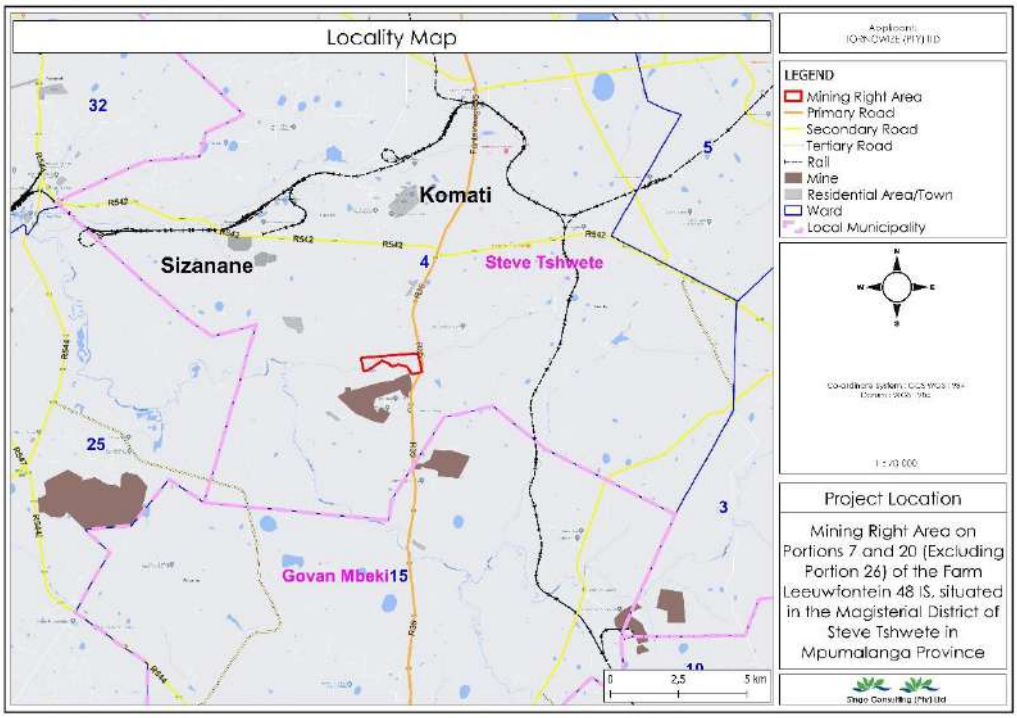
President

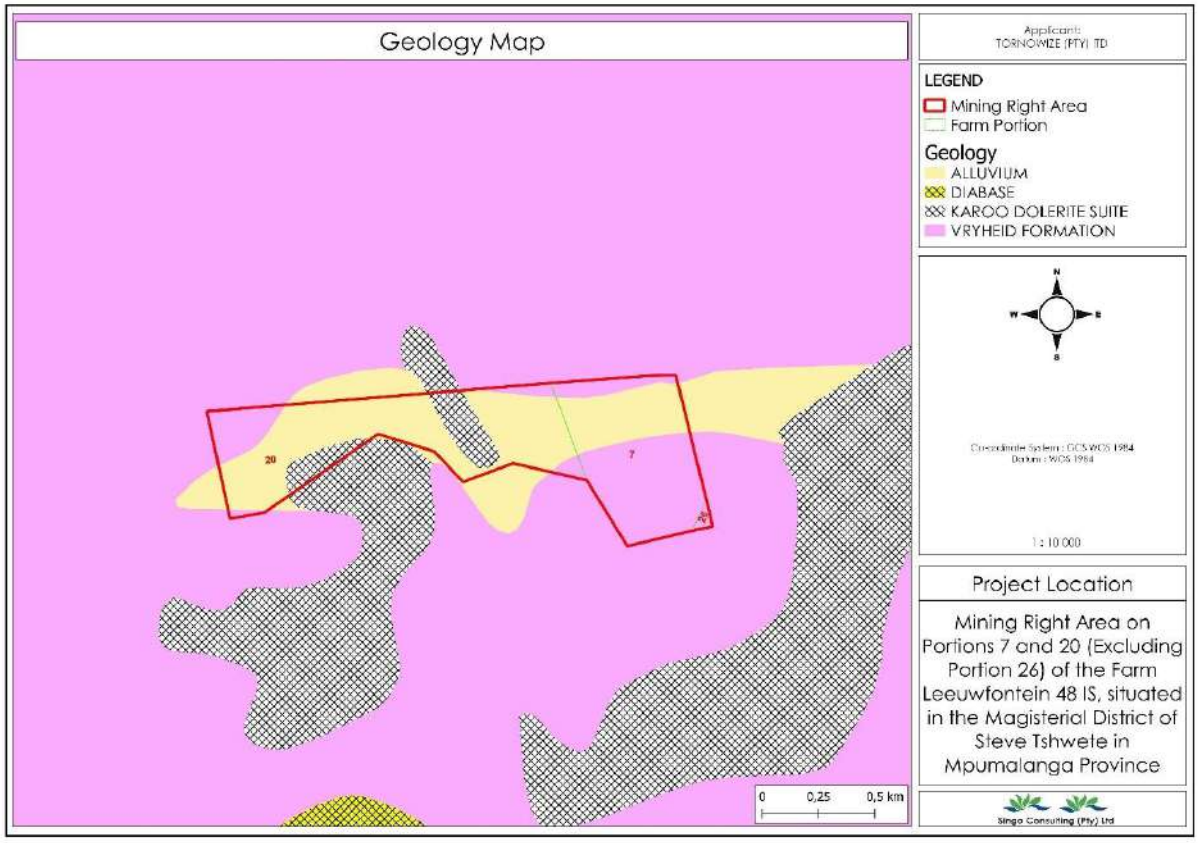
Executive Director

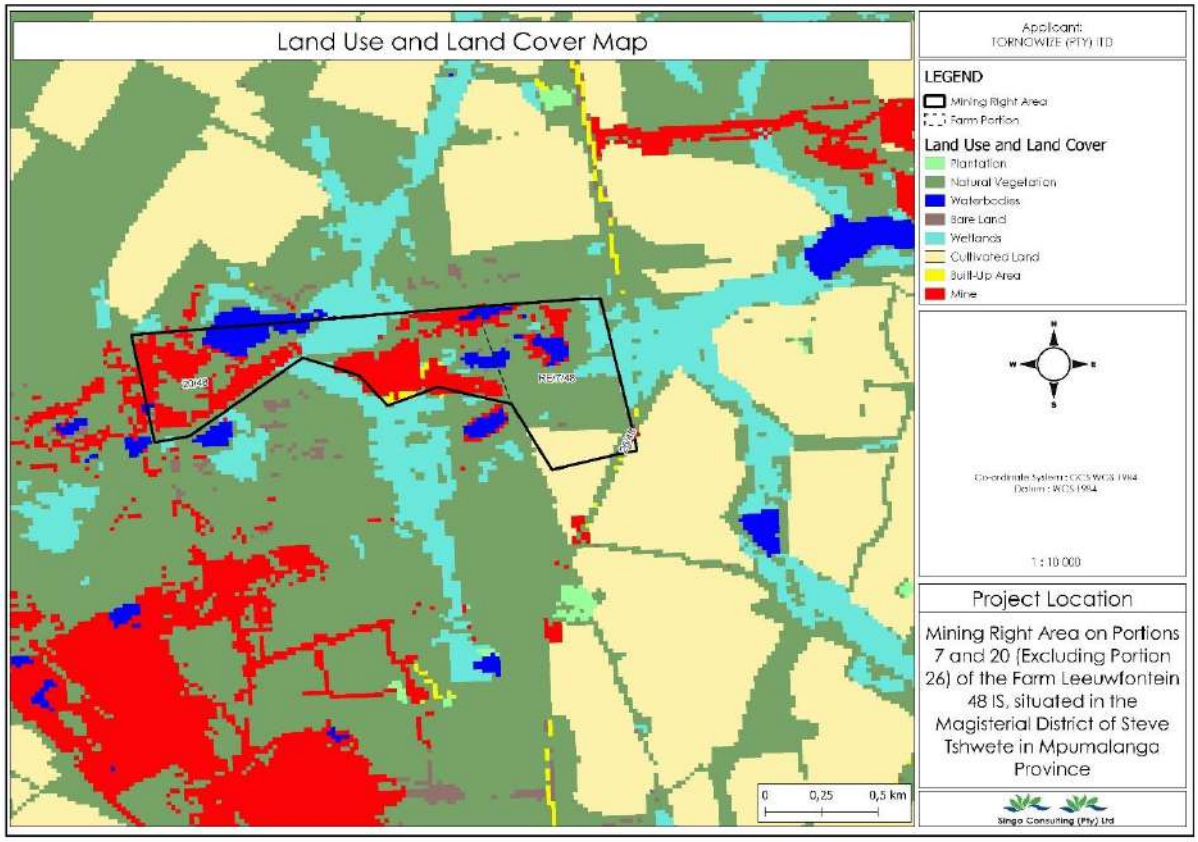
Appendix 3: Curriculum Vitae of the EAP

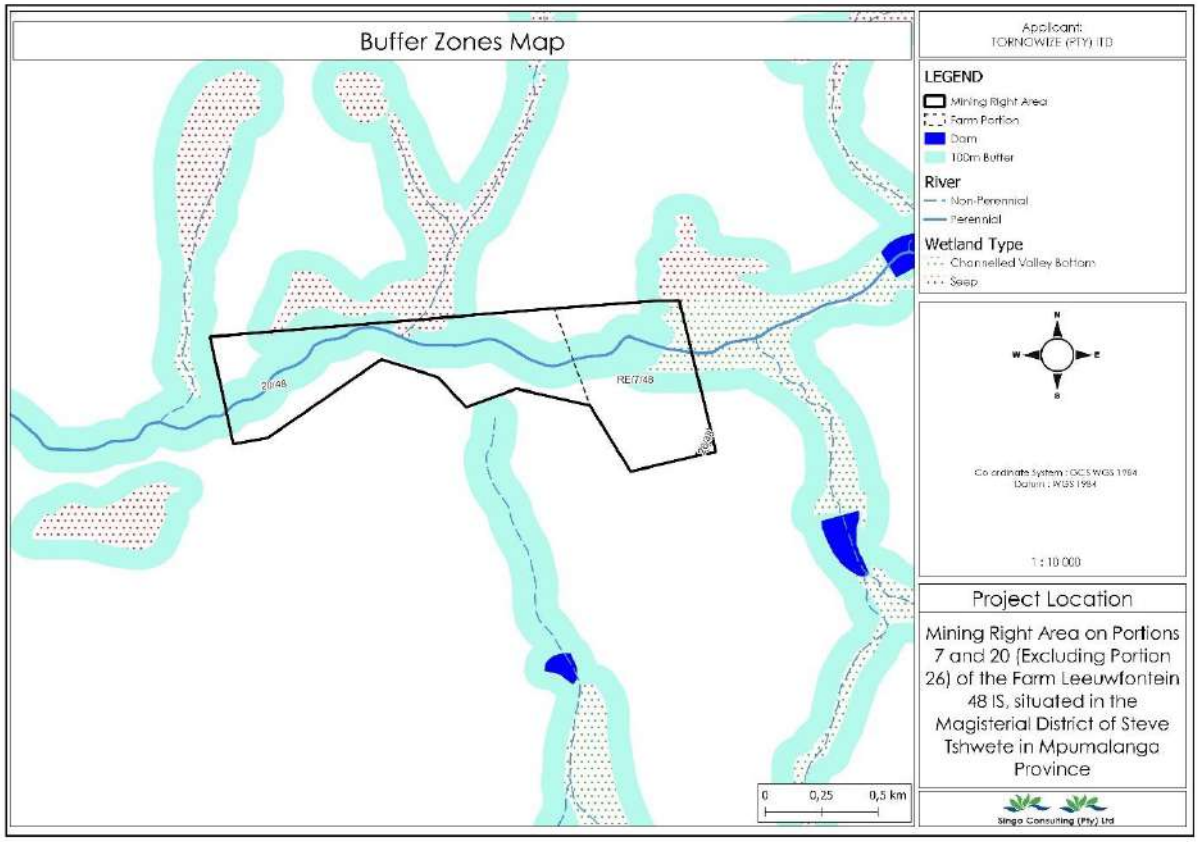
AVAILABLE UPON REQUEST

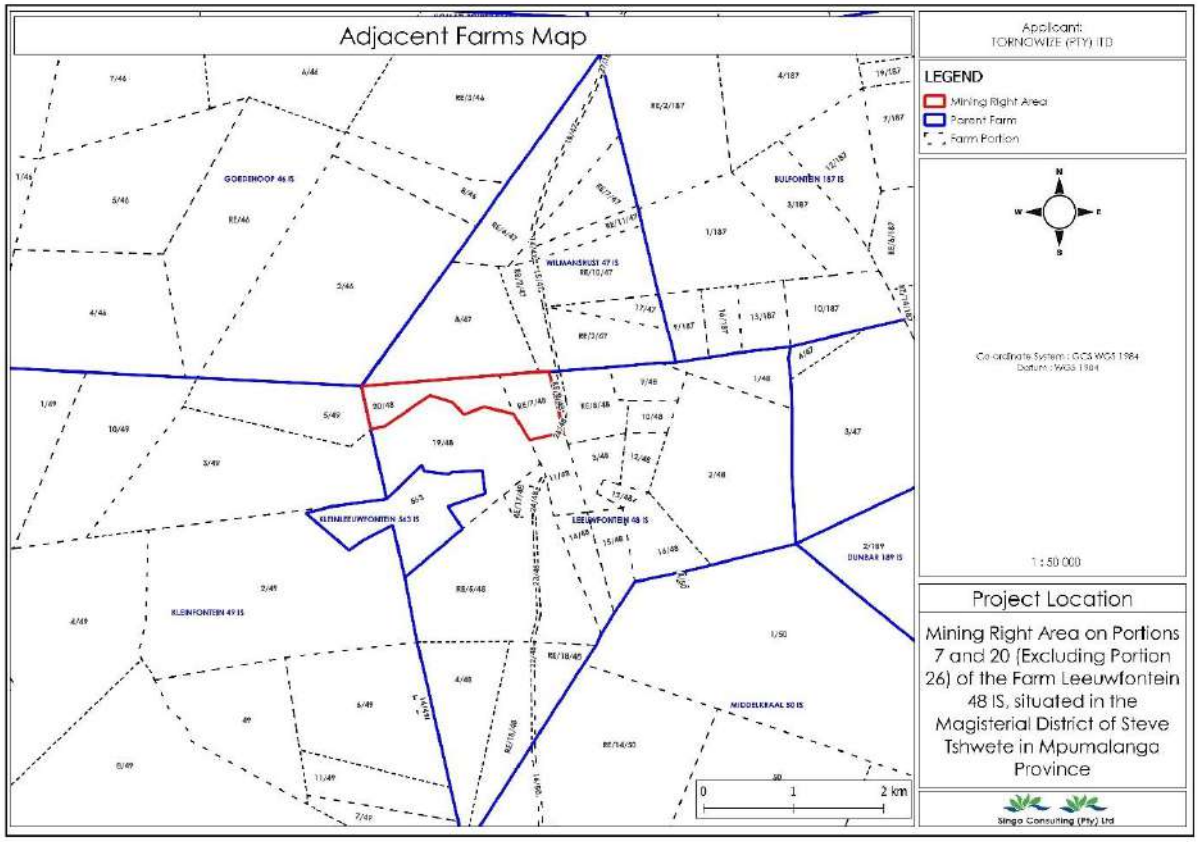
Appendix 4: Project Maps

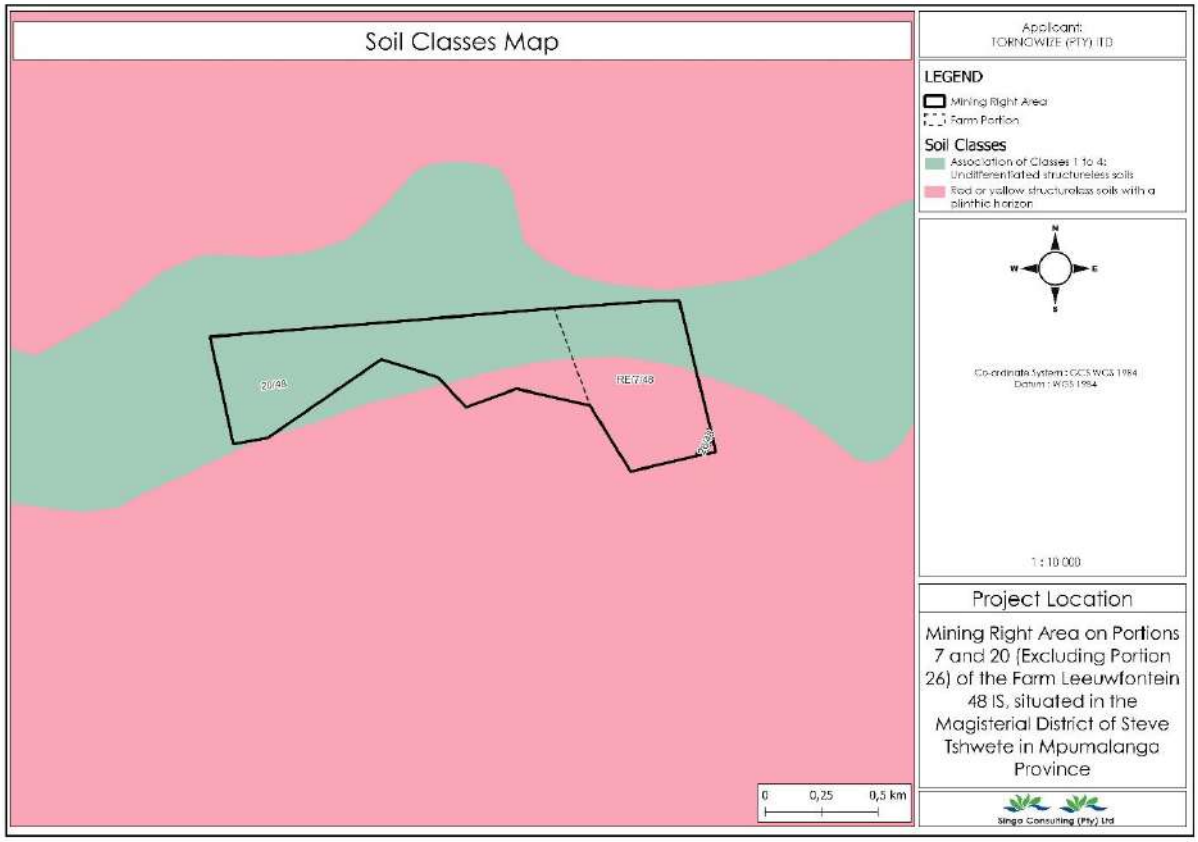


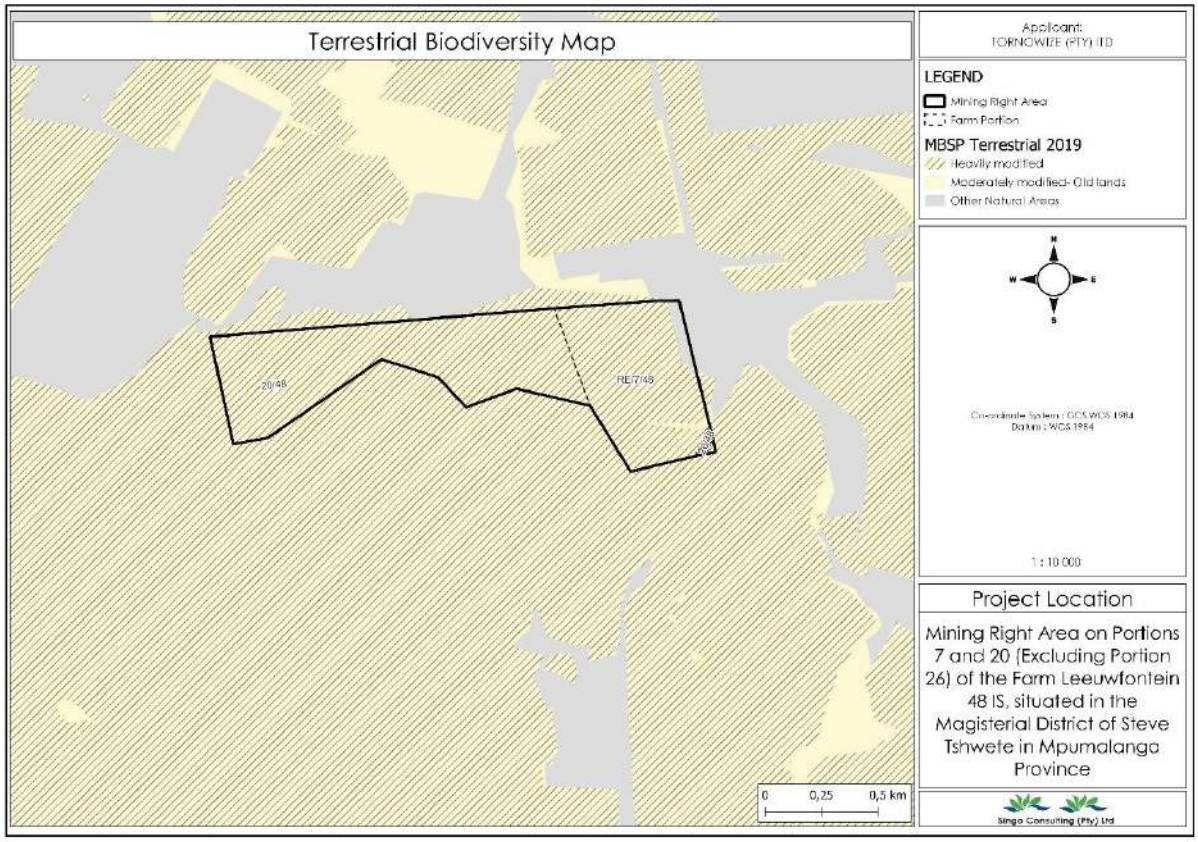

Geology Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Geology
ALLUVIUM
DIABASE
KAROO DOLERITE SUITE
VRYHEID FORMATION
20
7
0
0,25
0,5 km
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
Singo Consulting (Pty) Ltd

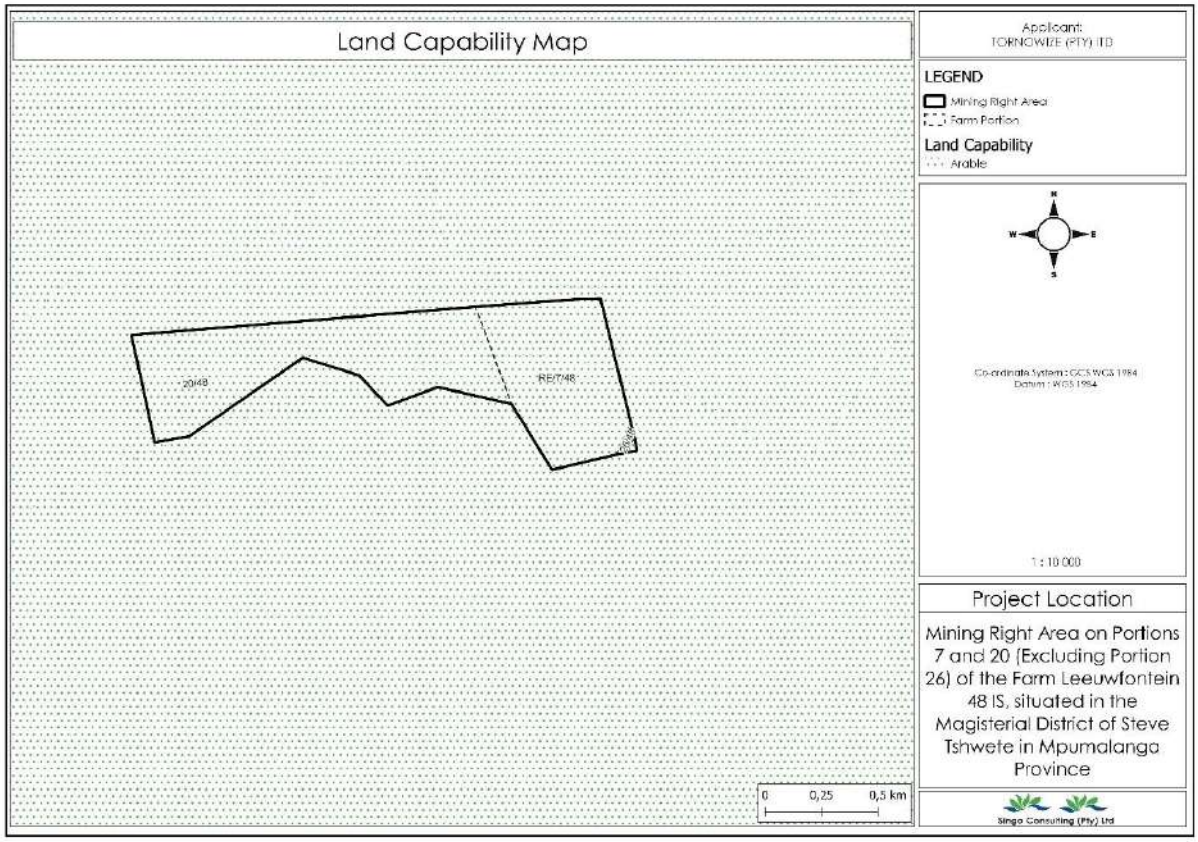

Land Use and Land Cover Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Land Use and Land Cover
Plantation
Natural Vegetation
Waterbodies
Bare Land
Wetlands
Cultivated Land
Built-Up Area
Mine
0
0,25
0,5 km
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
Singo Consulting (Pty) Ltd

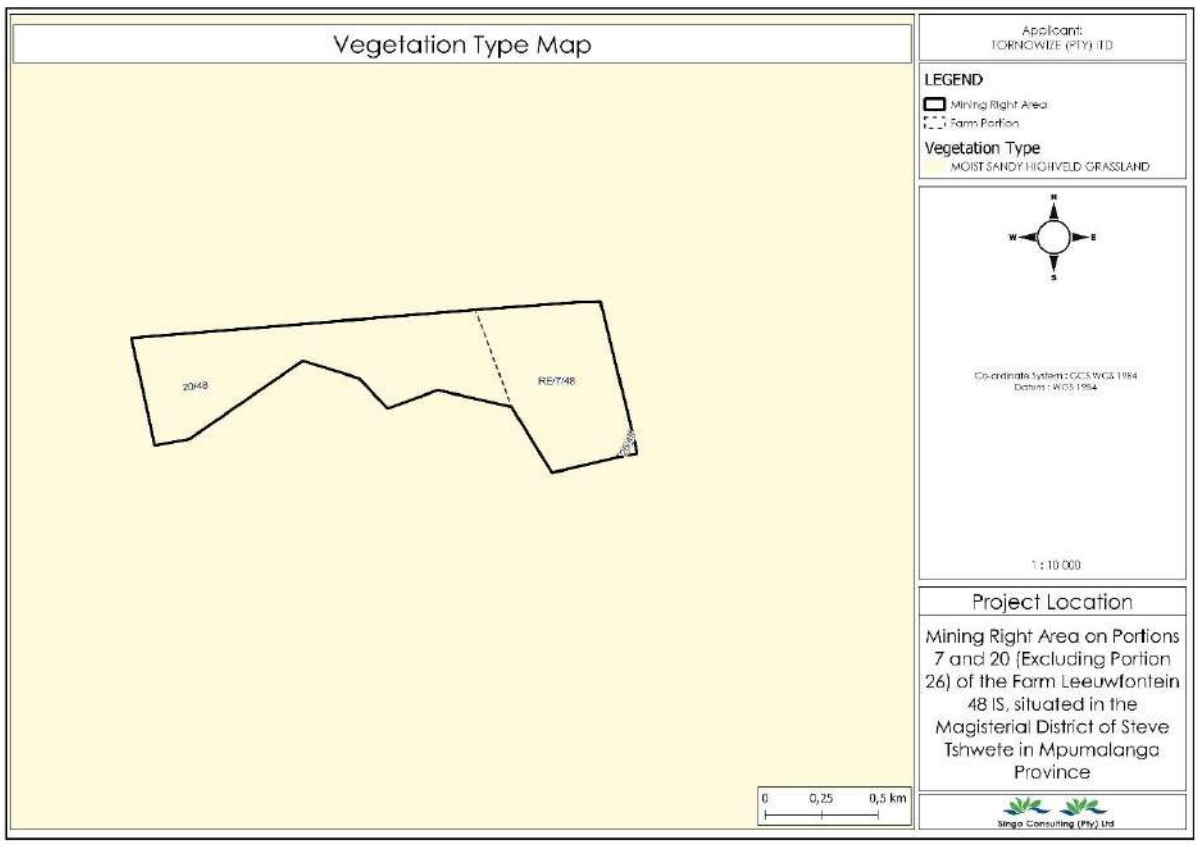

Buffer Zones Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Dam
100m Buffer
River
Non-Perennial
Perennial
Wetland Type
Channelled Valley Bottom
Seep
20/48
RE/7/48
Co-ordinate System : GCS WGS 1984
Datum : WGS 1984
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
0 0,25 0,5 km
Singo Consulting (Pty) Ltd

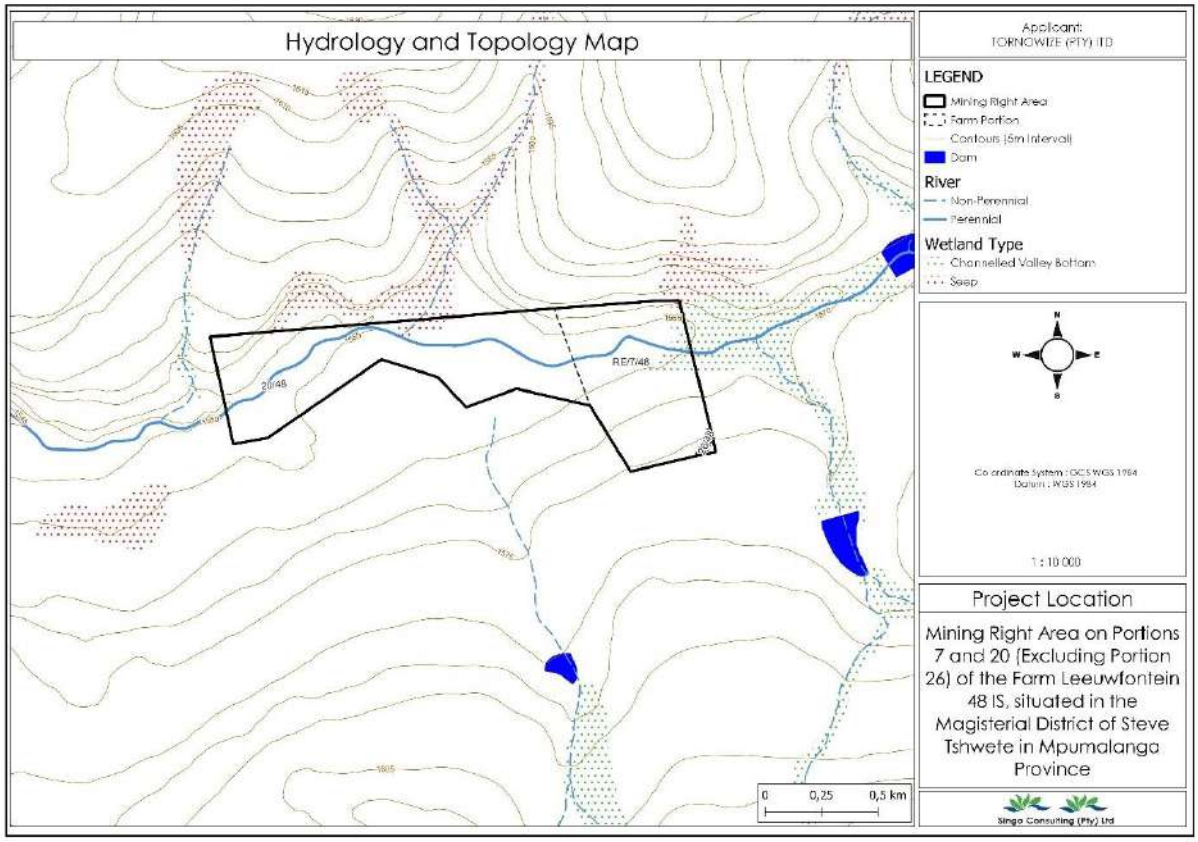

Adjacent Farms Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Parent Farm
Farm Portion
GOEDEHOOP 46 IS
WILMANSRUST 47 IS
BULFONTEIN 187 IS
KLEINLEEUWFONTEIN 345 IS
LEEUWFONTEIN 48 IS
DUNBAR 189 IS
KLEINFONTEIN 49 IS
MIDDELKRAAL 50 IS
20/48
Co-ordinate System : GCS WGS 1984
Datum : WGS 1984
1 : 50 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
0 1 2 km
Singo Consulting (Pty) Ltd

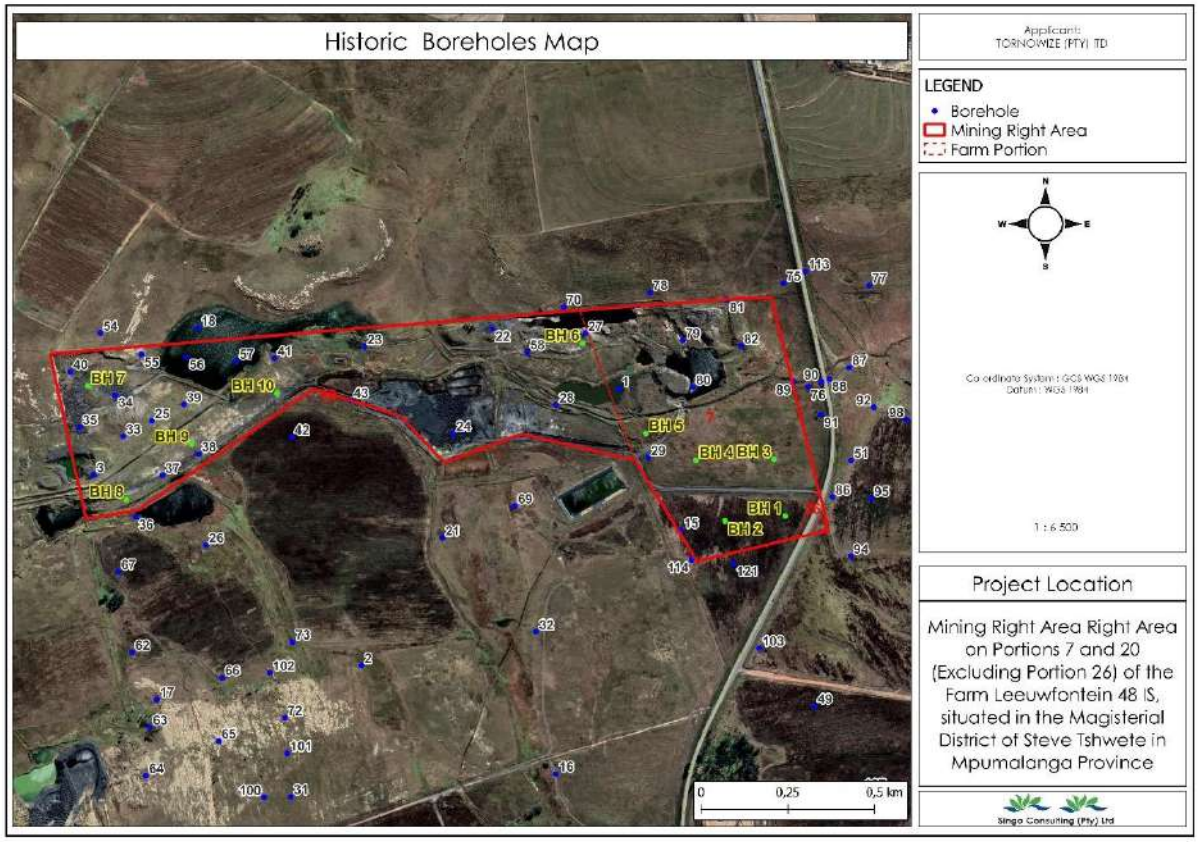

Soil Classes Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Soil Classes
Association of Classes 1 to 4: Undifferentiated structureless soils
Red or yellow structureless soils with a plinthic horizon
N
W
E
S
Co-ordinate System: GCS WGS 1984
Datum : WGS 1984
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
20/48
RE/7/48
0
0,25
0,5 km
Singo Consulting (Pty) Ltd

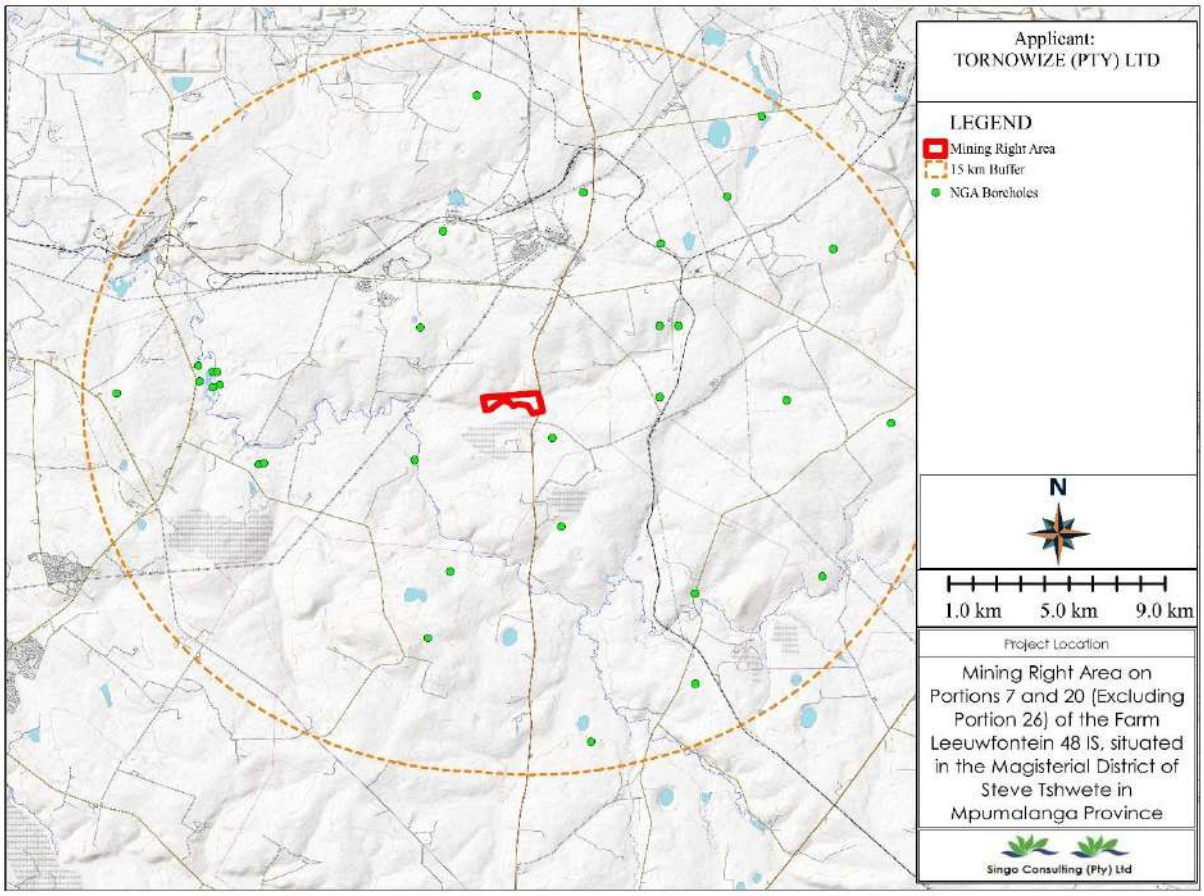

Terrestrial Biodiversity Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
MBSP Terrestrial 2019
Heavily modified
Moderately modified- Old lands
Other Natural Areas
N
W
E
S
Co-ordinate System : GCS WGS 1984
Datum : WGS 1984
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
20/48
RE/7/48
0
0,25
0,5 km
Singo Consulting (Pty) Ltd

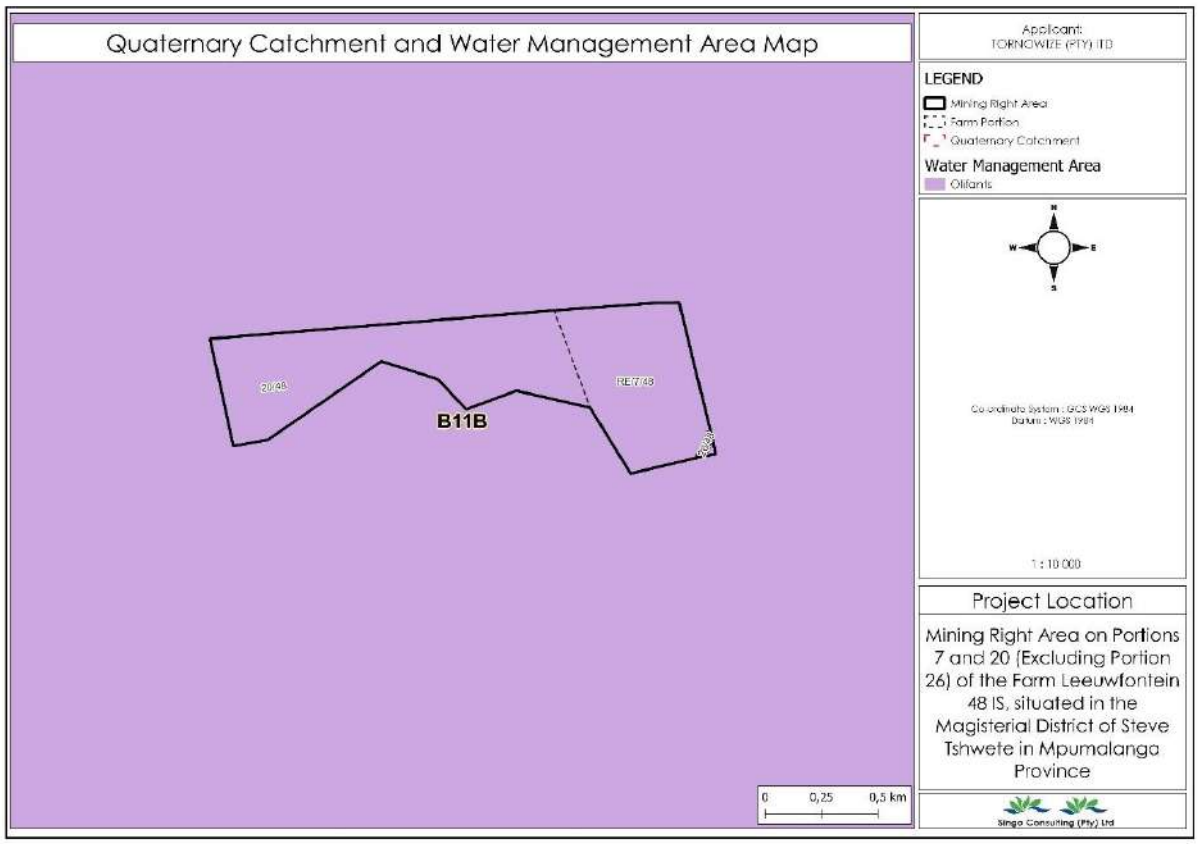

Land Capability Map
20/48
RE/7/48
0
0,25
0,5 km
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Land Capability
Arable
N
W
E
S
Co-ordinate System: GCS WGS 1984
Datum : WGS 1984
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
Singo Consulting (Pty) Ltd

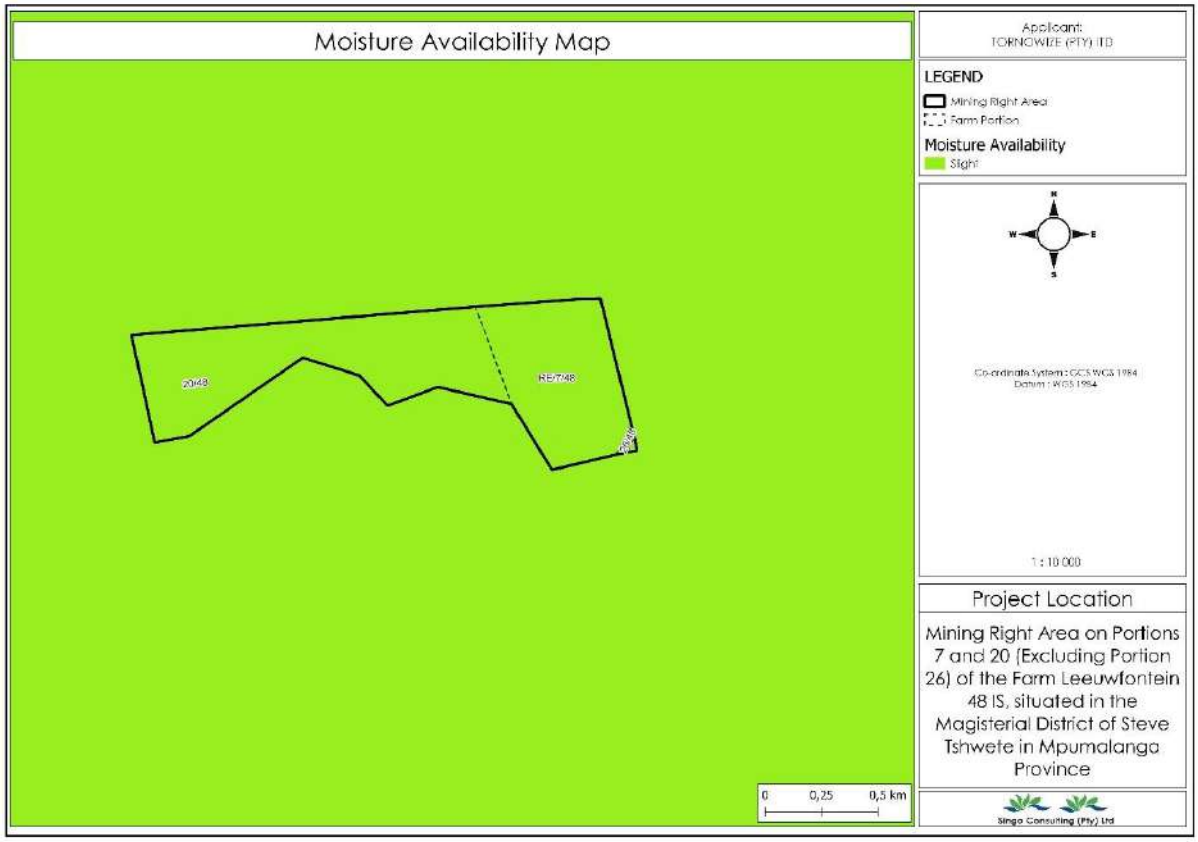

Vegetation Type Map
20/48
RE/7/48
0
0,25
0,5 km
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Vegetation Type
MOIST SANDY HIGHVELD GRASSLAND
N
W
E
S
Co-ordinate System: GCS WGS 1984
Datum : WGS 1984
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
Singo Consulting (Pty) Ltd

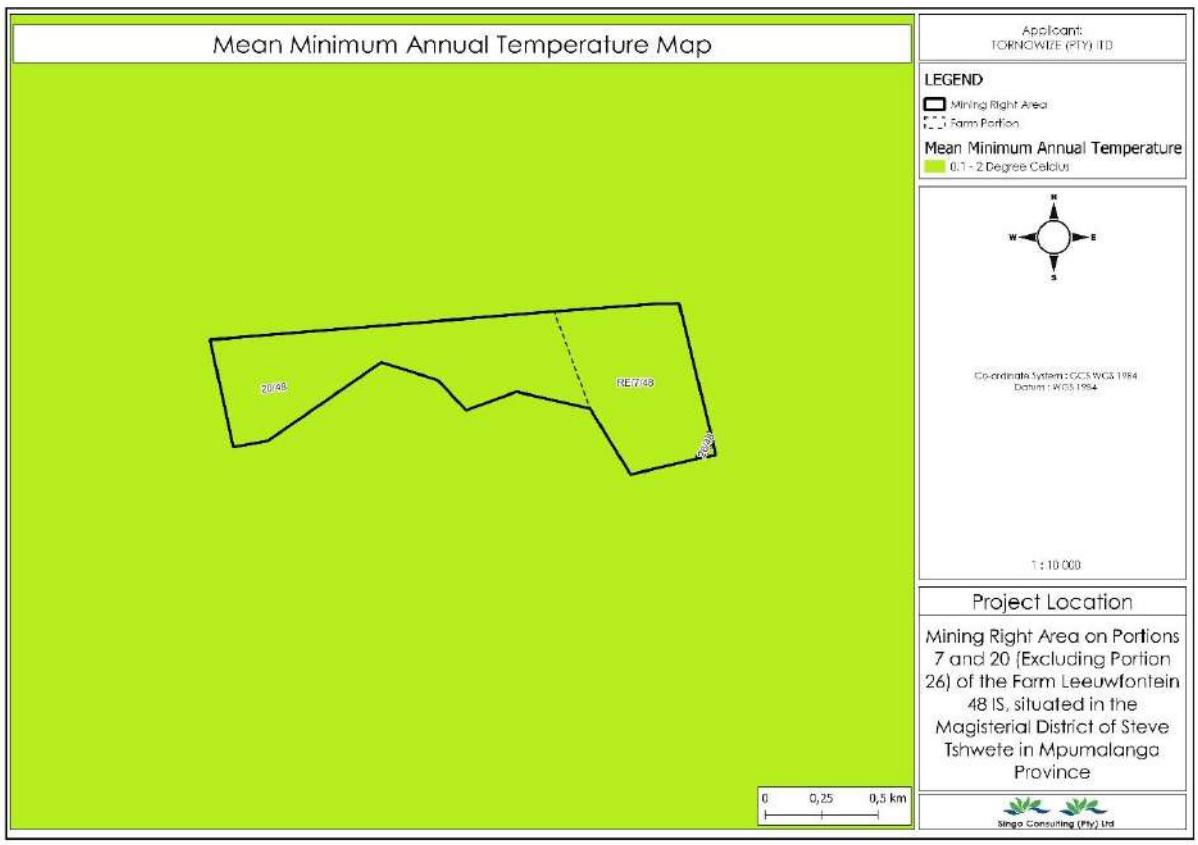

Hydrology and Topology Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Contours (5m Interval)
Dam
River
Non-Perennial
Perennial
Wetland Type
Channelled Valley Bottom
Seep
RE/7/48
20/48
N
W
E
S
Co-ordinate System : GCS WGS 1984
Datum : WGS 1984
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
0
0,25
0,5 km
Singo Consulting (Pty) Ltd


Historic Boreholes Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Borehole
Mining Right Area
Farm Portion
BH 1
BH 2
BH 3
BH 4
BH 5
BH 6
BH 7
BH 8
BH 9
BH 10
N
W
E
S
Co-ordinate System : GCS WGS 1984
Datum : WGS 1984
1 : 6 500
Project Location
Mining Right Area Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
0
0,25
0,5 km
Singo Consulting (Pty) Ltd

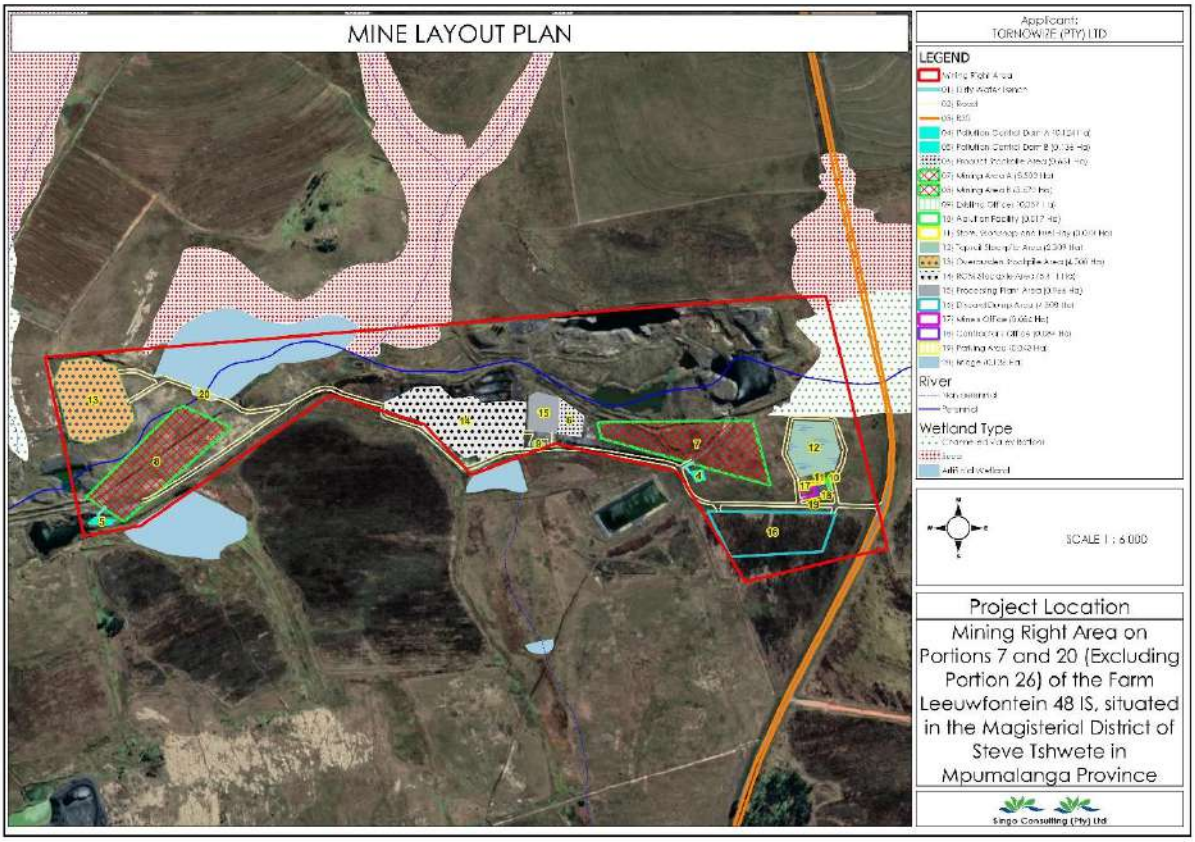

Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
15 km Buffer
NGA Boreholes
N
1.0 km
5.0 km
9.0 km
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
Singo Consulting (Pty) Ltd


Quaternary Catchment and Water Management Area Map
B11B
RE/7/48
0
0,25
0,5 km
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Quaternary Catchment
Water Management Area
Olifants
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
Singo Consulting (Pty) Ltd


Moisture Availability Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Moisture Availability
Slight
N
W
E
S
Co-ordinate System: GCS WGS 1984
Datum : WGS 1984
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
20/48
RE/7/48
0
0,25
0,5 km
Singo Consulting (Pty) Ltd


Mean Minimum Annual Temperature Map
Applicant:
TORNOWIZE (PTY) LTD
LEGEND
Mining Right Area
Farm Portion
Mean Minimum Annual Temperature
0.1 - 2 Degree Celcius
N
W
E
S
Co-ordinate System: GCS WGS 1984
Datum : WGS 1984
1 : 10 000
Project Location
Mining Right Area on Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS, situated in the Magisterial District of Steve Tshwete in Mpumalanga Province
20/48
RE/7/48
0
0,25
0,5 km
Singo Consulting (Pty) Ltd

Appendix 5: Min layout map - Final site map



Appendix 6:Public Participation Process

- Newspaper advert
- Site notice
- Background information document (BID)
- Communication/meetings with stakeholders (minutes)
- Register of I&APs

Appendix 7: Newspaper advert

2 | Middelburg Observer

Friday 18 August 2023

NOTICE OF AVAILABILITY OF ENVIRONMENTAL IMPACT ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT (EIA & EMPR) FOR COAL MINING RIGHT, ENVIRONMENTAL AUTHORISATION (INTEGRATED EIA & EMPR), WATER USE LICENCE AND WASTE MANAGEMENT APPLICATIONS ON PORTIONS 7 & 20 (EXCLUDING PORTION 26) OF THE FARM LEEUWFONTEIN 48 IS, SITUATED WITHIN STEVE TSHWETE DISTRICT MUNICIPALITY, MPUMALANGA PROVINCE (DMRE REF.: MP 30/5/1/2/2/10383 MR).

Notice is given in terms of the National Environmental Management Act (Act 107 of 1998) (as amended), the Minerals and Petroleum Resources Act (Act No. 28 of 2002) (as amended) , Waste Management Licence (WML) for waste management activities in terms of section 45 of the National Environmental Management Waste Act 2008 (Act 107 of 1998)(NEMA) and the National Water Act (Act No. 36 of 1998), of an Integrated Environmental Impact Assessment process to be followed for a Mining Right and a Waste Management Licence application to the Department of Mineral Resources and Energy, and an Integrated Water Use Licence application to the Department of Water and Sanitation (WU28322) on portions 7 & 20 (excluding portion 26) of the farm Leeuwfontein 48 IS, situated in the Local Municipality of Steve Tshwete, within the Middelburg Magisterial District, Mpumalanga Province.

Project Description: Tornowize (Pty) Ltd intends to carry out an Environmental Authorisation process (Full Environmental Impact assessment, Waste Management Licence, and a Water Use Licence (WUL) for coal mining). The mining methodology to be utilised will be an open cast method. The Scoping Report of this application was accepted on the 16th May 2023. The full EIA phase of this project is underway as well as the Water Use Licence Application (WULA) under the provisions of the National Water Act No. 36 of 1998 (NWA,1998) as required for the proposed mining operations. WUL bearing ref: **WU28322** was applied to the Department of Water and Sanitation for the following triggered section 21 water uses: Section 21(a): taking water from a water resource; sections 21(b): storing water; Section 21(c): impeding or diverting the flow of water in a water course; Section 21(i): altering the bed, banks, course, or characteristics of a water course; Section 21(g) disposing of waste in a manner which may detrimentally impact on a water course; Section 21(j): removing, discharging, or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people.

Project location: The proposed project area is within portions 7 and 20 (excluding portion 26) of the farm Leeuwfontein 48 IS, approximately 22.45 km north east of Kriel, approximately 6.04 km south of Kornati and 2 km north of the Kleinfontein Colliery which falls within the Steve Tshwete Local Municipality in Nkangala District Municipality, Mpumalanga Province. The area can be accessed through the R35 provincial road that runs from Middelburg town to Bethal, some portions of the area of interest have been mined before as an opencast mining method. The applied mining area is approximately 98.600ha in extent.

Public Participation Process and Timelines:
Chapter 6, regulation 40(2)(3) of EIA Regulations (GN 517, amended 11 June 2021) requires that the Public Participation Process provides access to all information that may have potential to influence the decision regarding the applications, it further outlines that the potential interested and affected parties be provided with an opportunity to comment on project reports and plans.
Interested and Affected Parties (I&APs) are hereby invited to participate freely and submit any questions or information they feel may contribute to the process. All comments received will be recorded and addressed as part of the environmental impact assessment process. This opportunity is being offered to all I&APs so that they can:

- Register as an I&AP and to respond to the environmental compliance process;
- Raise issues of concern and provide suggestions for enhanced benefits;
- Contribute to local knowledge; and
- Comment on the EIA & EMPr.

Date of Notice: Interested and Affected Parties are hereby notified of the availability of the Full EIA & EMPr report for a public review period of 30 calendar days from the **23rd of August 2023** until the **21st of September 2023.** As according to the GN 267 of the NWA 36, 1998, I&AP are invited to review specialist studies of this project for a period of 60 calendar days (23 Aug 2023 - 22 Oct 2023) I&APs are invited to review and send through comments of the above-mentioned report. This report is available at the **Gerard Sekoto Public Library** (Wanderers Avenue, Middelburg, 1055), substantiated with soft copies (via emails; Dropbox link; Google Drive; WeTransfer, etc.) upon request from **Singo Consulting (Pty) Ltd** using the contact details of the Public Participation Officer and Environmental Assessment Practitioner (EAP) below.

Public Meetings: EIA meeting will be held on the 26th August 2023 (Saturday) at Scheeman farm, Middelburg at 10am.

Online video conferencing tools such as Microsoft Teams, Skype; Hang out, Zoom and GoToMeeting will be used to engage with stakeholders for online discussions if required. The purpose of online video conferencing is to discuss the proposed project, the specialist studies, the Full EIA/EMPr, potential impacts and mitigation measures. Stakeholders will also be provided with an opportunity to physically engage with the project team and raise their issues of concern as stated above.

All issues received from I&APs will be addressed by the independent consulting firm, Singo Consulting (Pty) Ltd, and Tornowize (Pty) Ltd.
For further information, please do not hesitate to contact us on the details below:

ISAZISO SOKUTHOLAKALA KOMBEKO WOKUHLOLA UMTHETHO WENDALO KANYE NOMBIKO WeNLELO LOKUPHATHWA KWEZIMO (EIA & EMPr) NGELUNGELO LOKUMAMBILWA KWAMAlahle, UKUGUNYAZWA KWENDAWO (I-EIA EHLANGANISIWE NE-EMPr), ILAYISENSI YOKUSETSHENZISWA KWAMANZI KANYE NOKULAWULWA KOKUDLAPHOXA I-ION 26) VA IFULAZI LEEUWFONTEIN 48, LINGAKAPHAKATHI KUKAMASIPALA WESIFUNDA SASE-STEVE TSHWETE, ISIFUNDAZWE SEMPUMALANGA (DMRE REF.: MP 30/5/1/2/2/10383 MR).

Isaziso sinikezwa ngokoMthethu Wokuphathwa Kwemvelo Kazwelonke (uMthetho we-107 ka-1998) (njengoba uchitshiyelwe), uMthetho Wezimbiwa kanye Nophethiloli (uMthetho No.28 ka-2002) (njengoba uchatshiyelwe), ilayisensi Yokulawulwa Kwemfucuza (WML) imisebenzi ngokwesigaba 45 soMthetho Kazwelonke Wokulawulwa Kwemfucuza Kwezemvelo ka-2008 (uMthetho, 1998 (uMthetho 107 ka-1998) (NEMA) kanye noMthethe Wamanzi Kazwelonke (uMthetho No. kulandele isicelo seLungelo Lezimayini kanye Nesicelo Selayisensi Yokulawulwa Kwemfucuza eMyangweni Wezimbiwa Namandla, kanye nesicelo Selayisensi Yokusetshenziswa Kwamanzi Edidiyelwe eMnyangweni Wezamanzi Nokuthuthwa Kwendle (WU28322) engenyeni 7 & 20 (ngaphandle kwengxenye 26) yepulazi. I-Leeuwfontein 48 IS, endaweni kaMasipala Wendawo wase-Steve Tshwete, ngaphakathi kweSifunda seMantshi sase-Middleburg, eSifundazweni saseMpumalanga.

Incazelo Yephrojekthi: I-Tornowize (Pty) Ltd ihlose ukwenza ingubo Yokugunyazwa Kwezemvelo (Ukuhlola Okugcwele Kwemithelela Yendawo Ezungezile, Ilayisensi Yokulawula Udoti, kanye Nelayisensi Yokusebenzisa Amanzi (WUL) yokumbiwa kwamalahle). Indlela yezimayini izosetshenziswa izoba yindlela yokusakavwa evulekile. Umbiko we-Scoping Report walesi sicelo wamukelwa mhla ziyi-16 kuNhlaba wezi-2023. Isigaba esigcwele se-EIA sale phrojekthi siyaqhubeka kanye neSicelo Selayisensi Yokusebenzisa Amanzi (WULA) ngaphansi kwezinhlinzeko zeMthetho Wamanzi Kazwelonke No.36 ka-1998 (NWA, 1998) njengoba kudingeka emisebenzini yezimayini ehlongozwayo. I-WUL eneref: i-WU28322 yafakwa eMnyangweni Wezamanzi Nokuthuthwa Kwendle mayelana nalokhu okulandelayo okucushiwe kwesigaba 21 ukusetshenziswa kwamanzi: Isigaba 21(a): ukukha amanzi esizindeni samanzi; izigaba 21(b): ukugcina amanzi; Isigaba 21(c): ukuvimbela noma ukuphambukisa ukuhamba kwamanzi endaweni ehamba amanzi; Isigaba 21(i): ukushintsha umbhede, amabhange, indawo, noma izici zendlela yamanzi; Isigaba 21(g) sokulahla imfucuza ngendlela engase ibe nomthelela omubi endleleni yamanzi; Isigaba 21(j): ukususwa, ukuchithwa, noma ukuchithwa kwamanzi atholakala ngaphansi komhlaba uma kudingekile ukuze kughutshekwe ngempumelelo nomsebenzi noma ukuphepha kwabantu.eSifundazweni Sase-Middleburg, esifundazweni saseMpumalanga

Indawo yephrojekthi: Indawo ehlongozwayo yephrojekthi ingaphakathi kwengxenye yesi-7 no-20 (ngaphandle kwengxenye 26) yepulazi i-Leeuwfontein 48 IS, cishe amakhilomitha angama-22.45 eNyakatho-Mpumalanga ye-Kriel, cishe amakhilomitha angu-6.04 eNingizimu yeKornati kanye nama-2 km eNyakatho yekholeji yase-Kleinfontein ewela phakathi kwe-Steve. Umasipala wendawo waseTshwete kuMasipala wesiFunda saseNkangala. eSifundazweni saseMpumalanga. Le ndawo ingangenwa ngomgwaqo wesifundazwe u-R35 osuka edolobheni laseMiddleburg uya e-Bethal, ezinye izingxenye zendawo ezithakaselwayo bezike zambiwa ngaphambili njengendlela yezimayini evulekile. Indawo yezimayini esetshenziswayo ilinganiselwa ku-98.600ha ububanzi.

Inqubo Yokuhlanganyela Komphakathi Nemihlahlandlela:
Isahluko 6, umthethonqubo 40 (2) (3) weMithethonqubo ye-EIA (GNR 326, 7 Ephreli 2017) sidinga ukuthi Inqubo Yokuzibandakanya Komphakathi inikeze ukufinyelela kuyo yonke imininingwane engabile ibe nomthelela ekuthatheni isinqumo mayelana nezicelo, iphinde iveze ukuthi amandla abathintekayo nabathintekayo banikezwe ithuba lokuthi baphawule ngemibiko nezinhlelo zamaphrojekthi.
Uyamenywa ukuthi ubambe iqhaza ngokukhululeka futhi uthumele noma yimiphi imibuzo noma imininingwane anomuzwa wokuthi ingaba nomthelela kulolu hlelo. Kubalulekile ukuthi abahlalisile kanye / noma abathintekayo (I&AP) babhalise ukuze bathole izibuyekezo zenqubo. Yonke imibono etholakele izorekhodwa futhi ibhekwe njengengxenye yenqubo yokuhlola umthelela kwezemvelo. Leli ithuba unikezwa lona ukuze ukwazi:

- Bhalisa njenge-I & AP futhi uphendule ngenqubo yokuhambisana nemvelo;
- Phakamisa izinqinamba ezikhathazayo futhi unikeze iziphakamiso ngezinzuzo ezithuthukisiwe;
- Nikela olwazini lwendawo; futhi
- Phawula nge-EIA kanye ne-EMPr.

Usuku lwesaziso: Abantu Abanentshisekelo Nabathintekayo bayaziswa ngokutholakala kombiko ophelele we-EIA kanye ne-EMPr ukuze umphakathi ubuyekezwe ngezinsuku ezingama-30 zekhalenda kusukela zingama-23 ku-Agasti 2023 kuze kube zingama-21 kuSepthemba 2023. Njengokwe-GN 267 ye-NWA 36, 1998, I&AP iyamenywa ukuthi ibuyekeze izifundo zochwepheshe zale phrojekthi isikhathi esiyizinsuku ezingama-60 zekhalenda. Ama-I&APs amenywa ukuthi abuyekeze futhi athumele ngokuphawula kombiko oshiwo ngenhla. Lo mbiko uyatholakala ku-Gerard Sekoto Public Library (Wanderers Avenue, Middleburg), uqinisekiswa ngamakhophi athambile (ngoma-imeyili isixhumanisi se-Dropbox; i-Google Drayivu; i-WeTransfer, njll.) uma ucelwa kwa-Singo Consulting (Pty) Ltd usebenzisa imininingwane yokuxhumana. Yesikhulu Sokubambiqhaza Komphakathi kanye Nomsebenzi Wokuhlola Imvelo (EAP) ngezansi.
Imihlangano Yomphakathi: Umhlangano we-EIA uzoba mhla zingama-26 kuNcwaba wezi-2023 (uMgqibelo) eScheeman farm, eMiddelburg ngo 10am.

Amathuluzi enkomfa ngevidiyo aku-inthanethi afana namaQembu eMicrosoft, iSkype; I-Hangout, i-Zoom ne-GoToMeeting izosetshenziselwa ukuhlanganyela nababambe iqhaza ezingxoxweni eziku-inthanethi uma kudingeka. Inhloso yenkomfa ngevidiyo ivukuxoxa ngephrojekthi ehlongozwayo, izinzuzo zochwepheshe, i-EIA/EMPr Egcwele, imithelela engaba khona nezindlela zokunciphisa. Ababambiqhaza bazoghindele banikezwe ithuba lokuxhumana nethimba lephrojekthi futhi baveze izinto ezibakhathazayo njengoba kushiwo ngenhla.

Zonke izingxinamba ezithotwe kuma-I & APs zizobhekelelwa yinkampani ezimele yabeluleki, iSingo Consulting (Pty) Ltd.Kanye ne Tornowize (Pty) Ltd. Ngeminye imininingwane, sicela ungangabazi ukuxhumana nathi

ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) & PUBLIC PARTICIPATION OFFICER CONTACT DETAILS:

Consultant Contact Person:

Singo Consulting (Pty) Ltd

Office 870, 5 Balalaika Street, Tasbet Park Ext 2, Witbank, 1040
T: 013 692 0041
F: 086 514 4103
PP Officer: Rofhiwa Nemutandani
EAP: Mutali Guduvheni
C: 073 020 7361
E: rofhiwa@singoconsulting.co.za

Applicant Contact Person:

Tornowize PTY (LTD)

50 Toerien Street, Klipfontein, EMalahleni, 1035
Applicant: Mr Sonwabo Dedebu
T: +27 13 692 4378
C: +27 79 494 0068
E: sonwabo@tornowize.co.za

Wilde skietery in nagtelike ure

Gerhard Rheeder

Saneliso Dladla sal Vrydag formeel om borgtog aansoek doen.

Die Middelburg Dagpatrollie het Saterdagaand tot in die vroeë oggendure Sondag nog na twee gewapende kapers in Kanonkop gesoek, nadat die boosdoeners omstreeks 22:00 in 'n skietgeveg met die polisie en dagpatrollielede langs die Klein Olifantsrivier betrokke was.

Inwoners is uit die slaap geruk deur tientalle geweerskote, insluitende R5 rondtes, wat oor en weer tussen die polisie en drie kapers afgevuur is.

Die kapers het vroeër Saterdag 'n trok in eMalahleni gekaap, en Verena om daarmee na Middelburg gery.

Nuus oor die kaping, en beskrywing van die trok, het soos 'n veldbrand op WhatsApp-groepe versprei, waarna die trok op pad na Middelburg opgemerk is.

Groot groepe mense het teen 22:00 nog langs die rivier uitgespan toe die trok met polisie en dagpatrollievoertuie agterna, Asaliastraat af gejaag het tot by die Lukskeibane.

Daar het die trok verskeie dennebome getref en teen die palissade-heining van die Lukskeibane tot stilstand gekom.

Die verdagtes het bloot die handrem opgepluk en in verskillende rigtings laat spaander.

In die hardloop is daar op die polisie en dagpatrollielede geskiet, wat terug gevuur het. Inwoners sê minstens 18-skote is getel.

Een van die verdagtes, Saneliso Dladla, is op die toneel gearresteer, terwyl 'n tweede verdagte in die rigting van die middedorp, en 'n derde in die rigting van Kanonkop gevlug het.

Een van die kapers het in die hardloop 'n oorpak uitgetrek, wat deur die polisie op die toneel gevind is.

'n Man wat ooggetuie beskrywings gepas het, is deur dagpatrollielede opgelaai, maar weer laat gaan nadat Dladla ontken het dat hy betrokke was.

Die soektog na die kaper in Kanonkop is egter voorgesit, met 'n leë huis in Proteastraat wat deur dagpatrollielede besoek is, waar 'n slapende man in die oop huis aangetref is.

Daarna is dagpatrollielede, op 'n wenk uit die gemeenskap, na die munisipale swembad wat 'n geruime tyd lank oopstaan weens konstruksiewerk.

Minstens sewe skote is weer kort na middernag afgevuur by die swembad waar dagpatrollielede die sittende kaper by die pomphuis aangetref het.

Mnr. Arthur Hill van die dagpatrollie sê hulle het gehoop dat hy grond toe sou wil weens die waarskuwingskote, maar die verdagte het laat spaander in die rigting van die koppie langs Mhluzi waar dagpatrollielede sy spoor verloor het.

Dladla het Maandag in die hof verskyn vir die kaping. Addisionele klagtes soos poging tot moord weens die skietery, kan moontlik later by die klagstaat gevoeg word.

Hy verskyn Vrydag (vandag) weer in die hof vir 'n formele borgaansoek wat die staat sal teëstaan.

• Die swembad word sedert die kleine oorlog, waar niemand wonderbaarlik raakgeskiet is, weer gesluit.

Middelburg Observer
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Address: 41 Meyer St, Middelburg, 1050
www.middelburg observer.co.za
MiddelburgObserver

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Audit
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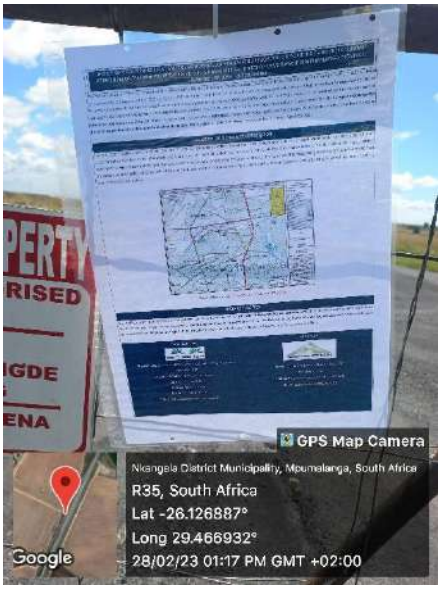
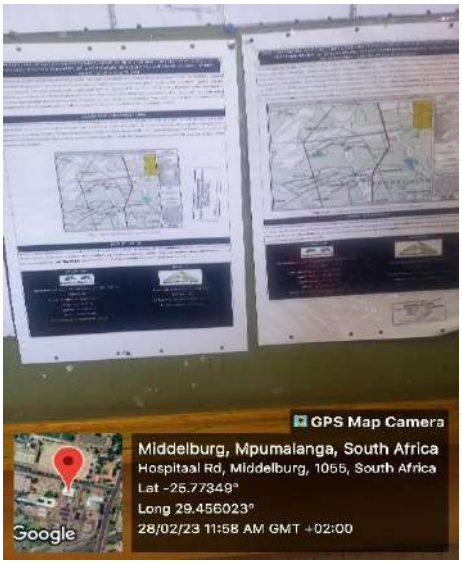
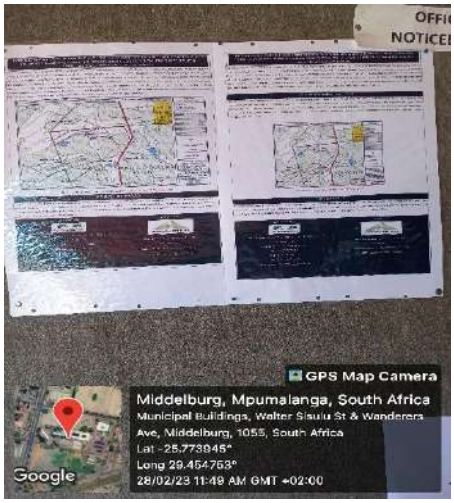
Appendix 8: Site notice

Site notices that were plugged around the farm boundaries ad mostly used roads.




GPS Map Camera
Middelburg, Mpumalanga, South Africa
Hospitaal Rd, Middelburg, 1055, South Africa
Lat -25.77349°
Long 29.456023°
28/02/23 11:58 AM GMT +02:00
Google


GPS Map Camera
Middelburg, Mpumalanga, South Africa
Municipal Buildings, Walter Sisulu St & Wanderers Ave, Middelburg, 1055, South Africa
Lat -25.773045°
Long 29.454753°
28/02/23 11:49 AM GMT +02:00
Google

SPECIALIST REPORTS

Appendix 9: Biodiversity studies

- Vegetation and flora impact assessment
- Avi-Fauna impact assessment
- Fauna impact assessment

Appendix 10: Heritage impact assessment

Appendix 11: Blasting Assessment

Appendix 12: Geo-hydrological assessment

Appendix 13: Social impact assessment (risk assessment)

Appendix 14: IWMP

Appendix 15: Soil, land capability and land use assessment

Appendix 16: Rehabilitation plan

Appendix 17: Mining works programme

Appendix 18: Social and labour plan

Appendix 19: Consulting Report for Public Participation Process.

Appendix 20: Wetland and Delineation Study

Appendix 21: Scoping report acceptance letter.

mineral resources & energy
Department:
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag X7279, Emalahleni, 1035, Tel: 013-653 0500, Fax: (013) 656 0932
Saveways complex, Mandela Streets, Witbank, 1035
Enquiries: Ms Martha Seshweni **Ref:** MP 30/5/1/2/3/2/1(10383) EM
E-Mail Address: Martha.seshweni@dmr.gov.za
Sub-Directorate: Mine Environmental Management

Registered Mail
The Directors
50 Toerien Street
Klipfontein
Emalahleni
1035

Attention: Mr Sonwabo Debedu **Fax:**086 514 4103

ACCEPTANCE OF SCOPING REPORT IN TERMS OF REGULATION 22 OF THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS 20014, IN RESPECT OF THE LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY THE APPLICATION, ON PORTION 7N AND 20 EXCLUDING PORTION26 OF THE FARM LEEUWFONTEIN 48 IS, WITHIN THE MAGISTERIAL DISTRICT OF MIDDELBURG, MPUMALANGA REGION.

The Scoping Report (SR) and Plan of Study for Environmental Impact Assessment received by the Department on 23 March 2023 refers:

1. The Department has evaluated the submitted SR and Plan of Study for Environmental Impact Assessment dated 23 March 2023 and is satisfied that the documents comply with the minimum requirements of Appendix 2(2) of National Environmental Management Act, 1998 (as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations, 2014. The SR is hereby accepted by the Department in terms of regulation 22(a) of the NEMA EIA Regulations, 2014.

2. You may proceed with the environmental impact assessment process in accordance with the tasks contemplated in the Plan of Study for Environmental Impact Assessment as required in terms of the NEMA EIA Regulations, 2014.

3. It should be noted that the Department requires the following to be undertaken and form part of the final EIR and EMPr to be submitted.

a) All the activities to be undertaken on site must be described and the impacts that they will have on the physical, biological, social, economic and cultural aspects of the environment must be assessed
b) A description of the impact management objectives, including management statements identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all of phases of the development and the method of monitoring of the implementation of the impact management actions.
c) Feasible and reasonable alternatives based on the different types/categories of alternatives must be identified and assessed, so that the Department can be able to make an informed decision.
d) Public Participation Process must be transparent and all comments received during the process must be incorporated into the comments and response report of the final Environmental Impact Report.
e) Proof of correspondence with the various stakeholders must be included in the EIAR. Should you be unable to obtain comments, proof of the attempts that were made to obtain comments should be submitted to the Department
f) All comments from interested and affected parties must be adequately addressed in the final Environmental Impact Report.
g) For linear activities such as roads and pipelines, a description of the co-ordinates of the corridor in which the proposed activities are to be undertaken. The impacts of these linear activities must be thoroughly assessed.
h) A motivation for the need and desirability of the project must be included.
i) The financial provision calculation to be provided must distinguish the liability for the existing and for the proposed mining activities

4. The applicant is hereby reminded to comply with the requirements of regulation 3 of the EIA Regulations, 2014 with regards to the time period allowed for complying with the requirements of the Regulations.

5. Please ensure that the EIAR includes the A3 size locality maps of the area and illustrates the exact location of the proposed development. The maps must be of acceptable quality and as a minimum, have the following attributes:
   - Maps that are relatable to one another;
   - Co-ordinates;
   - Legible legends;
   - Alternatives;
   - Scale and
   - Vegetation types of the study area.

6. You are requested to submit two (2) hard copies of the EIAR and EMPr and at least one electronic copy (CD/USB) of the complete EIAR and EMPr to this Regional Office.

7. Your attention is brought to Section 24F of the NEMA which stipulates "that no activity may commence prior to an environmental authorisation being granted by the competent authority".

Yours faithfully

.....

REGIONAL MANAGER: MINERAL REGULATION

MPUMALANGA REGION

DATE....16/05/2023

CC Attention: Rudzane Radebe Shonisani

Appendix 22: Mining right acceptance letter

mineral resources & energy
Department
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag X7279, Witbank, 1035, Tel: 013 653 0500, Fax 086 605 6894
Saveways Crescent Centre, First Floor, Mandela Drive, Witbank, 1035
Directorate: Mineral Regulation: Mpumalanga Region
Email:Lerato.Santho@dmre.gov.za
Subdirectorate: Mineral Laws **Enquiries:** L C Mariri **File Ref:** MP 30/5/1/2/2/10383MR

REGISTERED MAIL

The Directors
Tornowize (Pty)Ltd
P O Box 1035
River Crescent
Die Heuwel
Gauteng
1047

Fax/ Email: sonwabo@tornowize.co.za

Dear Sir/Madam

APPLICATION FOR MINING RIGHT IN TERMS OF SECTION 22 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002) [HEREIN AFTER REFERRED TO AS THE ACT] AS AMENDED BY SECTION 18 OF THE MINERALS AND PETROLEUM RESOURCES DEVELOPMENT AMENDMENT ACT, 2008 (ACT 49 OF 2008) [HEREINAFTER REFERRED TO AS THE AMENDMENT ACT]: PORTION 9 OF THE FARM BANKFONTEIN 215 IS, SITUATED IN THE MAGISTERIAL DISTRICT OF MIDDELBURG.

1. I refer to the abovementioned matter and confirm that your application for a mining right in terms of section 22(2) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) as amended by section 18 of the Amendment Act 2008 (Act 49 of 2008) has been accepted .

2. In terms of Section 18(4) (a) and(b) as amended, you are required to submit:

2.1 The required environmental reports and documents as stipulated at your acknowledgement of receipt of an environmental authorisation in this regard.

2.2 In light of the minimum requirements as stipulated on Regulation 16(1) and 16(2) of the EIA Regulations, your application for an Environmental Authorisation was incomplete as it was not accompanied by this acceptance letter as per Sub Regulation 16(1)(ix) and considering that it is now completed by this acceptance letter, you are hereby required to submit the documents as stipulated on Regulation 19(1) to 19(8) of the EIA Regulations(only in cases where Basic Assessment Report is applicable) or Regulations 21 (Scoping Report) and Regulation 23 (EIR and EMPr) (In case of Scoping Report).All timeframes are effective from the date of this letter

3. To notify and in writing consult with the landowner (s) or lawful occupier(s) and all interested and affected parties (I and AP) and upload the results of such consultation within 180 days from the date of this letter.

4. Should the land be owned by the communities of a Trust on Behalf of the community, a proper and thorough consultation process must be engaged upon and a legitimate Tribal Resolution or consent must be obtained from the Traditional Authority/ Council or Trust and be submitted with the results consultation.

5. In other for your application to comply with the ownership element in your prospecting right in furthering the objects of Section 2(d) read together with Mining Charter, your shareholding must achieved the target which is the minimum of 30% BEE shareholding in terms of the 2018 Charter and must be distributed in the following manner:

   (i) A minimum of 5% non-transferable carried interest to qualifying employees from the effective date of a mining right.
   (ii) A minimum of 5% non-transferable carried interest or minimum 5% equity equivalent benefit as defined herein to host communities from the effective date.
   (iii) A minimum of 20% effective ownership in the form of shares to a BEE which Entrepreneur , 5% of which must preferably.

You are therefore urged to consider aligning your shareholding with the 2018 Charter.

6. You are advised to apply for water use licence from the Department of Water and Sanitation.

Do not hesitate to contact us, should you need clarity

Yours faithfully

REGIONAL MANAGER
MPUMALANGA REGION
DATE: ...09/02/2023.....

TORNOWIZE (PTY)LTD: MINING RIGHT ACCEPTANCE: 10383MR

Appendix 23: Erratum Letter.

DMRE REF: MP 30/5/1/2/2/10383 MR
14 February 2023

REQUEST FOR AN ERRATUM ON THE MINING RIGHT FARM NAME FOR APPLICATION WITH DMRE REF.: MP 30/5/1/2/2/10383 MR.

DEPARTMENT OF MINERAL RESOURCES AND ENERGY (DMRE)
DIRECTORATE MINERAL REGULATION: MPUMALANGA REGION

Saveways Crescent Centre
First floor
Mandela Drive
Witbank
1035
Attention: Regional Manager

Singo Consulting (Pty) Ltd was appointed by **Tornowize (Pty) Ltd** to lodge a Mining Right Application on farm Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS under Magisterial District of Steve Tshwete in Mpumalanga Province. An acceptance letter signed by Regional Manager on the 09th of February 2023 was written an incorrect farm name which is portion 9 of the farm Bankfontein 215 IS instead of Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS and it was received 5 days later by the consultant which is the 14th of February 2023.

Singo Consulting (Pty) Ltd hereby requests the Competent Authority to readdress the acceptance letter content and replace **portion 9 of the farm Bankfontein 215 IS** with **Portions 7 and 20 (Excluding Portion 26) of the Farm Leeuwfontein 48 IS**. Furthermore, it is anticipated that the EAP will use the timelines from the revised acceptance letter with the correct farm name for submission to the competent authority.

We hope the above is in order, should you need any clarification do not hesitate to contact us.

Kind regards,

Cell: +27 78 2727 839
Email: kenneth@singoconsulting.co.za

CONSULTATION REPORT

ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR COAL MINING RIGHT, WATER USE LICENSE, WASTE MANAGEMENT LICENCE, AND ENVIRONMENTAL AUTHORISATION APPLICATIONS.

DMRE REF NO: MP 30/5/1/2/2/10383 MP

Prepared for:

Tornowize PTY (LTD)

50 Toerien Street, Klipfontein, Emalahleni 1035
Tel: +27 13 692 4378
Cell: +27 79 494 0068
Email: sonwabo@tornowize.co.za

2023

Prepared by:

Singo Consulting (Pty) Ltd

Office 870, 5 Balalaika Street, Tasbet Park Ext 2, Witbank, 1040

Tel: +27 13 6920 041 | Cell: +27 73 020 7361 | Fax: 086 514 4103

Email: rofhiwa@singoconsulting.co.za Cc.kenneth@singoconsluting.co.za

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OF APPENDICES

1 BACKGROUND AND INTRODUCTION

Tornowize (Pty) Ltd (2014/067373/07) (the applicant) has appointed Singo Consulting (Pty) Ltd (consultant) to apply for Water Use License (WUL) ref: WU28322 as well as the Waste Management License (WML) and to undertake an Environmental Impact Assessment (EIA) and Environmental Authorisation processes for the purpose of mining coal on the portion 7 & 20 (excluding portion 26) of the farm Leeuwfontein 48 IS located within the Steve Tshwete Local Municipality under the Middleburg Magisterial District.

The Environmental Impact Assessment (EIA) process is a crucial step in the decision-making process for development projects. It is a tool used to assess and evaluate the potential environmental impacts of a proposed project before it is approved or rejected. The EIA process requires public participation to ensure that the voices, concerns, and values of the local community are taken into account when making decisions about development projects. Environmental Authorisation application process. Public participation in the EIA process is crucial for several reasons. First, it provides an opportunity for the local community to be informed and engaged in the decision-making process. This helps to ensure that the community's concerns and values are taken into account when making decisions about development projects. Second, public participation can help to identify potential environmental and social impacts that may not have been considered by the project proponent or the regulatory agency. Third, public participation can help to build trust and transparency in the decision-making process, which can lead to more effective and sustainable outcomes.

1.1 Objectives of the public participation

1. To engage and consult with interested and affected parties (I&APs), including local communities, stakeholders, and regulatory authorities, to gather valuable insights and feedback on the proposed coal mining project.
2. To provide comprehensive and transparent information about the project's scope, potential impacts on the environment and local communities, and the mitigation measures to address any adverse effects.
3. To ensure that the consultation process aligns with the requirements of relevant environmental legislation, including the Environmental Impact Assessment (EIA) process and the issuance of the necessary Environmental Authorisation.
4. To address any concerns or queries raised by I&APs during the consultation process and to provide clarifications and responses accordingly.

The separation of these objectives is somewhat artificial as the achievement of one will often depend upon the achievement of another.

1.2 Regulatory framework

These regulatory framework(s) must be adhered to with regard to the Public Participation Process (PPP):

- Chapter 6, regulation 40(2)(3) of EIA Regulations (GNR 326, 7 April 2017) requires that the PPP provides access to all information that may have the potential to influence the decision regarding the applications. It further outlines that the potential interested and affected parties (I&APs) be provided with an opportunity to comment on project reports and plans.

1.3 Details of the Public Participation Process Followed

All registered Interested and Affected Parties (I&APs) as well as relevant stakeholders were formally notified through newspaper publications regarding the availability of the Draft Scoping Report for the proposed coal mining project. The Draft Scoping Report was made accessible from the 24th of February 2023 to the 27th of March 2023. Copies of the report were made available at both the Steve Tshwete Local Municipality and the Public Library, enabling interested parties to access the information conveniently. Additionally, interested parties were able to obtain a copy of the report from Mr. SE Jiyane, the Environmental Assessment Practitioner (EAP) candidate representing Singo Consulting (Pty) Ltd, via email at simangaliso@singoconsulting.co.za.

During the initial stage of the scoping phase, stakeholders were actively engaged to provide valuable input and feedback on the proposed project. This inclusive approach allowed for the identification of key concerns and potential impacts from the local community and other stakeholders. Furthermore, a community meeting was held on the 9th of March 2023, providing a platform for face-to-face interaction and additional opportunities for stakeholders to voice their opinions and queries.

As the full Environmental Impact Assessment (EIA) stage progresses, stakeholders will once again be invited through newspaper advertisement and emails to participate and offer their comments and suggestions. This iterative engagement process ensures that all stakeholders remain informed and involved throughout the assessment, and their valuable input will be taken into account in shaping the final EIA report.

The project team has received comments from community members who actively participated in the community meeting, demonstrating their commitment to the project's transparency and community engagement. These comments will be diligently considered and addressed in the final EIA report. The comprehensive engagement process, starting from the scoping phase and continuing through the full EIA stage, underscores the commitment of Tornowize (Pty) Ltd and Singo Consulting (Pty) Ltd to foster a transparent, inclusive, and socially responsible approach to the proposed coal mining project. Through this diligent stakeholder engagement, the project aims to address concerns, promote open dialogue, and ultimately foster a mutually beneficial outcome for all stakeholders involved.

1.3.1 Interested and Affected Parties Identification Procedure

The identification of Interested & Affected Parties (I&APs) for this specific project was carried out using a comprehensive approach that combined telecommuting, print media, and site notices. Through telecommuting, the project team utilized email, media communications, and telecommunications to reach out to potential stakeholders. This allowed for efficient and direct communication, ensuring that relevant parties were promptly informed about the project and the opportunities for engagement. In addition to

telecommuting, traditional print media played a vital role in notifying I&APs. Newspaper advertisements were strategically placed to ensure widespread coverage and visibility, enabling a broader range of stakeholders to be aware of the project and the consultation process. To maximize accessibility and inclusivity, A3-sized site notices were prominently displayed in public spaces. These site notices served as informative signboards, placed strategically at locations where the project could be easily noticed by the public. This approach aimed to engage stakeholders who might not have access to telecommunication channels or print media, ensuring that everyone within the project's vicinity had an opportunity to be informed and participate in the consultation process.

1.3.2 Public Space Notices

To ensure effective communication with the local community and stakeholders, site notices were thoughtfully placed in both English and Zulu versions at various strategic locations. These site notices were carefully positioned to maximize visibility and accessibility, ensuring that a wide range of individuals could easily access the information related to the project. The placement of site notices along the Farm Boundaries and adjacent properties ensured that landowners and neighbouring communities were promptly informed about the proposed project and its potential impacts. By engaging stakeholders at these crucial locations, the public participation officer aimed to foster a sense of ownership and involvement among those directly affected by the development.

In addition to the local community, the site notices were also displayed at significant public institutions such as the Gerard Sekoto public library and the Steve Tshwete local Municipality. This strategic placement allowed for the dissemination of information to a broader audience, including those who frequent these institutions regularly. Recognizing the importance of transportation routes in the area, site notices were positioned along the R575 and R35 roads. This decision was aimed at reaching passing commuters, travellers, and motorists, thus expanding the scope of engagement to include not only residents but also those who traverse the area. By placing site notices in both English and Zulu versions, the public participation officer demonstrated a commitment to inclusivity and cultural sensitivity, ensuring that the information was accessible to individuals who speak either language. This approach promoted clear communication and enabled stakeholders to understand the project's objectives, potential impacts, and the importance of their involvement in the consultation process.

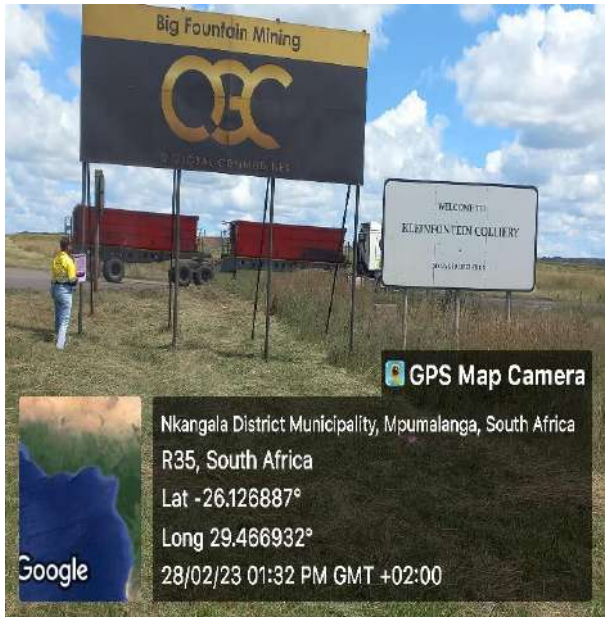

Figure 1: Site notices placement during scoping phase

1.3.3 Consultation

Scoping Phase

During the scoping phase of the project, a comprehensive and inclusive approach to stakeholder engagement was adopted to ensure effective communication and participation. Interested and Affected Parties (I&APs) and stakeholders were invited to register for a 30-day period, providing them with ample opportunity to express their interest in the project and be part of the consultation process. To reach a wide audience, notifications of the availability of the Draft Scoping Report were published in newspapers, ensuring that stakeholders were well-informed about the ongoing scoping activities. The Draft Scoping Report was made accessible at two important public locations - the Steve Tshwete Local Municipality and the public library, enabling interested parties to review the document conveniently.

Stakeholders were provided with direct access to the Draft Scoping Report through Singo Consulting (Pty) Ltd, where the appointed Environmental Assessment Practitioner (EAP) candidate, Mr. SE Jiyane, made the report obtainable upon request via email at simangaliso@singoconsulting.co.za. Recognizing the significance of engaging directly with landowners, the Scoping Report was shared with them for review. This approach ensured that landowners had the opportunity to provide their valuable input and insights, considering the potential impacts on their properties and surrounding areas.

Stakeholders were actively engaged during the initial stage of the scoping process and were further involved during the full Environmental Impact Assessment (EIA) stage to elicit their feedback and comments. A community meeting (Figure 2) held on March 9, 2023, served as an open forum for community members to express their concerns and opinions regarding the project. Community opinions has been incorporated into the ppp summary table.

This approach to stakeholder engagement aligns with the principles of sustainable development and reflects a commitment to environmental protection. It demonstrates the project's dedication to ensuring that all voices are heard and that stakeholders are meaningfully involved in the decision-making process.

Subsequently, on March 23, 2023, the Scoping Report was submitted to the Department of Mineral Resources and Energy (DMRE) for review and consideration (Figure 4). The acceptance of the report on May 16, 2023, highlights the effectiveness of the stakeholder engagement process and the diligent efforts made to adhere to regulatory requirements and timelines.

Figure 2: Community meeting.

Singo Consulting (Pty) Ltd
To manage & protect the best remaining environment
11 YEARS
Office 870
5 Rolalaika Street
Tasbet Park Ext 2
Witbank
+27 13 692 0041
+27 78 2727 838
+27 72 081 6682
hannesh@singoconsulting.co.za
www.singoconsulting.co.za
+27 08 914 4022

PROOF OF SUBMISSION

I, Wilhelm Swanepoel, herewith acknowledge receipt of:

X copy of the report titled: Draft scoping report

for Mining / Tornowize.

Name of Department:	
Physical Address of Department:	
Tell No.:	
Email:	

Singo Consulting (Pty) Ltd

Date: 09/03/2023

Time: 16 : 14

Signature:

PostNet Name: PostNet - Ben Fleur	PNA81908637994
Tel. No.: (+27) 013 697 1220 Acc. No.: PN819	PostNet Copy

From: (Sender) (Company Name) PostNet - Ben Fleur	To: (Receiver) (Company Name) SANRAL
Street Address Shop 23 Ben Fleur Bloulevard Cnr. Paul & Da Vinci Streets	Street Address 38 IDA STREET
Suburb Witbank City/Town Witbank	Suburb Menlo Park City/Town Menlo Park - PRY
Country South Africa Code 1035	Country South Africa Code 0081
Contact SIMANGALISO Tel (+27) 728321117	Contact RIA Tel (+27) 124266200
E-mail benfleur@postnet.co.za	E-mail

Insurance Yes No If yes, state value

Domestic: Express Courier ✓ | Economy (48-72hrs) | Dawn Courier | Saturday | Non Express (24-48hrs) | Same Day Courier | Other Specify | Public Holiday After Hours

SPECIAL INSTRUCTIONS

International: DOCUMENTS | NON-DOCUMENTS

No. of Parcels	Description of goods	Length in cm	Breadth in cm	Height in cm	Mass in kg
1	DOCUMENTS	40.00	30.00	4.00	2.00
1	Total No. of Parcels	Total Vol	0.96	Total Mass	2.00

WE HAVE SEEN AND AGREE TO THE STANDARD CONDITIONS OF CARRIAGE (OVERLEAF) WHICH SHALL APPLY TO THIS CONSIGNMENT AND ALL FUTURE CONSIGNMENTS ACCEPTED BY POSTNET. WE FURTHER DECLARE THAT THIS CONSIGNMENT DOES NOT CONTAIN DANGEROUS GOODS.

EXPRESS PACK SECURITY NUMBER ON LIP OF FLYER

SENDER'S DETAILS

Name: SIMANGALISO Date: 2023-03-01

Signature: Time: 11:19:49

POSTNET AND ARAMEX RESERVE THE RIGHT TO MARK THE SERVICE "OVERNIGHT EXPRESS" FOR "DOMESTIC" SHOULD NO SERVICE BE SELECTED

ACCEPTED BY POSTNET

Ankia
Name

Signature

2023-03-01 11:19:49
Date Time

POSTNET Courier an aramex company

CHARGES	RANDS	CENTS
Basic Tariff		
Surcharge		
Insurance		
Packaging Surcharge		
VAT		
TOTAL INCL. VAT		

To track your shipment go to: www.postnet.co.za or download the PostNet Courier App

POSTNET STANDARD CONDITIONS OF CARRIAGE

To view the Standard Conditions of Carriage online, Please visit http://www.postnet.co.za/standard-conditions-of-carriage

Singo Consulting (Pty) Ltd
10 YEARS
+27 13 692 0041
+27 78 2727 839
+27 72 081 6682
kenneth@singoconsulting.co.za
www.singoconsulting.co.za
Office 870
5 Balalaika Street
Tasbet Park Ext 2
Witbank
+27 86 514 4103

Protect & manage the best remaining environment

PROOF OF SUBMISSION

I, Elize Lebloe, herewith acknowledge receipt of:

1 X copy of the report titled: Scoping Report for

for Coal.

Name of Department:	Library
Physical Address of Department:	
Tell No.:	013 2497086
Email:	Gerardsekatulibrary@gmail.

Date: 28/2/2023

Time: ____ : ____

Signature:

Singo Consulting (Pty) Ltd
+27 13 692 0041
+27 78 2727 839
+27 72 081 6682
kenneth@singoconsulting.co.za
www.singoconsulting.co.za
Office 870
5 Balalaika Street
Tasbet Park Ext 2
Witbank
+27 86 514 4103
Protect & manage the best remaining environment

PROOF OF SUBMISSION

I, Imobile Maupie, herewith acknowledge receipt of:

__ X copy of the report titled: Scoping Report

for Coal.

Name of Department:	Es SWM
Physical Address of Department:	C
Tell No.:	0646591280
Email:	Imobilem@stlm.gov.za

Date: 28 / 02 / 2023

Time: 11 : 43

Signature:

Figure 3: Draft Scoping report proof of submissions

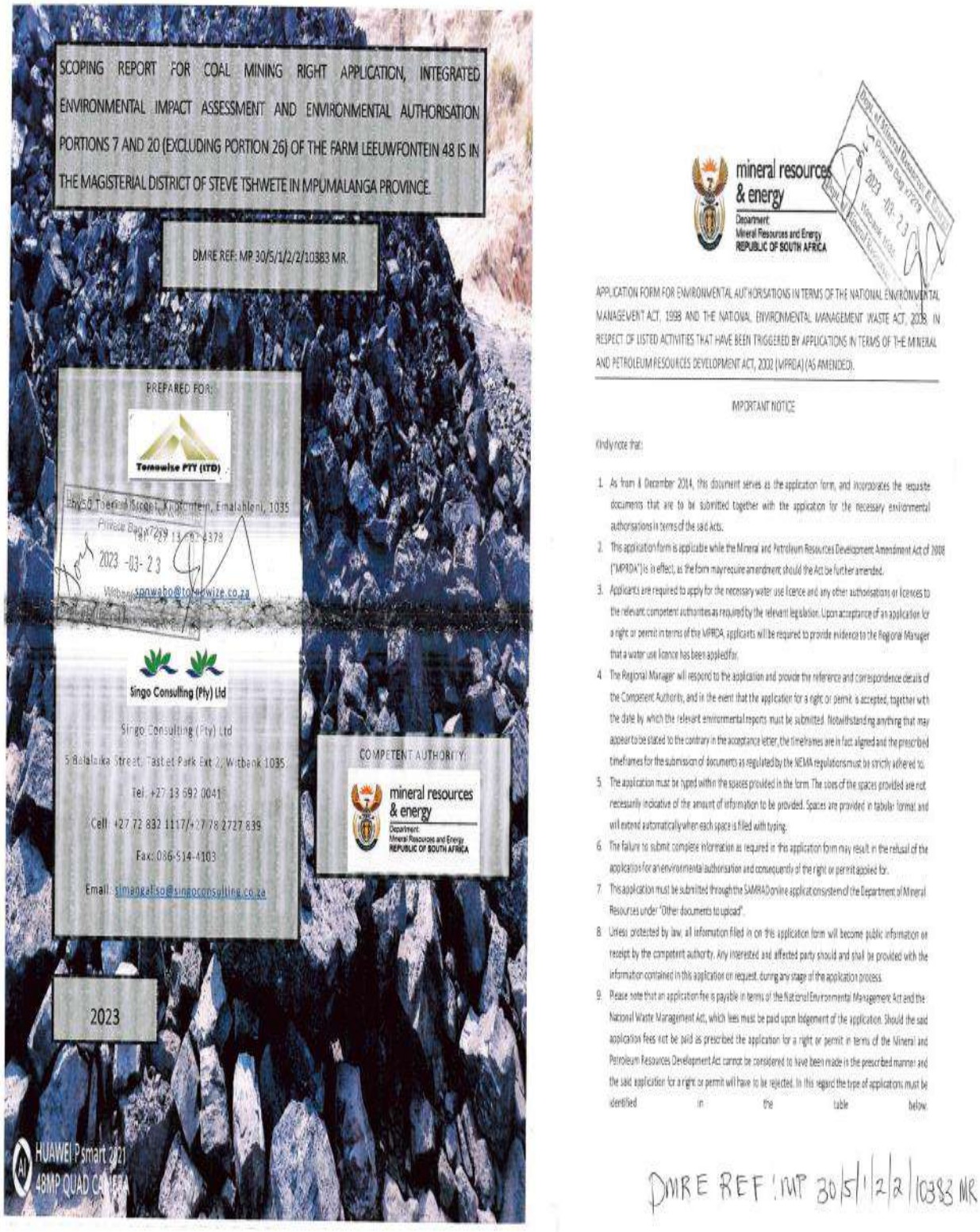

Figure 4: Proof of Submission for Scoping report at DMRE

Full EIA Consultation

During the EIA phase of the project, the Draft Full Environmental Impact Assessment Report (DEIA) and Environmental Management Programme report (EMPr) will be made available to Interested & Affected Parties (I&APs) for their review and comments. The consultation period will span 30 days, commencing on 23rd August 2023 and concluding on 21st September 2023.

To ensure widespread awareness of the availability of the DEIA and EMPr, the project's advertisement was first published in the Middleburg Observer newspaper on 18th August 2023 (Figure 5). Additionally, proactive outreach will be undertaken via email to engage other I&APs and stakeholders, ensuring they have access to the documents for review.

Physical copies of the DEIA and EMPr will be submitted to relevant organs of state and authorities, including the Mpumalanga Tourism Parks Agency (MTPA), Department of Agriculture, Land Reform and Rural Development (DALRRD), and the South African National Roads Agency Ltd (SANRAL). Furthermore, the documents will be made accessible at specific locations, such as the Steve Tshwete Local Municipality's Environmental and Waste Management Department, as well as the Gerard Sekoto Public Library.

To enhance accessibility, electronic copies of the DEIA and EMPr will be shared with all identified and registered I&APs through emails and the file-sharing platform, WeTransfer. This digital distribution will enable timely and efficient access to the documents, encouraging stakeholders to engage and provide valuable feedback within the specified consultation period.

The consultation phase is a crucial aspect of the environmental impact assessment process, as it provides an opportunity for stakeholders to review the findings, proposed measures, and potential impacts of the project. Their comments and input will be carefully considered in the finalization of the reports, ensuring that all concerns and interests are addressed and integrated into the project's planning and implementation.

This comprehensive and inclusive approach to stakeholder engagement reflects the commitment of Tornowize (Pty) Ltd and Singo Consulting (Pty) Ltd to transparent and participatory decision-making, striving for a balanced and sustainable outcome that aligns with regulatory requirements and best environmental practices. The feedback received during this consultation period will be instrumental in shaping the project's future direction and ensuring its compatibility with the aspirations and well-being of the community and environment it serves.

1.3.4 Newspaper advertisements

A newspaper advertisement was placed and published in the local paper (Middleburg Observer), Page 7 on 24th of February 2023 to notify all the Interested & Affected Parties of the proposed project (Scoping phase) as shown on 5. A newspaper advertisement was successfully placed on the 18th of August 2023, effectively notifying all interested and affected parties about the availability of the draft Environmental Impact Assessment (EIA) report.

The advertisement, which can be found in Figure 6 of the attached documentation, contains essential information regarding the draft EIA report's accessibility. Importantly, it includes details about a forthcoming community meeting that has been scheduled for the 26th of August 2023. This meeting will take place at the Schoeman farm church located in Middleburg and is slated to begin at 10:00 AM. The decision of scheduling the community meeting on a weekend – a Saturday – reflects a thoughtful approach to ensuring maximum participation. By holding the meeting outside of regular working hours, it aims to provide an opportunity for a broader spectrum of community members to attend and engage in the discussions.

Vrydag 24 Februarie 2023
Gemeenskap < Middelburg Observer | 7

Second body found in Klein Olifants River

Less than two months ago, police retrieved the body of a man from the Klein Olifants River, on Monday, yet another body was discovered.

The unknown dead man was found near Vloed Street in Eastdene at about 19:30 after a passer-by witnessed the body floating down the river.

The police were alerted and the body was transported to the Middelburg Forensic Pathology Department.

A case has since been opened with the Middelburg Police.

Anyone who might be missing a loved one is urged to visit the Middelburg Police Station.

Residents are advised to steer clear of low-water bridges and refrain from practising religious ceremonies in the river due to flooding.

DA plotting 2024 Mpumalanga poll coup

Gerhard Rheeder

The DA hosted the party's Mpumalanga Congress on Saturday, where Middelburg's Bosman Grobler was re-elected as Mpumalanga DA Chairman unopposed alongside Mpumalanga Party Leader Jane Sithole.

Nasaret also has something to celebrate after 300 voting delegates placed their trust in local councillor and Nasaret resident Morgan Bruiners, to lead the party as Deputy Chairman for the next three years.

According to Mr Grobler, the most important task ahead is to establish party structures in every corner of the province, to ensure visibility and representation in every election, with the aim to grow party representation in both parliament and the provincial legislature.

Mr Grobler says the DA aims to reduce the ANC's votes to below 50 per cent in order to put an alternative government in place.

"Only the DA is stable and big enough to achieve this," said Mr Grobler.

Mr Bruiners added, "My mission is simple, which is to contribute and consistently build on an accountable, efficient and effective Democratic Alliance in Mpumalanga. To grow party representation in the legislature that will guarantee equality, inclusivity, prosperity, freedom and peace for every citizen of the sunrise province."

Both men agree that more emphasis will also be placed on increasing voter turnout in both rural and urban areas.

Service delivery will further be enhanced by driving political and community activism.

The party was happy to welcome former leader Helen Zille to the fold at Olifants River Lodge on Saturday.

Ms Zille expressed her trust and support to the leadership, which also comprises of:

- Mpumalanga Deputy Leader Trudie Grové-Morgan
- DA Women's Network (DAWN) Chairperson Mariaan Chamberlain
- DAWN Deputy Chairperson Sesana Mathebula
- Provincial Finance Chairman Joseph Sibanyoni

In closing remarks, Ms Sithole said it was every Mpumalanga resident's duty to vote in order to remove the ANC and its system of cronyism and corruption.

- The Middelburg constituency also received an award for the best DA membership drive in Mpumalanga.

Three of the Mpumalanga DA's newly elected leaders together on stage: Morgan Bruiners (provincial Deputy Chairman), Bosman Grobler (provincial Chairman) and Trudie Grové-Morgan (provincial Deputy Leader).

DA councillors, delegates and activists from Middelburg celebrate after receiving the award for the best membership drive in Mpumalanga.

Roosmarie TikTok voort

Gerhard Rheeder

Roosmarie van Staden.

Roosmarie van Staden sê sy is verskriklik jammer vir haar wandade nadat sy skuldig bevind is op 'n enkele klag van diefstal.

Die hof het haar 'n boete van R1500 en drie jaar gevangenisstraf opgelê.

Beide die boete en gevangenisstraf is vir drie jaar opgeskort.

Na die vonnisoplegging het syverskoning gevra vir talle plaaslike slagoffers, by wie sy derduisende rande geleen het, sonder om dit terug te betaal.

'n Tweede diefstalklag is teen haar laat vaar, nadat sy skuldig gepleit het vir die diefstal van 'n luidspreker.

Sy het die luidspreker gehuur vir 'n geselligheid maar nooit terug gegee nie.

"Ek het skuldig gepleit want ek is skuldig," sê Roosmarie oor die luidspreker.

Sy is op 11 Januarie in Bothaville gearresteer, nadat sy uit Middelburg gevlug het weens lasbriewe vir haar arrestasie.

Tydens haar eerste verskyning op 12 Januarie het sy skuld erken vir die diefstal van die luidspreker.

Roosmarie word nie vervolg vir die verkoop van vals Juanita du Plessis kaartjies vir 'n vertoning wat sy geweet het nie sou plaasvind nie.

Klaers wat kaartjies vir die vertoning gekoop het, het nie formele klagtes gelê nie.

Sy het ook brandstof by 'n vulstasie ingegooi sonder om daarvoor te betaal.

Volgens haar woon sy nou in Boksburg waar sy vaste werk en verblyf gekry het.

Borg van R2000 is op 12 Januarie aan haar toegestaan, maar sy kon nie die geld bybring nie.

Sy was 16-dae in aanhouding voordat sy op 27 Januarie gevonnis is.

Sedert haar vrylating is sy ook weer aktief op TikTok onder die naam *die_fcn_hele_ramket*.

Roosmarie het altesaam 3 142 volgelinge op TikTok.

Alleged farm attackers in dock

The three men that were apprehended by farmers after a farm attack in Stoffberg on Saturday appeared in the Middelburg Magistrates' Court.

Malen Mahlangu, Vusi Mahlangu and Siyabonga Vincent Radebe are facing charges of attempted murder, illegal fire arm possession and several other charges.

They are expected to make their second court appearance on February 27 for their formal bail application.

According to information, the three accused allegedly entered Mr Jan Uys' farm at about 17:00 Saturday.

Mr Uys was in his workshop when he heard gunshots from his workers' living quarters.

When he went to investigate, he found one of his workers shot in the neck. The worker was allegedly shot by one of the accused, who fled the scene shortly after.

One of Mr Uys' workers recognised an attacker, supposedly causing one of them to open fire.

Mr Uys informed the other farmers in the area and closed the Laersdrif road. They successfully apprehended the three men and contacted the police.

While searching the suspects, the farmers found weapons with scratched off serial numbers.

NOTICE OF COAL MINING RIGHT AND ENVIRONMENTAL AUTHORISATION APPLICATION ON PORTIONS 7 AND 20 (EXCLUDING PORTION 26) OF THE FARM LEEUWFONTEIN 48 IS IN THE MAGISTERIAL DISTRICT OF STEVE TSHWETE IN MPUMALANGA PROVINCE: DMRE REF: MP 30/5/1/2/2/10383 MR.

ISIZULU

Isaziso sikhishwa ngokoMthetho Wokuphathwa Kwemvelo Kazwelonke (uMthetho we-107 ka-1998) (njengoba uchitshiyelwe), uMthetho Wezimbiwa kanye Nezithombo Zamafutha (uMthetho No.28 ka-2002) (njengoba uchitshiyelwe) kanye noMthetho Wamanzi Kazwelonke (uMthetho No. ka-1998), yenqubo edidiyelwe yokuHlola i-Scoping kanye ne-Environmental Impact Assessment okufanele ilandelwe ukuze kube nelungelo Lezimayini kanye Nesicelo Selayisensi Yokulawulwa Kwemfucuza eMnyangweni Wezimbiwa Namandla, isicelo seLayisense Yokusetshenziswa Kwamanzi Edidiyelwe eMnyangweni Wezamanzi Nokuthuthwa Kwendle kanye Ilaysensi yokulawulwa kwemfucuza (WML) yemisebenzi yokulawulwa kwemfucuza ngokwesigaba 45 soMthetho Kazwelonke Wokulawulwa Kwemfucuza Kazwelonke wezi-2008 (uMthetho, 1998 (uMthetho we-107 ka-1998) (NEMA).

gama Lephrojekthi: Tomowize Coal Mine

Umfakisicelo: Tomowize (Pty) Ltd

Indawo kanye nencazelo yephrojekth: Indawo ehlongozwayo yephrojekthi ingaphakathi kwengxenye yesi-7 no-20 (ngaphandle kwengxenye 26) yepulazi i-Leeuwfontein 48 IS, cishe amakhilomitha angama-22.45 eNyakatho-Mpumalanga ye-Kriel, cishe amakhilomitha angu-6.04 eningizimu yeKomati kanye nama-2 km eNyakatho yeKheleji yase-Kleinfontein ewela phakathi kwe-Steve. Umasipala wendawo waseTshwete kuMasipala wesiFunda saseNkangala, eSifundazweni saseMpumalanga. Indawo ingangenwa ngomgwaqo wesifundazwe u-R35 osuka edolobheni laseMiddelburg uya e-Bethal, ezinye izingxenye zendawo ezithakaselwayo bezike zambiwa ngaphambili njengendlela yezimayini evulekile. Indawo yezimayini esetshenziswayo ilinganiselwa ku-98.600ha ububanzi, bheka imephu yendawo enamathiselwe yendawo ehlongozwayo.

DATE OF NOTICE:

Uhlaka lokubuyekezwa kombiko wesikophu esisalungiswa kanye nesikhathi sokubonisana sizoqala kusukela zingama-**24 kuFebruary wezi-2023** kuya zingama-**27 kaMashi wezi-2023** kubo bonke abathintekayo nabathintekayo. Umbiko Osalungiswa Wokuhlela uzotholakala e-**Gerard Sekoto Library** (Wanderers Avenue, Middelburg, 1055), **kuMasipala Wendawo ka-Steve Tshwete** kanye nekhophi elithambile uma ucelwa kwa-**Singo Consulting (Pty) Ltd** kusetshenziswa imininingwane yokuxhumana nomuntu ozongenela ukhetho i-EAP ngezansi noma ngokuqondile ehhovisi.

Abanentshisekelo kanye/noma Abathintekayo (I&AP) bayacelwa ukuthi babhalise ukuze bathole izibuyekezo zenqubo futhi banikezwe ithuba lokubeka imibono ngalo msebenzi oshiwo ngenhla. Sicela uthumele igama lakho, imininingwane yokuxhumana kanye nentshisekelo odabeni ngokubhala, kumuntu oxhumene naye we-EAP ohlinzelwe ngezansi.

Abanentshisekelo kanye/noma Abathintekayo (I&AP) bayacelwa ukuthi babhalise ukuze bathole izibuyekezo zenqubo futhi banikezwe ithuba lokubeka imibono ngalo msebenzi oshiwo ngenhla. Sicela uthumele igama lakho, imininingwane yokuxhumana kanye nentshisekelo odabeni ngokubhala, kumuntu oxhumene naye we-EAP ngezansi.

ENGLISH

Notice is given in terms of the National Environmental Management Act (Act 107 of 1998) (as amended), the Minerals and Petroleum Resources Act (Act No. 28 of 2002) (as amended) and the National Water Act (Act No. 36 of 1998), of an Integrated Scoping and Environmental Impact Assessment process to be followed for a Mining Right and a Waste Management Licence application to the Department of Mineral Resources and Energy, an Integrated Water Use Licence application to the Department of Water and Sanitation and a Waste Management Licence (WML) for waste management activities in terms of section 45 of the National Environmental Management Waste Act 2008 (Act, 1998 (Act 107 of 1998)(NEMA).

Name of Project: Tomowize Coal Mine

Applicant: Tomowize (Pty) Ltd

Location and project description: The proposed project area is within portions 7 and 20 (excluding portion 26) of the farm Leeuwfontein 48 IS, approximately 22.45 km North-East of Kriel, approximately 6.04 km South of Komati and 2 km North of the Kleinfontein Colliery which falls within the Steve Tshwete Local Municipality in Nkangala District Municipality, Mpumalanga Province. The area can be accessed through the R35 provincial road that runs from the Middelburg town to Bethal, some portions of the area of interest have been mined before as an opencast mining method. The applied mining area is approximately 98.600ha in extent.

DATE OF NOTICE:

The Draft scoping report review and consultation period will commence from the **24th of February 2023 to 27th March 2023** for all interested and affected parties. The Draft Scoping report will be available at **Gerard Sekoto Library** (Wanderers Avenue, Middelburg, 1055), **Steve Tshwete Local Municipality** and a soft copy upon request from **Singo Consulting (Pty) Ltd** using the contact details of the candidate EAP below or directly from our office.

Interested and/or Affected Parties (I&AP) are hereby requested to register to receive updates of the process and afforded the opportunity to provide comments on the above-mentioned project. Please submit your name, contact information and interest in the matter in writing, to the candidate EAP contact person provided below.

EAP CANDIDATE:

Singo Consulting (Pty) Ltd

Physical Address: Office 870, 5 Balalaika Street, Tasbet Park Ext 2, Witbank, 1040
EAP.: Mr. Simangaliso Jiyane
Tel No.: +27 13 6920 041/ +27 72 8321 117
Fax No.: +27 86 5144 103
Email.: simangaliso@singoconsulting.co.za

APPLICANT:

Tomowize PTY (LTD)

Physical Address: 50 Torrien Street, Klipfontein, eMalahleni, 1035
Contact Person: Mr Sonwabo Sellwa Debedu
Tel No.: +27 13 692 4378
Cell No.: +27 79 494 0068
Email: sonwabo@tomowize.co.za

Figure 5: Newspaper Publication (Middleburg Observer– 24th of February 2023)

2 | Middelburg Observer

Friday 18 August 2023

NOTICE OF AVAILABILITY OF ENVIRONMENTAL IMPACT ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT (EIA & EMPR) FOR COAL MINING RIGHT, ENVIRONMENTAL AUTHORISATION (INTEGRATED EIA & EMPR), WATER USE LICENCE AND WASTE MANAGEMENT APPLICATIONS ON PORTIONS 7 & 20 (EXCLUDING PORTION 26) OF THE FARM LEEUWFONTEIN 48 IS, SITUATED WITHIN STEVE TSHWETE DISTRICT MUNICIPALITY, MPUMALANGA PROVINCE (DMRE REF.: MP 30/5/1/2/2/10383 MR).

Notice is given in terms of the National Environmental Management Act (Act 107 of 1998) (as amended), the Minerals and Petroleum Resources Act (Act No. 28 of 2002) (as amended), Waste Management Licence (WML) for waste management activities in terms of section 45 of the National Environmental Management Waste Act 2008 (Act 107 of 1998)(NEMA) and the National Water Act (Act No. 36 of 1998), of an Integrated Environmental Impact Assessment process to be followed for a Mining Right and a Waste Management License application to the Department of Mineral Resources and Energy, and an Integrated Water Use Licence application to the Department of Water and Sanitation (WU28322) on portions 7 & 20 (excluding portion 26) of the farm Leeuwfontein 48 IS, situated in the Local Municipality of Steve Tshwete, within the Middelburg Magisterial District, Mpumalanga Province.

Project Description: Tornowize (Pty) Ltd intends to carry out an Environmental Authorisation process (Full Environmental Impact assessment, Waste Management License, and a Water Use Licence (WUL) for coal mining). The mining methodology to be utilised will be an open cast method. The Scoping Report of this application was accepted on the 16th May 2023. The full EIA phase of this project is underway as well as the Water Use Licence Application (WULA) under the provisions of the National Water Act No. 36 of 1998 (NWA,1998) as required for the proposed mining operations. WUL bearing ref: **WU28322** was applied to the Department of Water and Sanitation for the following triggered section 21 water uses: Section 21(a): taking water from a water resource; sections 21(b): storing water; Section 21(c): impeding or diverting the flow of water in a water course; Section 21(d): altering the bed, banks, course, or characteristics of a water course; Section 21(g) disposing of waste in a manner which may detrimentally impact on a water course; Section 21(j): removing, discharging, or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people.

Project location: The proposed project area is within portions 7 and 20 (excluding portion 26) of the farm Leeuwfontein 48 IS, approximately 22.45 km north east of Kriel, approximately 6.04 km south of Komati and 2 km north of the Kleinfontein Colliery which falls within the Steve Tshwete Local Municipality in Nkangala District Municipality, Mpumalanga Province. The area can be accessed through the R35 provincial road that runs from Middelburg town to Bethal, some portions of the area of interest have been mined before as an opencast mining method. The applied mining area is approximately 98.600ha in extent.

Public Participation Process and Timelines:
Chapter 6, regulation 40(2)(3) of EIA Regulations (GN 517, amended 11 June 2021) requires that the Public Participation Process provides access to all information that may have potential to influence the decision regarding the applications, it further outlines that the potential interested and affected parties be provided with an opportunity to comment on project reports and plans.
Interested and Affected Parties (I&APs) are hereby invited to participate freely and submit any questions or information they feel may contribute to the process. All comments received will be recorded and addressed as part of the environmental impact assessment process. This opportunity is being offered to all I&APs so that they can:

- Register as an I&AP and to respond to the environmental compliance process;
- Raise issues of concern and provide suggestions for enhanced benefits;
- Contribute to local knowledge; and
- Comment on the EIA & EMPr.

Date of Notice: Interested and Affected Parties are hereby notified of the availability of the Full EIA & EMPr report for a public review period of 30 calendar days from the **23rd of August 2023** until the **21st of September 2023**. As according to the GN 267 of the NWA 36, 1998, I&AP are invited to review specialist studies of this project for a period of 60 calendar days (23 Aug 2023 – 22 Oct 2023) I&APs are invited to review and send through comments of the above-mentioned report. This report is available at the **Gerard Sekoto Public Library** (Wanderers Avenue, Middelburg, 1055), substantiated with soft copies (via emails: Dropbox link; Google Drive; WeTransfer, etc.) upon request from **Singo Consulting (Pty) Ltd** using the contact details of the Public Participation Officer and Environmental Assessment Practitioner (EAP) below.

Public Meetings: EIA meeting will be held on the 26th August 2023 (Saturday) at Schoeman farm, Middelburg at 10am.

Online video conferencing tools such as Microsoft Teams, Skype, Hang out, Zoom and GoToMeeting will be used to engage with stakeholders for online discussions if required. The purpose of online video conferencing is to discuss the proposed project, the specialist studies, the Full EIA/EMPr, potential impacts and mitigation measures. Stakeholders will also be provided with an opportunity to physically engage with the project team and raise their issues of concern as stated above.

All issues received from I&APs will be addressed by the independent consulting firm, Singo Consulting (Pty) Ltd, and Tornowize (Pty) Ltd.
For further information, please do not hesitate to contact us on the details below:

ISAZISO SOKUTHOLAKALA KOMBIKO WOKUHLOLA UMTHETHO WENDALO KANYE NOMBIKO WeHLELO LOKUPHATHWA KWEZIMO (EIA & EMPr) NGELUNGELO LOKUMAMBILWA KWAMAlahle, UKUGUNYAZWA KWENDAWO (I-EIA EHLANGANISIWE NE-EMPr), ILAYISENSI YOKUSETSHENZISWA KWAMANZI KANYE NOKULAWULWA KOKUDLAPHOXA I-JON 26) YA IFULAZI LEEUWFONTEIN 48, LINGAKAPHAKATHI KUKAMASIPALA WESIFUNDA SASE-STEVE TSHWETE, ISIFUNDAZWE SEMPUMALANGA (DMRE REF.: MP 30/5/1/2/2/10383 MR).

Isaziso sinikezwa ngokoMthetho Wokuphathwa Kwemvelo Kazwelonke (uMthetho we-107 ka-1998) (njengoba uchitshiyelwe), uMthetho Wezimbiwa kanye Nophethiloli (uMthetho No.28 ka-2002) (njengoba uchitshiyelwe), Ilayisensi Yokulawulwa Kwemfucuza (WML) emisebenzi ngokwesigaba 45 soMthetho Kazwelonke Wokulawulwa Kwemfucuza Kwezemvelo ka-2008 (uMthetho, 1998 (uMthetho 107 ka-1998) (NEMA) kanye noMthetho Wamanzi Kazwelonke (uMthetho No. kulandele isicelo selungelo lezimayini kanye Nesicelo Selayisensi Yokulawulwa Kwemfucuza eMnyangweni Wezimbiwa Namandla, kanye nesicelo Selayisensi Yokusetshenziswa Kwamanzi Edidiyelwe eMnyangweni Wezamanzi Nokuthuthwa Kwendle (WU28322) engxenyeni 7 & 20 (ngaphandle kwengxenye 26) yepulazi. I-Leeuwfontein 48 IS, endaweni kaMasipala Wendawo wase-Steve Tshwete, ngaphakathi kweSifunda seMantshi sase-Middleburg, eSifundazweni saseMpumalanga.

Incazelo Yephrojekthi: I-Tornowize (Pty) Ltd ihlose ukwenza inqubo Yokugunyazwa Kwezemvelo (Ukuhlola Okugcwele Kwemithelela Yendawo Ezungezile, Ilayisensi Yokulawula Udoli, kanye Nelayisensi Yokusebenzisa Amanzi (WUL) yokumbiwa kwamalahle). Indlela yezimayini ezosetshenziswa izoba yindlela yokusakazwa evulekile. Umbiko we-Scoping Report walesi sicelo wamukelwa mhla ziyi-16 kuNhlaba wezi-2023. Isigaba esigcwele se-EIA sale phrojekthi siyaqhubeka kanye neSicelo Selayisensi Yokusebenzisa Amanzi (WULA) ngaphansi kwezinhlinzeko zoMthetho Wamanzi Kazwelonke No.36 ka-1998 (NWA, 1998) njengoba kudingeka emisebenzini yezimayini ehlongozwayo. I-WUL eneref: I-WU28322 yafakwa eMnyangweni Wezamanzi Nokuthuthwa Kwendle mayelana nalokhu okulandelayo okucushiwe kwesigaba 21 ukusetshenziswa kwamanzi: Isigaba 21(a): ukukha amanzi esizindeni samanzi; isigaba 21(b): ukugcina amanzi Isigaba 21(c): ukuvimbela noma ukuphambukisa ukuhamba kwamanzi endaweni ehamba amanzi; Isigaba 21(i): ukushintsha umbhede, amabhange, indawa, noma izici zendlela yamanzi; Isigaba 21(g) sokulahla imfucuza ngendlela engase ibe nomthelela omubi endleleni yamanzi; Isigaba 21(j): ukususwa, ukuchithwa, noma ukuchithwa kwamanzi athola kala ngaphansi komhlaba uma kudingekile ukuze kuqhutshekwe ngempumelelo nomsebenzi noma ukuphezhia kwabantu.eSifundazweni Sase-Middleburg, esifundazweni saseMpumalanga

Indawo yephrojekthi: Indawo ehlongozwayo yephrojekthi ingaphakathi kwengxenye yesi-7 no-20 (ngaphandle kwengxenye 26) yepulazi I-Leeuwfontein 48 IS, cishe amakhilomitha angama-22.45 eNyakatho-Mpumalanga ye-Kriel, cishe amakhilomitha angu-6.04 eNingizimu yeKomati kanye nama-2 km eNyakatho yeKholeji yase-Kleinfontein ewela phakathi kwe-Steve. Umasipala wendawo waseTshwete kuMasipala wesiFunda saseNkangala, eSifundazweni saseMpumalanga. Le ndawo ingangenwa ngomgwaqo wesifundazwe u-R35 osuka edolobheni lase Middelburg uya e-Bethal, ezinye izingxenye zendawo ezithakaselwayo bezike zambiwa ngaphambili njengendlela yezimayini evulekile. Indawo yezimayini esetshenziswayo iilinganiselwa ku-98.600ha ububanzi.

Inqubo Yokuhlanganyela Komphakathi Nemihlahlandlela:
Isahluko 6, umthethonqubo 40 (2) (3) weMthethonqubo ye-EIA (GNR 326, 7 Ephreli 2017) sidinga ukuthi Inqubo Yokuzibandakanya Komphakathi inikeze ukufinyelela kuyo yonke imininingwane engahle ibe nomthelela nkuthatheni isinqumo mayelana nezicelo, iphinde ineze ukuthi amandla abathintekayo nabathintekayo banikezwe ithuba lokuthi baphawule ngemibiko nezinhlelo zamaphrojekthi.
Uyamenywa ukuthi ubambe iqhaza ngokukhululeka futhi uthumele noma yimiphi imibuzo noma imininingwane onomuzwa wokuthi ingaba nomthelela kulolu hlelo. Kubalulekile ukuthi ababhalisile kanye / noma abathintekayo (I&AP) babhalise ukuze bathole izibuyekezo zenqubo. Yonke imibono etholakele izorekhodwa futhi ibhekwe njengengxenye yenqubo yokuhlolu umthelela kwezemvelo. Leli thuba unikezwa lona ukuze ukwazi:

- Bhalisa njengeI & AP futhi uphendule ngenqubo yokuhambisana nemvelo;
- Phakamisa izinggingamba ezikhathazayo futhi unikeze iziphakamiso ngezinzuzo ezithuthukisiwe;
- Nikela olwazini lwendawo; futhi
- Phawula ngo-EIA kanye ne-EMPr.

Usuku lwesaziso: Abantu Abanentshisekelo Nabathintekayo bayaziswa ngokutholakala kombiko ophelele we-EIA kanye ne-EMPr ukuze umphakathi ubuyekezwe ngezinsuku ezingama-30 zekhalendi kusukela zingama-23 ku-Agasti 2023 kuze kube zingama-21 kuSepthemba 2023. Njengokwe-GN 267 ye-NWA 36, 1998, I&AP iyamenywa ukuthi ibuyekeze izifundo zochwepheshe zale phrojekthi isikhathi esiyizinsuku ezingama-60 zekhalendi. Ama-I&APs amenywa ukuthi abuyekeze futhi athumele ngokuphawula kombiko oshiwo ngenhla. Lo mbiko uyatholakala ku-Gerard Sekoto Public Library (Wanderers Avenue, Middleburg,), uginisekiswa ngamakhophi athambile (ngama-imeyili; isikhumanisi se-Dropbox; i-Google Drayivu; i-WeTransfer, njll.) uma ucelwa kwa-Singo Consulting (Pty) Ltd usebenzisa imininingwane yokuxhumana. Yesikhulu Sokubambisqhaza Komphakathi kanye Nomsebenzi Wokuhlola Imvelo (EAP) ngezansi.

Imihlangano Yomphakathi: Umhlangano we-EIA uzoba mhla zingama-26 kuNcwaba wezi-2023 (uMgqibelo) eSchoeman farm, eMiddelburg ngo 10am.

Amathuluzi enkomfa ngevidiyo aku-inthanethi afana namaQembu eMicrosoft, iSkype; I-Hangout, i-Zoom ne-GoToMeeting izosetshenziselwa ukuhlanganyela nababambe iqhaza izingxoxoweni eziku-inthanethi uma kudingeka. Inhloso yenkomfa ngevidiyo iwukuxoxa ngephrojekthi ehlongozwayo, izifundo zochwephesha, I-EIA/EMPr. Egcwele, imithelela engaba khona nezindlela zokunciphisa. Ababambiqhaza bazophinde bankezwe ithuba lokuxhumana nethimba lephrojekthi futhi baveze izinto ezibakhathazayo njengoba kushiwo ngenhla.

Zonke izingqinamba ezithelwe kuma-I & APs zizobhekelelwa yinkampani ezimele yabelulekl. iSingo Consulting (Pty) Ltd,Kanye ne Tornowize (Pty) Ltd. Ngeminye imininingwane, sicela ungangabazi ukuxhumana nathi

ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) & PUBLIC PARTICIPATION OFFICER CONTACT DETAILS:

Consultant Contact Person:

Singo Consulting (Pty) Ltd

Office 870, 5 Balalaika Street, Tasbet Park Ext 2, Witbank, 1040
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F: 086 514 4103
PP Officer: Rofhiwa Nemutandani
EAP: Mutali Guduvheni
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E: rofhiwa@singoconsulting.co.za

Applicant Contact Person:

Tornowize PTY (LTD)

50 Toerien Street, Klipfontein, EMalahleni, 1035
Applicant: Mr Somwabo Dedebu
T: +27 13 692 4376
C: +27 79 494 0068
E: somwabo@tornowize.co.za

Wilde skietery in nagtelike ure

Gerhard Rheeder

Saneliso Dladla sal Vrydag formeel om borgtog aansoek doen.

Die Middelburg Dagpatrollie het Saterdagaand tot in die vroeë oggendure Sondag nog na twee gewapende kapers in Kanonkop gesoek, nadat die boosdoeners omstreeks 22:00 in 'n skietgeveg met die polisie en dagpatrollielede langs die Klein Olifantsrivier betrokke was.

Inwoners is uit die slaap geruk deur tientalle geweerskote, insluitende R5 rondtes, wat oor en weer tussen die polisie en drie kapers afgevuur is.

Die kapers het vroeër Saterdag 'n trok in eMalahleni gekaap, en Verena om daarmee na Middelburg gery.

Nuus oor die kaping, en beskrywing van die trok, het soos 'n veldbrand op WhatsApp-groepe versprei, waarna die trok op pad na Middelburg opgemerk is.

Groot groepe mense het teen 22:00 nog langs die rivier uitgespan toe die trok met polisie en dagpatrollievoertuie agterna, Asaliastraat af gejaag het tot by die jukskeibane.

Daar het die trok verskeie dennebome getref en teen die palissade-heining van die jukskeibane tot stilstand gekom.

Die verdagtes het bloot die handrem opgepluk en in verskillende rigtings laat spaander.

In die hardloop is daar op die polisie en dagpatrollielede geskiet, wat terug gevuur het. Inwoners sê minstens 18-skote is getel.

Een van die verdagtes, Saneliso Dladla, is op die toneel gearresteer, terwyl 'n tweede verdagte in die rigting van die middedorp, en 'n derde in die rigting van Kanonkop gevlug het.

Een van die kapers het in die hardloop 'n oorpak uitgetrek, wat deur die polisie op die toneel gevind is.

'n Man wat ooggetuie beskrywings gepas het, is deur dagpatrollielede opgelaai, maar weer laat gaan nadat Dladla ontken het dat hy betrokke was.

Die soektog na die kaper in Kanonkop is egter voorgesit, met 'n leë huis in Proteastraat wat deur dagpatrollielede besoek is, waar 'n slapende man in die oop huis aangetref is.

Daarna is dagpatrollielede, op 'n wenk uit die gemeenskap, na die munisipale swembad wat 'n geruime tyd lank oopstaan weens konstruksiewerk.

Minstens sewe skote is weer kort na middernag afgevuur by die swembad waar dagpatrollielede die sittende kaper by die pomphuis aangetref het.

Mnr. Arthur Hill van die dagpatrollie sê hulle het gehoop dat hy grond toe sou val weens die waarskuwingskote, maar die verdagte het laat spaander in die rigting van die koppie langs Mhluzi waar dagpatrollielede sy spoor verloor het.

Dladla het Maandag in die hof verskyn vir die kaping. Addisionele klagtes soos poging tot moord weens die skietery, kan moontlik later by die klagstaat gevoeg word.

Hy verskyn Vrydag (vandag) weer in die hof vir 'n formele borgaansoek wat die staat sal teëstaan.

• Die swembad word sedert die kleine oorlog, waar niemand wonderbaarlik raakgeskiet is, weer gesluit.

Middelburg Observer
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www.middelburg observer.co.za
MiddelburgObserver

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Code of Conduct
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The distribution of this ABC newspaper is independently audited to the professional standards administrated by the Audit Bureau of Circulations of South Africa.

Figure 6: Newspaper Publication (18 August 2023)

1.3.5 Farm list/Landowner details as per the deed search

The proposed mining right is on portions 7 and 20, which the title deed hold is the same person just under different companies Ukufisa Inv Holdings (Pty) Ltd and Puckree farming (Pty) Ltd. See the attached windeed search results below. The landowner was consulted pertaining the project and they are not objecting.

WinDeed Database D/O Property
IS, LEEUWFONTEIN, 48, 20, MPUMALANGA

Lexis® 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	2022/09/15 09:47	Farm Number	48
Reference	-	Registration Division	IS
Report Print Date	2022/09/15 09:49	Portion Number	20
Farm Name	-	Remaining Extent	NO
Deeds Office	Mpumalanga	Search Source	WinDeed Database

PROPERTY INFORMATION			
Property Type	FARM	Diagram Deed Number	T48204/989
Farm Name	LEEUWFONTEIN	Local Authority	STEVE TSHWETE LOCAL MUNICIPALITY
Farm Number	48	Province	MPUMALANGA
Registration Division	IS	Remaining Extent	NO
Portion Number	20	Extent	56.8538H
Previous Description	-	LPI Code	T0IS00000000004800020

OWNER INFORMATION (1)			
PUCKREE FARMING PTY LTD			Owner 1 of 1
Company Type	COMPANY	Document	T13984/2021
Registration Number	2003008621O7	Microfilm / Scanned Date	-
Name	PUCKREE FARMING PTY LTD	Purchase Price (R)	2 150 500
Multiple Owners	NO	Purchase Date	2020/02/21
Multiple Properties	NO	Registration Date	2021/12/09
Share (%)	-		

ENDORSEMENTS (2)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	INFO FROM PRETORIA DEEDS REGIS	-	-	-

DISCLAIMER
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Page 1 of 2

ENDORSEMENTS (2)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
2	CL-HIGHVELD DC	-	-	-

HISTORIC DOCUMENTS (8)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	T93379/2002	ILANGA COAL MINES PTY LTD	31 000	2002 0879 1237
2	T136924/1997	MIDDELBURG CONSOLIDATED MINES PTY LTD	30 000	2002 0879 1234
3	T48204/1989	MAGGIES MYNE PTY LTD	1 060 000	1995 0683 4210
4	T48607/1995	ERN TRADING SA PTY LTD	300 000	1998 0125 1085
5	B152952/2007	-	392 515	-
6	B1410/2011	-	58 000 000	-
7	T8749/2012	UKUFISA INV HOLDINGS PTY LTD	2 941 689	20120814 11:27:33
8	T13983/2021	NASONTI TECHNICAL SERVICES PTY LTD	597 271	-

PORTION LIST				
Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
	KOORNFONTEIN PTY LTD			
13	BLACK ROYALTY MINERALS KOORNFONTEIN PTY LTD	T5661/2022	-	-
14	UMCEBO PROP PTY LTD	T18090/2008	-	-
15	UMCEBO PROP PTY LTD	T18091/2008	-	-
16	UMCEBO PROP PTY LTD	T18091/2008	-	-
17	KLEINFONTEIN COLLIERY PTY LTD	T8615/2012	-	-
18	UMCEBO PROP PTY LTD	T18089/2008	-	-
19	UMCEBO PROP PTY LTD	T18092/2008	-	-
20	PUCKREE FARMING PTY LTD	T13984/2021	-	-
21	*** NO LONGER EXISTS - SEE ENDORSEMENTS ***	-	-	-
22	SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD	T843/2021	-	-

Figure 7: Windeed Results (angled in red)

1.3.6 Background Information Documents (BID)

Background Information Documents (BIDs) were provided to Governmental Departments, Steve Tshwete local Municipality (by hand), adjacent landowners and library (Gerard Sekoto Library), the purpose was to

introduce the project and to invite all stakeholders to forward views, comments, concerns and/or recommendations about the project. I&APs were given a period of 30 days to comment and raise issues/concerns with regards to the Background Information Document (BID) (24th of Feb 2023 to 27th of March 2023, excluding public holidays).

This BID contained the following information:

- Description of the project
- Project location (enclosing coordinates)
- The Environmental Assessment Processes; and
- Guidelines for stakeholder participation in the EIA process

1.3.7 Summary of Interesting and Affected Parties (I&APs)

All comments received from I&APs and organs of state and responses received have been captured and addressed in the Appendix E of this report, and they will assist in compiling final the FULL EIA & EMPr and supporting studies respectively.

These Authorities were identified and included in the I&AP database from the outset. These are specific IA&Ps that the EIA regulations require the EAP to consult. The representatives of these governmental departments were routinely consulted so that each could designate how the EAP should engage with them, which will influence the manner and structure of the PPP. This also includes the information requirements.

- Steve Tshwete Local Municipality.
- Mpumalanga Department of Rural, Environmental and Agricultural Development.
- Mpumalanga Department of Water and Sanitation.
- Mpumalanga Department of Rural Development and Land Reform.
- Mpumalanga Department of Agriculture, Forestry and Fisheries.
- Mpumalanga Department of Coal Processing Plantral Resources and Energy.
- Mpumalanga Tourism Parks Agency
- National Department of Environmental Affairs.
- South African National Roads Agency Ltd (SANRAL).
- South African Heritage Resources Agency
- Mpumalanga Heritage Resources Agency
- Eskom SOC Limited.

- DFFE

Appendix A: Interested and Affected Parties.

Names of I & AP's	Organisation	Contact numbers	Email Address
Wilhem Swanepol	Landowner(s)	+27 72 612 8853	
Mr Muzi Khumalo	Interested & Affected Party (I&APs)	+27 79 473 8550	
Wayleaves	Eskom	+27 13 692 0041	Wayleavesmou@eskom.co.za
Mary Mogale Rhulani Chabalala	Department of Agriculture, Land Reform & Rural Development	+27 13 754 0728/ +27 71 643 4754	EllyT@dalrrd.gov.za
Ria Barkhuizen	SANRAL	+27 12 426 6200	Full EIA khuizenr@nra.co.za/ NRStat@nra.co.za
Tshilidzi Mavulwana Yuza Chabalala	TRANSNET	+27 13 658 2250	Tshilidzi.Mavulwana@transnet.net Yuza.Chabalala@transnet.net
Dineo Tswai	Mpumalanga Provincial Governance		dtswai@mpg.gov.za
Phumla Nkosi	Mpumalanga Tourism & Parks Agency (MTPA)	+27 13 254 0279	Phumla.Nkosi@mtpa.co.za
Desmond M (Environmental Officer)	Steve Tshwete Local Municipality (Environmental and Solid Waste Management)	Tel:	desmondm@stlm.gov.za
Lerato Gambu	Nkangala District Municipality	+27 13 249 2000/2156	gambulc@nkangaladm.gov.za

Xolani V. Motha	(Land Use and Health Services department)		MothaXV@nkangaladm.gov.za
Biodiversity Conservation, Mainstreaming EIA (Admin)	Biodiversity Mainstreaming EIA: Department of Forestry, Fisheries and the Environment	+ 27 86 111 2468	bcadmin@dffe.gov.za
Betty Mnguni	Department of Water and Sanitation: Olifants Proto-CMA	+27 60 998 9210	MnguniB@dws.gov.za
Johan Botha	SASOL (Manager: Land and Rights Regional Operations and Asset Services)	+27 82 499 4378	jj.botha@sasol.com

Appendix B: Interested and Affected Parties.

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
Landowners					
Wilhem Swanepol: **Cell No.:** +27 72 612 8853	x	09/03/2023 (Face-face)	I will go through this draft scoping report with the board I am working with, then we will submit our comments to you, we can guarantee you that we are not against the project.	We glad that you are not against the project, we are looking forward to receiving the comments and address them accordingly.	
Adjacent Occupiers					
Who is adjacent.					
Local Municipality					
STEVE TSHWETE LOCAL MUNICIPALITY **(Environmental Officer)** **Mr Ratshibvumo** **Email: thabile@stlm.gov.za** Tel: 064 659 1280 **Michael Nkosi** Email: michaeln@stlm.gov.za 013 249 7153		0./07/2023	The municipality recommends that the following project as identified through community consultative process (IDP) be included in your SLP application. (a) Installation and commissioning of a back up generator at the water treatment plant	• A hardcopy of draft scoping report was submitted for comments and review on the 28th of February 2023. • Comment noted and the recommendation has been included in the SLP.	Appendix G

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
District Municipality					
Government departments					
South African Heritage Resource Agency  			No issued raised yet,	Submitted for statutory comments through online system on the 17th of March 2023.	Appendix D
Department of Water and Sanitation  E-mail: NemukulaM@dws.gov.za			No issued raised yet,	Submitted a draft scoping report via e-mail for comments and review on the 24th of March 2023.	
Department of Environmental Affairs  **E-mail:** BCAdmin@environment.gov.za		14/04/2023	No issued raised yet, The directorate: Biodiversity conservation has reviewed and evaluated the report and the proposed plan of study. The directorate does not have any	Submitted a draft scoping report via e-mail for comments and review on the 24th of March 2023. Comment noted and specialist investigation undertaken were submitted	Appendix E

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
			objection with the proposed plan of study.it is recommended that the specialist investigations undertaken in accordance with the terms of reference established be submitted with the final scoping.	with final scoping.	
Commission on Restitution of Land Rights E-mail: George.Mhlanga@dalrrd.gov.za			No issued raised yet,	Submitted land claim enquiry on the 24th of February 2023 via e-mail.	
Mpumalanga Tourism Tel No.: +27 13 254 0279 Email: Phumla.Nkosi@mtpa.co.za Postal address: N4 Halls Gateway, Matafin Block G, Room D			No issued raised yet,	Submitted a draft scoping report via courier for comments and review on the 1st of March 2023.	

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
 E-mail: wayleavesmou@eskom.co.za MafutsNZ@eskom.co.za		04/05/2023 25/05/2023	• Good morning, may you kindly send the first pole number and the last and the area where that line is. You did not include this information on the form. Please remove Herry on the list, he is no longer in distribution. • Good day, we can meet at Puckree`s entrance at 13h30 tomorrow.	• Submitted a draft scoping report via e-mail for comments and review on the 24th of March 2023. • Good day, kindly find the attached completed form. Please note that the main aim of this application is to remove the line that is mentioned in the application form (4 May 2023). • Good day we requested the removal of an Eskom powerline that is currently inoperative and was allegedly utilized by a mining company in the past. We kindly request your assistance, prompt response will be appreciated (04 May 2023)	

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
				• Good day, please find the pole number as requested (25/05/2023) • In accordance to our telecommunication discussion, I am still waiting for the scheduled meeting for our onsite meeting (25 May 2023). •	
agriculture, forestry & fisheries Department: Agriculture, Forestry and Fisheries REPUBLIC OF SOUTH AFRICA Rhulani Chavalala Tel No.: +27 60 973 5375 Postal address: 27 Brown Street, 2nd Floor office B8.				Submitted a draft scoping report via courier for comments and review on the 1st of March 2023.	

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
 Email: wayleaves@sasol.com Zodwa.mamba@sasol.com Seipati.lekalala@sasol.com		16/03/2023 23/03/2023	• Good morning, we need to print this attachment, but we are unable to. Please send it in a way we would be able to • Good day we received your application via Stanley Brace was sent by Botha. We will respond.	• Submitted a draft scoping report via courier for comments and review on the 15th of March 2023 however they requested a hard copy as they are unable to print it out. • Good morning, can I please get a postal address to courier the hard copy to your department (23/03/2023). • Thank you for the acknowledgement upon receipt (23/03/2023)	Appendix E
SANRAL Ria Barkhuizen Tel No.: +27 12 426 6200 Email: NRStat@nra.co.za		13/07/2023	Prior mining commencement of mining access arrangements to R35 section 2 must be agreed with SANRAL. The intersection from where access is taken must be upgraded to SANRAL`s typical intersection layout.	Submitted a draft scoping report via courier for comments and review on the 1st of March 2023. Noted and a meeting will be held before any mining activities can be commenced.	Appendix E

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
Postal address: 38 IDA Street, Menlo Park 0081					
TRANSNET E-mail: yuza.Chabalala@transnet.net			No issued raised yet,	Submitted a draft scoping report via e-mail for comments and review on the 24th of March 2023.	
COMMUNITY (Lueewfontein)					
Schoeman farm	x	09/03/2023 (Face-face)	Why did you call a community meeting without informing all the community members. Who is the applicant? There are Graves close to this farm	Before the meeting was called, we had a communication with one of the community members wherein we agreed with him that he will inform all of you about the mass meeting, time, and venue. The applicant is Tornowize (Pty) Ltd, which is 100% black owned. The area has been mined before no new impact will be introduced to the	For meeting minutes, refer to appendix H.

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
			what will happen to them when the mine commences? Will this project create job opportunities and what will happen to the us?	environment, therefore the graves will not be disturbed. As it was indicated during SLP presentation that jobs will be created, and community members will be empowered through human resource development programmes. These programmes will focus on skills development, portable skills, learnerships, internships, bursaries, career progression, ABET training and mentorship training. In a nutshell the community will gain skills that will assist them when they want to look for jobs, start their own businesses and they will also become literate. For now, we cannot say we have a definite answer for that because relocating	

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
			When the project commerce's we request the applicant to build houses for us	people is not on the plan of the mine, but we are here so that community members can voice out their community needs in order for us to have a better understanding of the socio-economic needs of the community. We also encourage the community to have a mass meeting wherein they will have a chance to discuss the needs looking at what the community needs the most.	
			We want the applicant to assist us with transport for old age people when they go to collect their SASSA	Like we said go and have a meeting with all community members and discuss what you want from the applicant, after that inform us then we convey the request to the applicant. We will go back to our office	

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
			because the place is far. We want to have a meeting with the applicant in-order for him to commit to what is written in the SLP in our present, and we want to be provided with food, beverages, tent and chairs by the applicant during the meeting. We will not sign the register for now, maybe if we have a second meeting with presence of the applicant.	and try to arrange the meeting; further communication will be shared with the ward councillor, and he will rely on the massage back to the community regarding the meeting arrangements. We do not have a problem thank you for making time for us, we appreciate your time, we hope that when we meet again you would have reached a consensus.	

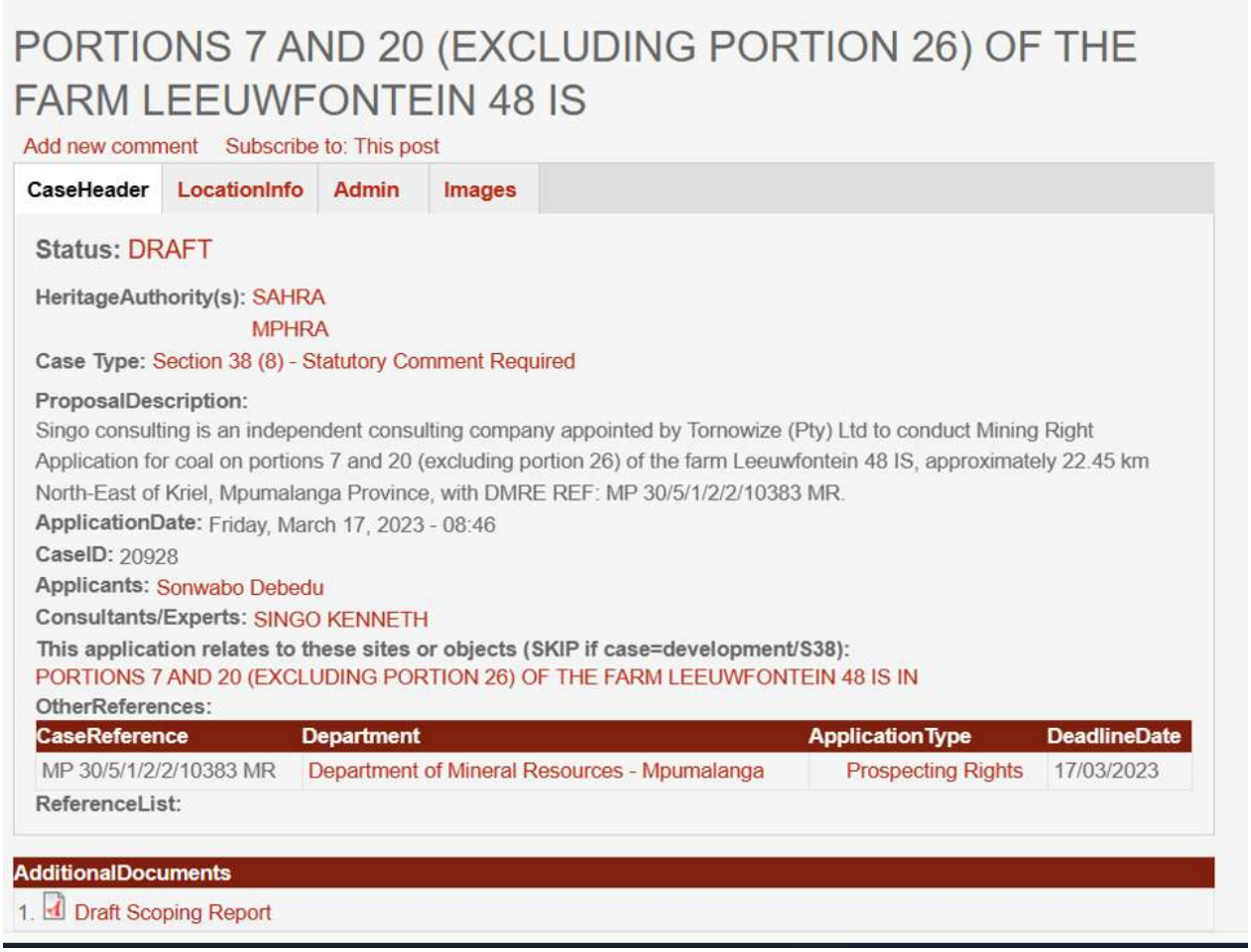
I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
INTERESTED AND AFFECTED PARTY					

Appendix C: Background Information Document (BID)

BID

Appendix D: Stakeholder Engagements

SAHRA



PORTIONS 7 AND 20 (EXCLUDING PORTION 26) OF THE FARM LEEUWFONTEIN 48 IS

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CaseHeader | LocationInfo | Admin | Images

Status: DRAFT

HeritageAuthority(s): SAHRA
MPHRA

Case Type: Section 38 (8) - Statutory Comment Required

ProposalDescription:
Singo consulting is an independent consulting company appointed by Tornowize (Pty) Ltd to conduct Mining Right Application for coal on portions 7 and 20 (excluding portion 26) of the farm Leeuwfontein 48 IS, approximately 22.45 km North-East of Kriel, Mpumalanga Province, with DMRE REF: MP 30/5/1/2/2/10383 MR.

ApplicationDate: Friday, March 17, 2023 - 08:46

CaseID: 20928

Applicants: Sonwabo Debedu

Consultants/Experts: SINGO KENNETH

This application relates to these sites or objects (SKIP if case=development/S38):
PORTIONS 7 AND 20 (EXCLUDING PORTION 26) OF THE FARM LEEUWFONTEIN 48 IS IN

OtherReferences:

CaseReference	Department	ApplicationType	DeadlineDate
MP 30/5/1/2/2/10383 MR	Department of Mineral Resources - Mpumalanga	Prospecting Rights	17/03/2023

ReferenceList:

AdditionalDocuments

1. Draft Scoping Report

Appendix E: Comments

MUNICIPALITY

Steve Tshwete
Local Municipality

PO Box 14 | Middelburg | 1050
Cnr Walter Sisulu Str & Wanderers Ave
Middelburg | Mpumalanga
T: +27 (0)13 249 7000 | F: +27 (0)13 243 2550
council@stlm.gov.za

Your reference:

Our reference: (3/2/4/1/7mn)

Tornowize (Pty) Ltd
Office no 870 Balaika Street
Tasbet Park Ext 2
Emalahleni
1035

Attention: Takalani Sikhitha

CONFIRMATION OF SOCIAL AND LABOUR PLAN PROJECTS 2023 - 2028

Reference is made to the above matter.

The municipality recommends that the following project, as identified through the community consultative process (IDP), be included in your SLP application,

a) Installation and commissioning of a back- up generator at the water treatment plant.

For any further information, please do not hesitate to contact the undersigned or Michael Nkosi at 013 – 249 7153 or michaeln@stlm.gov.za

Yours faithfully

Municipal Manager
Mr SM Mnguni
03 July 2023

DAFF

forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Pretoria, 0002 Tel: +27 12 399 9000, Fax: + 27 86 625 1042

Reference: MP 30/5/1/2/2/10383 MR
Enquiries: Ms M Rabothata / Mr K Mathetja
Telephone: (012) 399 9174 **E-mail:** MRabothata@environment.gov.za

Simangaliso Jiyane
Singo Consulting (Pty) Ltd
Office No. 870
5 Balalaika Street
Tasbet Park Ext 2
WITBANK
1040

Telephone Number: (+ 27) 13 692 0041
Email Address: simangaliso@singoconsulting.co.za

PER E-MAIL

Dear sir/madam

COMMENTS ON THE DRAFT SCOPING REPORT FOR COAL MINING RIGHT APPLICATION, INTEGRATED ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL AUTHORISATION PORTIONS 7 AND 20 (EXCLUDING PORTION 26) OF THE FARM LEEUWFONTEIN 48 IS IN THE MAGISTERIAL DISTRICT OF STEVE TSHWETE IN MPUMALANGA PROVINCE

The Directorate: Biodiversity Conservation has reviewed and evaluated the report and the proposed plan of study. The directorate does not have any objections with the proposed plan of study. It is recommended that the specialist investigations undertaken in accordance with the terms of reference established be submitted with the final scoping report.

All Public Participation Process documents related to Biodiversity EIA review and any other Biodiversity EIA queries must be submitted to the Directorate: Biodiversity Conservation at Email: BCAdmin@environment.gov.za for attention of **Mr Seoka Lekota.**

Yours faithfully

Mr. Seoka Lekota
Control Biodiversity Grade B Officer: Biodiversity Conservation

SANRAL

SANRAL

BUILDING SOUTH AFRICA THROUGH BETTER ROADS

Reference:	N11/1/R	Contact Person:	Mr. J Oliver
Date:	13 July 2023	Direct Line:	+27 (0) 12 426 6200
Email:	nrstat@nra.co.za	Website:	www.nra.co.za

Singo Consulting (Pty) Ltd

By email: admin@singoconsulting.co.za

Dear Sir / Madam

MINING RIGHT APPLICATION PORTIONS 7 AND 20 (EXCLUDING PORTION 26) OF THE FARM LEEUWFONTEIN 48 IS

DMRE REF: MP 30/5/1/2/2/10383 MR

The above-mentioned report prepared by Singo Consulting (Pty) Ltd and submitted to SANRAL for review and comment has reference.

Prior to mining commencement of mining access arrangements to the R35 Section 2 must be agreed to with SANRAL. The intersection from where access is taken must be upgraded to SANRAL's typical intersection layout.

Yours sincerely

Jenkins

STATUTORY CONTROL OFFICER: NORTHERN REGION

Northern Region 38 Ida Street, Menlo Park, 0081 | Postal Address: Private Bag X17, Lynwood Ridge, 0040 | Tel +27 (0) 12 426 6200 Fax +27 (0) 12 348 1680
Email info@sanral.co.za | Visit us at www.sanral.co.za

ESKOM

Rudzani, Radebe (RRS)

From: Nonkululeko Mafutsana <MafutsNZ@eskom.co.za>
Sent: Thursday, May 25, 2023 3:58 PM
To: Simangaliso Jiyane
Cc: kenneth@singoconsulting.co.za; rudzani@singoconsulting.co.za; zwivhuya@singoconsulting.co.za; mazithi@singoconsulting.co.za; thilivhali@singoconsulting.co.za
Subject: RE: [CAUTION:EXTERNAL EMAIL] RE: APPLICATION FOR THE REMOVAL OF ESKOM POWERLINE THAT IS NO LONGER IN OPERATION WITH THE PROPOSED MINING RIGHT APPLICATION WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good day Simangaliso

We can meet at Puckree's entrance at 13h30 tomorrow.

Regards
Nonkululeko

From: Simangaliso Jiyane <simangaliso@singoconsulting.co.za>
Sent: Thursday, 25 May 2023 15:15
To: Nonkululeko Mafutsana <MafutsNZ@eskom.co.za>
Cc: kenneth@singoconsulting.co.za; rudzani@singoconsulting.co.za; zwivhuya@singoconsulting.co.za; mazithi@singoconsulting.co.za; thilivhali@singoconsulting.co.za
Subject: RE: [CAUTION:EXTERNAL EMAIL] RE: APPLICATION FOR THE REMOVAL OF ESKOM POWERLINE THAT IS NO LONGER IN OPERATION WITH THE PROPOSED MINING RIGHT APPLICATION WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good day Nonkululeko,

In accordance with our telephone talk, I am still awaiting the scheduled time for our on-site meeting.

Kindly get back to us.

From: Simangaliso Jiyane <simangaliso@singoconsulting.co.za>
Sent: Thursday, May 25, 2023 8:57 AM
To: 'Nonkululeko Mafutsana' <MafutsNZ@eskom.co.za>
Cc: 'kenneth@singoconsulting.co.za' <kenneth@singoconsulting.co.za>; 'rudzani@singoconsulting.co.za' <rudzani@singoconsulting.co.za>; 'zwivhuya@singoconsulting.co.za' <zwivhuya@singoconsulting.co.za>;

'mazithi@singoconsulting.co.za' <mazithi@singoconsulting.co.za>; 'thilivhali@singoconsulting.co.za' <thilivhali@singoconsulting.co.za>
Subject: RE: [CAUTION:EXTERNAL EMAIL] RE: APPLICATION FOR THE REMOVAL OF ESKOM POWERLINE THAT IS NO LONGER IN OPERATION WITH THE PROPOSED MINING RIGHT APPLICATION WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good morning,

Please find the following as requested;

Pole number:
1098/5

The area: Leeuwfontein 48 IS, in Mpumalanga Province.
Co-ordinates: -26.152074, 29.445256

Looking forward to your prompt response.

From: Nonkululeko Mafutsana <MafutsNZ@eskom.co.za>
Sent: Wednesday, May 24, 2023 9:00 AM
To: Simangaliso Jiyane <simangaliso@singoconsulting.co.za>
Cc: kenneth@singoconsulting.co.za; rudzani@singoconsulting.co.za; Herry Ludere <LudereTH@eskom.co.za>
Subject: RE: [CAUTION:EXTERNAL EMAIL] RE: APPLICATION FOR THE REMOVAL OF ESKOM POWERLINE THAT IS NO LONGER IN OPERATION WITH THE PROPOSED MINING RIGHT APPLICATION WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good morning Simangaliso

May you kindly send the first pole number and the last and the area where that line is. You did not include this information on the form.

Please remove Herry on the list he is no longer in Distribution.

2

Regards
Nonkululeko

Disclaimer

From: Simangaliso Jiyane <simangaliso@singoconsulting.co.za>
Sent: Thursday, 04 May 2023 10:30
To: Nonkululeko Mafutsana <MafutsNZ@eskom.co.za>
Cc: kenneth@singoconsulting.co.za; rudzani@singoconsulting.co.za; Herry Ludere <LudereTH@eskom.co.za>; Wayleavesmou <Wayleavesmou@eskom.co.za>
Subject: [CAUTION:EXTERNAL EMAIL] RE: APPLICATION FOR THE REMOVAL OF ESKOM POWERLINE THAT IS NO LONGER IN OPERATION WITH THE PROPOSED MINING RIGHT APPLICATION WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good morning,

Receive greeting from Singo consulting.

I requested the removal of an eskom powerline that is currently inoperative and was allegedly utilized by a mining company in the past.

We kindly request for your assistance, prompt response will be appreciated.

From: Simangaliso Jiyane <simangaliso@singoconsulting.co.za>
Sent: Thursday, May 4, 2023 9:37 AM
To: 'Wayleavesmou' <Wayleavesmou@eskom.co.za>
Cc: 'kenneth@singoconsulting.co.za' <kenneth@singoconsulting.co.za>; 'rudzani@singoconsulting.co.za' <rudzani@singoconsulting.co.za>
Subject: APPLICATION FOR THE REMOVAL OF ESKOM POWERLINE THAT IS NO LONGER IN OPERATION WITH THE PROPOSED MINING RIGHT APPLICATION WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good day,

Kindly find attached completed form. **Please note that the main aim and purpose of this application is to remove the line that is mentioned in the application form.**

We look forward to your correspondence.

4

SASOL

Simangaliso Jiyane

From: Simangaliso Jiyane <simangaliso@singoconsulting.co.za>
Sent: Thursday, March 23, 2023 11:33 AM
To: 'Lekalakala, Seipati (RS)'
Cc: 'rudzani@singoconsulting.co.za'; 'kenneth@singoconsulting.co.za'
Subject: RE: INVITATION TO COMMENT ON THE DRAFT SCOPING REPORT FOR MINING RIGHT APPLICATION BY TORNOWIZE (PTY) LTD WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good morning,

Thank you for the acknowledgement upon receipt.

From: Lekalakala, Seipati (RS) <Seipati.Lekalakala@sasol.com>
Sent: Thursday, March 23, 2023 9:42 AM
To: Simangaliso Jiyane <simangaliso@singoconsulting.co.za>
Subject: RE: INVITATION TO COMMENT ON THE DRAFT SCOPING REPORT FOR MINING RIGHT APPLICATION BY TORNOWIZE (PTY) LTD WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good day,

We did receive your application via Stanley Brace was send by Botha..we will respond

From: Simangaliso Jiyane <simangaliso@singoconsulting.co.za>
Sent: Thursday, March 23, 2023 8:44 AM
To: Gas-Sherq <wayleaves@sasol.com>
Cc: Lekalakala, Seipati (RS) <Seipati.Lekalakala@sasol.com>
Subject: RE: INVITATION TO COMMENT ON THE DRAFT SCOPING REPORT FOR MINING RIGHT APPLICATION BY TORNOWIZE (PTY) LTD WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good morning,

Can I please get a postal address to courier the hard copy to your department.

1

From: Mamba, Zodwa Getrude (ZG) <Zodwa.Mamba@sasol.com> **On Behalf Of** Gas-Sherq
Sent: Thursday, March 16, 2023 8:25 AM
To: Simangaliso Jiyane <simangaliso@singoconsulting.co.za>
Cc: Lekalakala, Seipati (RS) <Seipati.Lekalakala@sasol.com>
Subject: RE: INVITATION TO COMMENT ON THE DRAFT SCOPING REPORT FOR MINING RIGHT APPLICATION BY TORNOWIZE (PTY) LTD WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good morning,
We need to print this attachment but are unable to. Please send it in a way we would be able to print it.
REGARDS

Have A Great Day!

Zodwa Nkanyezi Mamba
Sasol Roas

Administrator Process Gas Pipeline / Inland Operations: Integrity & CP

Tel +27 10 345 8593
Mobile +27 71 673 7882
E-mail Zodwa.mamba@sasol.com

SASOL

20 Idianapolis Boulevard , raceway Industrial park, Gosforth Park, Germiston

From: Simangaliso Jiyane <simangaliso@singoconsulting.co.za>
Sent: Wednesday, March 15, 2023 8:23 AM
To: Gas-Sherq <wayleaves@sasol.com>
Cc: 'Rudzani, Radebe (RRS)' <rudzani@singoconsulting.co.za>; 'Dr Kenneth, Singo' <kenneth@singoconsulting.co.za>; 'Lesego, Montshiwa' <lesego@singoconsulting.co.za>; 'Valentine, Mhlanga' <valentine@singoconsulting.co.za>
Subject: INVITATION TO COMMENT ON THE DRAFT SCOPING REPORT FOR MINING RIGHT APPLICATION BY TORNOWIZE (PTY) LTD WITH DMRE REF: MP 30/5/1/2/2/10383 MR.

Good day,

2

Receive warm greetings from Singo Consulting (Pty) Ltd.

Kindly find and review the attached Draft Scoping Report for proposed Mining Right application for **coal** on portions 7 and 20 (excluding portion 26) of the farm Leeuwfontein 48 IS, under Magisterial District of **Steve Tshwete** in **Mpumalanga Province,(DMRE REF: MP 30/5/1/2/2/10383 MR).**

Kindly receive this report to review and forward any comments to be incorporated into the final Scoping Report that will be submitted to the DMRE.

Note that the document is encrypted to prevent unauthorized access and distribution, kindly use the following pin for access: **SC2012**

NOTICE: This eMail message is from Sasol and is for the sole use of the intended recipient(s), and may contain confidential and/or privileged material.
If you are not the intended recipient(s), please contact the sender immediately, and destroy all copies of the original message. Any unauthorized review, use, copy, disclosure or distribution is prohibited. Please note that this eMail, and the contents thereof, is also subject to the standard Sasol eMail Legal Notice which may be found at: http://www.sasol.com/legal-notices.

Appendix F: DMRE letters

Acceptance letter

mineral resources
& energy
Department
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag X7279, Witbank, 1035, Tel: 013 653 0500, Fax 086 605 6894
Saveways Crescent Centre, First Floor, Mandela Drive, Witbank, 1035
Directorate: Mineral Regulation: Mpumalanga Region
Email:Lerato.Santho@dmre.gov.za
Subdirectorate: Mineral Laws **Enquiries:** L C Mariri **File Ref:** MP 30/5/1/2/2/10383MR

REGISTERED MAIL

The Directors
Tornowize (Pty)Ltd
P O Box 1035
River Crescent
Die Heuwel
Gauteng
1047

Fax/ Email: sonwabo@tornowize.co.za

Dear Sir/Madam

APPLICATION FOR MINING RIGHT IN TERMS OF SECTION 22 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002) [HEREIN AFTER REFERRED TO AS THE ACT] AS AMENDED BY SECTION 18 OF THE MINERALS AND PETROLEUM RESOURCES DEVELOPMENT AMENDMENT ACT, 2008 (ACT 49 OF 2008) [HEREINAFTER REFERRED TO AS THE AMENDMENT ACT]: PORTION 9 OF THE FARM BANKFONTEIN 215 IS, SITUATED IN THE MAGISTERIAL DISTRICT OF MIDDELBURG.

1. I refer to the abovementioned matter and confirm that your application for a mining right in terms of section 22(2) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) as amended by section 18 of the Amendment Act 2008 (Act 49 of 2008) has been accepted .

2. In terms of Section 18(4) (a) and(b) as amended, you are required to submit:

2.1 The required environmental reports and documents as stipulated at your acknowledgement of receipt of an environmental authorisation in this regard.

2.2 In light of the minimum requirements as stipulated on Regulation 16(1) and 16(2) of the EIA Regulations, your application for an Environmental Authorisation was incomplete as it was not accompanied by this acceptance letter as per Sub Regulation 16(1)(ix) and considering that it is now completed by this acceptance letter, you are hereby required to submit the documents as stipulated on Regulation 19(1) to 19(8) of the EIA Regulations(only in cases where Basic Assessment Report is applicable) or Regulations 21 (Scoping Report) and Regulation 23 (EIR and EMPr) (In case of Scoping Report).All timeframes are effective from the date of this letter

3. To notify and in writing consult with the landowner (s) or lawful occupier(s) and all interested and affected parties (I and AP) and upload the results of such consultation within 180 days from the date of this letter.

4. Should the land be owned by the communities of a Trust on Behalf of the community, a proper and thorough consultation process must be engaged upon and a legitimate Tribal Resolution or consent must be obtained from the Traditional Authority/ Council or Trust and be submitted with the results consultation.

5. In other for your application to comply with the ownership element in your prospecting right in furthering the objects of Section 2(d) read together with Mining Charter, your shareholding must achieved the target which is the minimum of 30% BEE shareholding in terms of the 2018 Charter and must be distributed in the following manner:

   (i) A minimum of 5% non-transferable carried interest to qualifying employees from the effective date of a mining right.
   (ii) A minimum of 5% non-transferable carried interest or minimum 5% equity equivalent benefit as defined herein to host communities from the effective date.
   (iii) A minimum of 20% effective ownership in the form of shares to a BEE which Entrepreneur , 5% of which must preferably.

You are therefore urged to consider aligning your shareholding with the 2018 Charter.

6. You are advised to apply for water use licence from the Department of Water and Sanitation.

Do not hesitate to contact us, should you need clarity

Yours faithfully

REGIONAL MANAGER
MPUMALANGA REGION
DATE: ...09/02/2023

TORNOWIZE (PTY)LTD: MINING RIGHT ACCEPTANCE: 10383MR

SCOPING ACCEPTANCE

mineral resources & energy
Department
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag X7279, Emalahleni, 1035, Tel: 013-653 0500, Fax: (013) 656 0932
Saveways complex, Mandela Streets, Witbank, 1035
Enquiries: Ms Martha Seshweni **Ref:** MP 30/5/1/2/3/2/1(10383) EM
E-Mail Address: Martha.seshweni@dmr.gov.za
Sub-Directorate: Mine Environmental Management

Registered Mail
The Directors
50 Toerien Street
Klipfontein
Emalahleni
1035

Attention: Mr Sonwabo Debedu **Fax**:086 514 4103

ACCEPTANCE OF SCOPING REPORT IN TERMS OF REGULATION 22 OF THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS 20014, IN RESPECT OF THE LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY THE APPLICATION, ON PORTION 7N AND 20 EXCLUDING PORTION26 OF THE FARM LEEUWFONTEIN 48 IS, WITHIN THE MAGISTERIAL DISTRICT OF MIDDELBURG, MPUMALANGA REGION.

The Scoping Report (SR) and Plan of Study for Environmental Impact Assessment received by the Department on 23 March 2023 refers:

1. The Department has evaluated the submitted SR and Plan of Study for Environmental Impact Assessment dated 23 March 2023 and is satisfied that the documents comply with the minimum requirements of Appendix 2(2) of National Environmental Management Act, 1998 (as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations, 2014. The SR is hereby accepted by the Department in terms of regulation 22(a) of the NEMA EIA Regulations, 2014.

2. You may proceed with the environmental impact assessment process in accordance with the tasks contemplated in the Plan of Study for Environmental Impact Assessment as required in terms of the NEMA EIA Regulations, 2014.

3. It should be noted that the Department requires the following to be undertaken and form part of the final EIR and EMPr to be submitted.

a) All the activities to be undertaken on site must be described and the impacts that they will have on the physical, biological, social, economic and cultural aspects of the environment must be assessed
b) A description of the impact management objectives, including management statements identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all of phases of the development and the method of monitoring of the implementation of the impact management actions.
c) Feasible and reasonable alternatives based on the different types/categories of alternatives must be identified and assessed, so that the Department can be able to make an informed decision.
d) Public Participation Process must be transparent and all comments received during the process must be incorporated into the comments and response report of the final Environmental Impact Report.
e) Proof of correspondence with the various stakeholders must be included in the EIAR. Should you be unable to obtain comments, proof of the attempts that were made to obtain comments should be submitted to the Department
f) All comments from interested and affected parties must be adequately addressed in the final Environmental Impact Report.
g) For linear activities such as roads and pipelines, a description of the co-ordinates of the corridor in which the proposed activities are to be undertaken. The impacts of these linear activities must be thoroughly assessed.
h) A motivation for the need and desirability of the project must be included.
i) The financial provision calculation to be provided must distinguish the liability for the existing and for the proposed mining activities

4. The applicant is hereby reminded to comply with the requirements of regulation 3 of the EIA Regulations, 2014 with regards to the time period allowed for complying with the requirements of the Regulations.

5. Please ensure that the EIAR includes the A3 size locality maps of the area and illustrates the exact location of the proposed development. The maps must be of acceptable quality and as a minimum, have the following attributes:
   - Maps that are relatable to one another;
   - Co-ordinates;
   - Legible legends;
   - Alternatives;
   - Scale and
   - Vegetation types of the study area.

6. You are requested to submit two (2) hard copies of the EIAR and EMPr and at least one electronic copy (CD/USB) of the complete EIAR and EMPr to this Regional Office.

7. Your attention is brought to Section 24F of the NEMA which stipulates "that no activity may commence prior to an environmental authorisation being granted by the competent authority".

Yours faithfully

.....

REGIONAL MANAGER: MINERAL REGULATION

MPUMALANGA REGION

DATE....16/05/2023

CC Attention: Rudzane Radebe Shonisani

Appendix G: Municipality supporting letter

Steve Tshwete
Local Municipality

PO Box 14 | Middelburg | 1050
Cnr Walter Sisulu Str & Wanderers Ave
Middelburg | Mpumalanga
T: +27 (0)13 249 7000 | F: +27 (0)13 243 2550
council@stlm.gov.za

Your reference:

Our reference: (3/2/4/1/7mn)

Tornowize (Pty) Ltd
Office no 870 Balaika Street
Tasbet Park Ext 2
Emalahleni
1035

Attention: Takalani Sikhitha

CONFIRMATION OF SOCIAL AND LABOUR PLAN PROJECTS 2023 - 2028

Reference is made to the above matter.

The municipality recommends that the following project, as identified through the community consultative process (IDP), be included in your SLP application,

a) Installation and commissioning of a back- up generator at the water treatment plant.

For any further information, please do not hesitate to contact the undersigned or Michael Nkosi at 013 – 249 7153 or michaeln@stlm.gov.za

Yours faithfully

Municipal Manager
Mr SM Mnguni
03 July 2023

Appendix H: Meeting Minutes

Singo Consulting (Pty) Ltd

MEETING WITH SCHOEMAN FARM COMMUNITY MEMBERS & CONSULTING FIRM (SINGO CONSULTING)

Date: 09/03/2023

Time: 15h30

Venue: Schoeman farm

Attendee:

Community

Councillor

Agenda:

Singo Consulting (Pty) Ltd on behalf of **Tornowize (Pty) Ltd** informed the Community and the Councillor about the Mining Right activities, how it will impact the environment and the local socio-economic development.

Presentation by Simangaliso and Takalani (Singo Consulting)
Singo Consulting is an independent company, we do not take side of our applicant, DMRE or community we act independent what we do we take information from different stakeholders or interested and affected parties so that we can make a well-informed basic assessment report, taking views from different stakeholders. Singo Consulting is here to do proper consultation, DMRE will be the competent authority to give an environmental authorization or refuse environmental authorization. The meeting covered, NEMA regulation in terms of Public Participation Process, Type of Activity, Environmental Impacts, Social and Labour Plan and mitigation measures planned.
Questions and Answers
Issue raised by community members
Why did you call a community meeting without informing all the community members.
Response by Simangaliso
Before the meeting was called , we had a communication with one of the community members wherein we agreed with him that he will inform all of you about the mass meeting, time, and venue.
Issue raised by community members
Who is the applicant?
Response by Takalani

1

Singo Consulting (Pty) Ltd

The applicant is Tornowize (Pty) Ltd, which is 100% black owned.
Issue raised by Community Members
There are Graves close to this farm what will happen to them when the mine commences?
Response by Simangaliso
• The area has been mined before no new impact will be introduced to the environment, therefore the graves will not be disturbed.
Issue raised by Community members
Will this project create job opportunities and what will happen to the us?
Response by Takalani
• As it was indicated during SLP presentation that jobs will be created, and community members will be empowered through human resource development programmes. • These programmes will focus on skills development , portable skills, learnerships, internships, bursaries, career progression, ABET training and mentorship training. • In a nutshell the community will gain skills that will assist them when they want to look for jobs, start their own businesses and they will also become literate.
Issue raised by Community Members
When the project commerce's we request the applicant to build houses for us
Response by Simangaliso
• For now, we cannot say we have a definite answer for that because relocating people is not on the plan of the mine, but we are here so that community members can voice out their community needs in order for us to have a better understanding of the socio-economic needs of the community. • We also encourage the community to have a mass meeting wherein they will have a chance to discuss the needs looking at what the community needs the most.
Issue raised by Community Members
We want the applicant to assist us with transport for old age people when they go to collect their SASSA because the place is far
Response by Takalani
• Like we said go and have a meeting with all community members and discuss what you want from the applicant, after that inform us then we convey the request to the applicant.
Issue raised by Community members
We want to have a meeting with the applicant in-order for him to commit to what is written in the SLP in our present, and we want to be provided with food, beverages, tent and chairs by the applicant during the meeting.
Response by Simangaliso

2

Singo Consulting (Pty) Ltd

We will go back to our office and try to arrange the meeting; further communication will be shared with the ward councillor, and he will rely on the massage back to the community regarding the meeting arrangements.
Issue raised by Community members
We will not sign the register for now, maybe if we have a second meeting with presence of the applicant we would
Response by Simangaliso
We do not have a problem thank you for making time for us, we appreciate your time, we hope that when we meet again you would have reached a consensus.
Way forward
Next meeting will be held with the presence of the applicant as per the community request.
End-of-Minutes

3

Singo Consulting (Pty) Ltd

Appendix 1: Pictures of the meeting

----------THE END----------