PROPOSED SILTY SAND AND QUARTZITIC SANDSTONE PEBBELS MINE ON A PORTION OF PORTION 2 OF THE FARM BONNE ESPERANCE 83, TULBAGH, WESTERN CAPE PROVINCE

DRAFT BASIC ASSESSMENT REPORT

NOVEMBER 2024

REFERENCE NUMBER: WC30/5/1/3/2/10352MP

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EXECUTIVE SUMMARY

The Applicant, Power Construction (Pty) Ltd has applied for environmental authorization (EA) and a mining permit to extract silty sand and quartzitic sandstone pebbles from Portion 2 of the Bonne Esperance Farm 83 in Tulbagh, Western Cape Province. The proposed mining operation spans approximately 5 hectares over an undisturbed area of the farm, which is occasionally used for agricultural purposes.

The mining activity is planned to supply construction materials to regional projects, including the Berg and Zen Wind Farms, as well as other infrastructure developments in the Gouda and Tulbagh areas. The operation is anticipated to last a minimum of two years, with an option for an additional three-year extension. Earth-moving equipment will be used to excavate the in-situ materials, which will be hauled to an on-site mobile crushing and screening plant for processing into various grades. Once processed, materials will be stockpiled and subsequently transported to clients via tipper trucks. All activities will occur within the boundaries specified in the mining permit.

This project aims to enhance the local construction supply chain, supporting ongoing and future infrastructure projects in the area. By establishing a reliable local source of high-quality construction materials, the borrow pit will help reduce transportation costs, improve efficiency, and contribute to the economic growth and development of the region.

The proposed project triggers listed activities in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and the Environmental Impact Assessment Regulations 2014 (as amended 2017) and therefore requires an environmental impact assessment (basic assessment process) that assess project specific environmental impacts and alternatives, consider public input, and propose mitigation measures, to ultimately culminate in an environmental management programme that informs the competent authority (Department of Mineral Resources and Energy) when considering the environmental authorisation. This report, the Draft Basic Assessment Report, forms part of the departmental requirements and presents the first report of the EIA process.

Site Alternative 1 (Preferred and Only Site Alternative):

Site Alternative 1 (S1) (Preferred Alternative and only site alternative): The applicant has applied for a 5-hectare mining permit to extract silty sand and quartzitic sandstone pebbles on Portion 2 of the farm Bonne Esperance 83, located in Tulbagh, Western Cape Province. The proposed mining site is situated on an undisturbed area of the farm, which is currently used for wheat fields and occasional cattle grazing. This location was chosen as the preferred site due to its minimal disturbance to active

farming areas and its natural concentration of high-quality sandstone pebbles, essential for the project.

Alternative areas on the farm were considered but found unsuitable due to environmental and agricultural concerns. These areas either support sensitive renosterveld vegetation or have better agricultural potential, making them less appropriate for mining activities. Additionally, they lack the quality and concentration of sandstone pebbles required, further confirming Site Alternative 1 as the most viable and preferred option.

An alternative layout for the borrow pit, has been assessed in the pre application phase – Site Alternative 2 but not found viable as explained below.

Site Alternative 2:

Site Alternative 2 (S2) was evaluated for the proposed mining activity but was found unsuitable due to environmental and practical concerns. Unlike Site Alternative 1, which is located on an inactive part of the farm used for wheat fields and occasional cattle grazing, Site Alternative 2 lacks both the environmental stability and the concentration of high-quality silty sand and quartzitic sandstone pebbles required for the project.

While technically feasible to develop a borrow bit at Site Alternative 2, the associated environmental impact and potential disturbances are significantly higher, with no substantial benefit justifying the use of this site over Site Alternative 1. Therefore, Site Alternative 1 remains the only viable option, offering minimal ecological disruption and ample resources necessary for mining activities.

No-go Alternative:

The removal of silty sand and quartzitic sandstone pebbles from the borrow pit will provide a reliable source of construction materials for nearby infrastructure projects, including the Berg and Zen Wind Farm projects and other regional developments. Establishing this borrow pit will contribute to the upgrading and maintenance of infrastructure in the Gouda and Tulbagh areas, creating efficiencies and reducing supply chain costs for construction projects. Without this local source, the construction industry would face limited supply options, potentially driving up costs due to longer transportation distances and reduced material diversity. Utilizing the borrow pit resources can therefore play a vital role in supporting regional growth and sustainability, reducing construction timelines, and making infrastructure development more cost-effective.

Public Participation Process:

In accordance with the timeframes stipulated in the EIA Regulations, as amended, the Draft Basic Assessment Report was compiled and will be distributed for comment and perusal to the I&AP's and stakeholders. A 30-day commenting period, ending 14 January 2025, will be allowed for perusal of the documentation and submission of comments. The comments received on the DBAR will be incorporated into the Final Basic Assessment Report (FBAR) to be submitted for decision making to DMRE.

During this public participation process the relevant stakeholders and I&AP's were informed of the project by means of an advertisement in Witzenberg Herald on 15 November 2024, and two on-site notices will be placed at visible locations, one on the farm boundary fence at the entrance, and another at the at the Gouda Public Library.

Basic Assessment Report:

The basic assessment report identifies the potential positive and negative impacts that the proposed activity will have on the environment and the community as well as the aspects that may impact on the socio-economic conditions of directly affected persons and proposes possible mitigation measure that could be applied to modify / remedy / control / stop the identified impacts.

The key finding of the environmental impact assessment entail the following:

Topography:

- The natural topography of the proposed excavated area can be described lies in a region characterized by diverse topography, encompassing flat plains, rolling hills, and mountainous terrain. Positioned near the foothills of the Obiekwa and Winterhoek mountain ranges, Gouda is situated within the Breede River Valley, a notable geographic feature known for its fertile agricultural land and scenic landscapes.

- The area surrounding Gouda predominantly consists of low-lying, gently undulating plains which are utilized extensively for agriculture, especially for grain farming and vineyards. These plains are bordered by steep, rugged mountains that rise dramatically from the valley floor, creating a picturesque contrast and adding to the area's scenic value. The topography is also shaped by the Berg River, which flows northward and provides an essential water source, supporting both agricultural and ecological needs in the region.

- The site lies at an elevation of approximately 100 meters above sea level. This elevation places it within the relatively low-lying Breede River Valley, which is bordered by dramatic mountainous terrain

that influences the region's microclimates and landscape. The valley itself is characterized by flat to gently rolling plains, ideal for agriculture, with fertile soils supporting extensive grain farming and vineyards.

- The surrounding landscape includes the Obiekwa and Winterhoek mountain ranges to the east, with peaks reaching elevations of up to 1,500 meters above sea level, creating a stark contrast to the lowland plains where Gouda is situated. To the west of Gouda, the terrain begins to rise gradually as it approaches the foothills of the Elandskloof Mountains, with elevations climbing to around 500 meters above sea level. This varied elevation results in a range of slopes and microclimates that are essential to the agricultural productivity of the area.

- The Berg River, an important water source for agriculture, traverses the region and supports the unique ecosystems associated with this topography. The mixture of lowland plains and mountainous areas, along with the river valleys, creates a distinct and diverse landscape that shapes the economic and ecological characteristics of Gouda and its surrounding areas in the Western Cape.

Visual Characteristics:

- The viewshed analysis indicated that the proposed mining operation for silty sand and quartzitic sandstone pebbles will have a low visual impact. Although the mining area will be visible from the public road (R44), approximately 2.5 km away, the temporary nature and small scale of the excavation activities mean that the impact will be minimal. The mining will involve equipment similar to that used in farming operations, further blending into the agricultural landscape. Following successful rehabilitation of the site upon closure of the mine, no lasting visual impact is anticipated.

Air and Noise Quality:

- The proposed activity will contribute the emissions mechanical mining equipment to the receiving environment for the duration of the operational phase. Should the permit holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use. The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the traffic of the surrounding area.

Geology and Soil:

- The geology of the proposed borrow pit site is primarily composed of phyllite shale, schist, and greywacke from the Porterville Formation within the Malmesbury Group. Some areas are covered by alluvium, terrace gravel, and talus deposits on the midslopes. The site's soil classification falls within

the Db48 land type, characterized by moderately deep, medium-textured soils with a fairly uniform composition. These soils are generally suited for rainfed crop production but have limitations such as a high stone content, which reduces their water-holding capacity and may impact productivity in drier periods.

- According to the Agriculture Assessment Report (Appendix M), the specialist concluded that with effective mitigation measures, including careful soil management, erosion control, and post-mining rehabilitation, the impact on agricultural productivity can be minimized. These steps are essential to restoring the land for agricultural use and preserving its economic and ecological value within the region. Overall, while the proposed mining activities may temporarily alter the agricultural landscape, proper rehabilitation and management will allow for the sustainable use of the land in the future. Therefore, from an agricultural impact point of view, it is recommended that the development be approved.

Hydrology:

- The proposed application falls within a critical hydrological region characterized by its proximity to the Berg River, a key water resource that supports agriculture, industry, and ecological needs. The Department of Water and Sanitation (DWS) classifies the area within the Berg-Olifants Water Management Area (WMA), one of South Africa's primary water management regions. This WMA is managed to ensure sustainable water supply and quality, balancing the needs of urban development, agriculture, and conservation.

- The Berg River, originating in the Franschhoek Mountains and flowing northward, is the primary catchment area for Gouda. This river and its tributaries serve as an essential source of water, with Gouda specifically located within the Lower Berg sub-catchment. Water flow in this region is seasonal and influenced by winter rainfall, contributing to the river's variable flow rates and necessitating efficient water management.

- The proposed project does require a Water Use Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No 36 of 1998). As per the Risk Matrix Assessment (please see Appendix M1). The assessment process indicated low-risk impacts, it's crucial to note that it was conducted without on-site verification. Given the potential for unforeseen ecological consequences, particularly regarding vegetation disturbance, water quality degradation, and sediment runoff, a cautious approach is necessary.

- Although the project may qualify for General Authorisation, it is imperative to implement robust mitigation measures and consider additional on-site verification to minimize environmental impact and ensure sustainable development. A non-prioritised man-made wetland is located within 500m of the

site. This wetland appears to be a small dam system considering the surrounding landscape characteristics, it is possible that the wetland system could extend into the site footprint. Although the extensive history of agricultural farming on the site would suggest that the wetland unit is likely to be highly degraded. Any water required for the implementation of the project will be sourced from a registered source and transported to site. Water required for the implementation of the project will be sourced from an authorised source and transported to site. Additionally, the farm owner has implemented stormwater management trenches alongside the crop fields, which border the proposed mining area. These trenches effectively manage stormwater flow and prevent runoff from affecting the mining site. Consequently, the mining activities will have no impact on these stormwater systems or surrounding agricultural land.

- All water required for the project will be sourced from an authorised source and transported to the site. This approach and the absence of nearby water impacts were confirmed by the Risk Matrix Assessment (refer to Appendix M1).

Mining, Biodiversity and Groundcover:

- Ground-truthing confirmed that the proposed mining footprint is located in an undisturbed and inactive area of the farm, currently used for wheat fields and occasional cattle grazing. This area has low agricultural potential due to its rocky surface, making it suitable for mining. Access to the mining site will be provided via an existing gravel road off the R44, with an additional entrance road of approximately 250 meters and internal haul roads to be constructed for site access. Haul roads will be extended as open-cast mining progresses and will be rehabilitated as part of the final site reinstatement.

- Trucks transporting materials will use the R44 for deliveries. With the applicant's commitment to implementing the mitigation measures proposed in the Environmental Management Programme (EMPr), the impact on vegetation and ground cover, as well as on current wheat and grazing activities, is anticipated to be of low significance.

Fauna

- Various small mammals and reptiles are likely to occur on the property. The fauna at the site will not be impacted by the proposed mining activities as they will be able to move away or through the site, without being harmed. Workers should be educated and managed to ensure that no fauna at the site is harmed. At this stage no resident protected or red data faunal species could be identified within the earmarked footprint. If the mining permission is approved, the farm owner will be contacted before the start of any activities to ensure the safety of the workers and the animals on the site. Workers will be informed and managed to ensure that no fauna at the site is harmed. The proposed mining area

has previously been used for cattle grazing; however, to prevent any potential incidents, the farm owner has agreed to move the cattle out of this area prior to the start of mining activities. This measure will help ensure the safety of both the cattle and workers on-site. No poaching or hunting of animals will be allowed. All construction vehicles must adhere to a low-speed limit (<40km/h) to avoid collisions with susceptible species such as snakes and tortoises. Trenches and deep excavations should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench.

Cultural and Heritage Environment:

Should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the surrounding area in general is deemed to be of low significance. In light of this, a Heritage Impact Assessment was not deemed necessary by the heritage specialist.

Site Specific Infrastructure:

No infrastructure has been established on the property that can be affected by the proposed development.

During the environmental impact assessment process, the feasibility of the proposed site was assessed to identify fatal flaws that are deemed as severe as to prevent the activity continuing or warrant a site or project alternative. The outcome of the assessment showed that should the mitigation measures and monitoring programmes proposed in this document be implemented, no fatal flaws could be identified that prevents the activity continuing.

Environmental Management Programme (EMPR)

The EMPR provides a description of the impact management outcomes and closure objectives. It presents the impacts to be mitigated in their respective phases as well as stipulates the mitigation measures to be applied on site.

The financial provision amount that will be necessary for the rehabilitation of damages caused by the operation, both sudden closures during the normal operation of the project and at final, planned closure gives a sum of R 206 265,35.

LIST OF ABBREVIATIONS

BGIS	Biodiversity GIS
ABSA	Aquatic Biodiversity Specialist Assessment
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Area
DBAR	Draft Basic Assessment Report
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DMRE	Department of Mineral and Resources and Energy
DoT	Department of Transport
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIA Regulations	Environmental Impact Assessment Regulations, 2014 (as amended 2017)
EISC	Ecological Importance and Sensitivity Category
EMPR	Environmental Management Programme
FBAR	Final Basic Assessment Report
FEL	Front-end-loader
FSBP	Western Cape Biodiversity Plan
GDP	Gross Domestic Product
GNR	Government Notice
I&AP's	Interested and Affected Parties
MHSA	Mine Health and Safety Act, 1996 (Act No. 29 of 1996)
MP	Mining Permit
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM: AQA	National Environmental Management: Air Quality Control Act, 2004 (Act No. 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM: WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
NRTA	National Road Traffic Act, 1996 (Act No. 93 of 1996)

NWA	National Water Act, 1998 (Act No. 36 of 1998)
PCB’s	Polychlorinated Biphenyl
PCO	Pest Control Officer
PPE	Personal Protective Equipment
PSM	Palaeontological Sensitivity Map
RA	Risk Assessment
REC	Recommended Ecological Category
S1	Site Alternative 1
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SAMBF	South African Mining and Biodiversity Forum
USBM	US Bureau of Mines
WMA	Water Management Area
WULA	Water Use Licence Application

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ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATION IN TERMS OF THE NATIONAL ENVIRONMENTAL ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT:	Power Construction (Pty) Ltd
TEL NO:	Tel: 021 907 1374
FAX NO:	N/A
POSTAL ADDRESS:	PO Box 129, Blackheath 7580
PHYSICAL ADDRESS:	Corner of Strand (R102) and Wimbledon Roads, Blackheath
FILE REFERENCE NUMBER SAMRAD:	WC30/5/1/3/2/10352MP

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 29 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 can be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

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

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

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

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

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

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

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

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

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

  (ii) the degree to which these impacts –

    (aa) can be reversed.

    (bb) may cause irreplaceable loss of resources; and

    (cc) can be managed, avoided or mitigated.

(e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to –

  (i) identify and motivate a preferred site, activity and technology alternative.

  (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and

  (iii) identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. CONTACT PERSON AND CORRESPONDENCE ADDRESS

a) Details of: Greenmined Environmental

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) the proponent must appoint an independent Environmental Assessment Practitioner (EAP) to undertake the Environmental Impact Assessment (EIA) of any activities regulated in terms of the Act. Power Construction (Pty) Ltd appointed Greenmined Environmental to undertake the study needed. Greenmined Environmental has no vested interest in Power Construction (Pty) Ltd or the proposed project and declares its independence as required by the Environmental Impact Assessment Regulations, 2014 (as amended April 2017) (EIA Regulations).

i) Details of the EAP

Name of the Practitioner:	Mrs Sonette Smit (Senior Environmental Consultant)
Tel No.:	021 851 2673
Fax No.:	086 546 0579
E-mail address:	sonette.s@greenmined.co.za
EAP Registration No:	2020/2467

ii) Expertise of the EAP.

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

Mrs. S Smit has sixteen years of experience in environmental legal compliance audits, (GIS) geographic information system, mining right and permit applications and applications for environmental authorisations & Water use applications. Please find full CV attached in Appendix K.

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

Sonette Smit is an Environmental Consultant with 17 years' experience in the environmental sector. She specialized in the last 12 years in the mining sector where she conducted mining related reports and programs. She has also been involved in several other environmental and water use application projects where

she compiled environmental management plans, environmental impact assessments, environmental audits, IWULA's/IWWMP's.

Mrs. S Smit is a registered Environmental Assessment Practitioner (registration no: 2020/2467) with EAPASA (Environmental Assessment 19 Practitioners Association of South Africa) since 2020. See a list of past projects attached as Appendix K.

b) Location of the overall Activity.

Table 1: Location of the proposed project.

Farm Name:	Portion 2 of the farm Bonne Esperance 83, Tulbagh, Western Cape Province.
Application area (Ha)	5 ha
Magisterial district:	Tulbagh
Distance and direction from the nearest town	±11 km northwest of Gouda. Using the R44, head northwest for approximately 11.2km. Turn right on the gravel road towards Naledi Resort. Continue for 3.1km. The entrance to the proposed mining area will be found on the right.
21-digit Surveyor General Code for each farm portion	C07500000000008300002

c) Locality map

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

The requested map is attached as Appendix B.

Figure 1: Satellite view of the proposed mining permit area (red polygon) of Power Construction (Pty) Ltd (image obtained from Google Earth).

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

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

Power Construction (Pty) Ltd applied for a mining permit to mine 5 ha of a portion of portion 2 of the farm Bonne Esperance 83, Tulbagh, Western Cape Province.

The proposed mining footprint will be 5 ha and will be developed over an inactive area of the farm occasionally used for agriculture (wheat fields / cattle grazing). The mining method will make use of loading insitu material by means of earth moving equipment. Areas to be opened at any given time will be approximately 1 – 1,5ha whereafter it will be rehabilitated before moving on to the next section. The material will be loaded and hauled to the mobile crushing / screening plant where it will be screened to various sized stockpiles and transported to clients via tipper trucks. The silty sand and quartzitic sandstone pebbles will be stockpiled until it is transported from site. All mining related activities will be contained within the approved mining permit boundaries.

The proposed mining area is approximately 5 ha is extent and the applicant, intents to win material from the area for at least 2 years with a possible extension of another 3 years. The silty sand and quartzitic sandstone pebbles to be removed from the borrow pit will be used for construction industry in the vicinity by providing material to the Berg and Zen Wind Farm projects and other related and non-related projects in the area. The proposed borrow pit will therefore contribute to the upgrading / maintenance of infrastructure and building contracts in and around the Gouda / Tulbagh area.

The mining activities will consist out of the following:

- Stripping and stockpiling of topsoil (whatever minimal soil material can be stripped from the rocky terrain);
- Excavating / Loading of insitu material;
- Crushing and screening;
- Stockpiling and transporting;
- Sloping and landscaping upon closure of the site; and replacing the topsoil (whatever minimal soil material can be stripped from the rocky terrain).

The mining site will contain the following:

- Excavating / loading equipment;
- Earth moving equipment;
- Mobile Crushers;
- Access Roads;
- Site office (Container);
- Site vehicles;
- Parking area for visitors and site vehicles;
- Ablution facilities (Chemical toilets).

The proposed project will not require any additional electricity connections, as power will be supplied, when needed, by generators. All diesel storage will be below the threshold as mentioned in the EIA regulations of the National Environmental Management Act, 1998 (Act No 107 of 1998) as amended.

Access to the proposed mining area will be via an existing gravel road of the R44. An entrance road (250m) and internal/haul roads will be constructed to access the mining area.

Haul roads will be extended as the open cast mining progress and will be rehabilitated as part of the final reinstatement of the area. Trucks delivering the materials to the destinations will make use of the R44.

Any water required for the implementation of the project will be sourced and transported to site.

Figure 2: Operation Plan of the proposed site.

See attached as Appendix C a copy of the site activities map for the proposed project.

i) Listed and specified activities

Table 2: Listed and specified activities triggered by the associated mining activities

NAME OF ACTIVITY (E.g. For prospecting – drill site, site camp, ablution facilities, accommodation, equipment storage, sample storage, site office, access route etc... etc... etc E.g. for mining – excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	**Aerial extent of the activity** Ha or m^2	**LISTED ACTIVITY** Mark with an X where applicable or affected	**APPLICABLE LISTING NOTICE** (GNR 324, GNR 325, GNR 326 OR GNR 327)
Demarcation of site with visible beacons.	5 ha	N/A	Not listed
Stripping and stockpiling of topsoil (whatever minimal soil material can be stripped from the rocky terrain).	Mining Area 5 ha Access Road ±250m	X	<u>GNR 983 Listing Notice 1 Activity 21:</u> Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the mining permit.
Excavation, loading and hauling to the processing area.	±1 ha	X	
Stockpiling and transportation of material from site	±0,5 ha	X	
Sloping and landscaping upon closure of the mining area.	5 ha	X	N/A

iii) Description of the activities to be undertaken

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

Project Overview

Power Construction (Pty) Ltd is proposing an open-cast mining operation on a 5-hectare section of Bonne Esperance Farm 83 in Tulbagh, Western Cape. The target materials, silty sand and quartzitic sandstone pebbles, are intended to support construction projects in the region, including the Berg and Zen Wind Farms, and other infrastructure developments in Gouda and Tulbagh.

The mining activities will consist out of the following:

- Stripping and stockpiling of topsoil (whatever minimal soil material can be stripped from the rocky terrain);
- Excavating / Loading of insitu material;
- Crushing and Screening
- Stockpiling and transporting;
- Sloping and landscaping upon closure of the site; and replacing the topsoil (whatever minimal soil material can be stripped from the rocky terrain).

The mining site will contain the following:

- Excavating / loading equipment;
- Earth moving equipment;
- Mobile Crusher
- Access Roads;
- Site office (Container);
- Site vehicles;
- Parking area for visitors and site vehicles;
- Ablution facilities (Chemical toilets).

Commodity and Extraction Method

The operation will extract silty sand and quartzitic sandstone pebbles, prized for their durability and suitability as concrete aggregates and road base materials. Mining will employ open-cast methods, using earth-moving equipment to excavate and transport materials. These will be processed on-site at a mobile crushing and screening plant to produce various aggregate sizes for construction purposes. Each section of up to 1-1.5 hectares will be mined and rehabilitated before moving to the next.

Site Access and Transportation

Access to the site will utilize an existing gravel road from the R44, with minimal additional infrastructure required. A 250-meter entrance and internal haul roads will be constructed to facilitate material movement within the site. Tipper trucks will transport materials along these internal roads and use the R44 to reach delivery destinations. The transport plan minimizes impact on surrounding areas, utilizing low-speed limits and dust control measures to protect local fauna.

Environmental Management and Rehabilitation

An Environmental Management Programme (EMPr) is in place to mitigate dust, manage vegetation, and reduce environmental disruption. This includes ongoing rehabilitation, with topsoil replacement (whatever minimal soil material can be stripped from the rocky terrain) to restore the site after each section is mined. Upon completion, a final rehabilitation phase will be conducted before a closure application is submitted to the Department of Mineral Resources and Energy (DMRE), ensuring compliance with section 43(4) of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998.

Project Phases

Should the MP be issued, and the mining of silty sand and quartzitic sandstone pebbles be allowed, the proposed project will comprise of activities that can be divided into three key phases (discussed in more detail below) namely the:

The project consists of three key phases:

Site Establishment: Involves marking the mining area, clearing vegetation, and stockpiling topsoil (whatever minimal soil material can be stripped from the rocky terrain). Necessary machinery and equipment will be introduced to the site.

Operational Phase: Extraction of silty sand and quartzitic sandstone pebbles via open-cast mining. Materials will be screened and stockpiled for transport to clients.

Decommissioning and Rehabilitation: Includes site landscaping, top dressing, and removal of all infrastructure and waste. Weed and invasive species clearing will occur as mandated by the National Environmental Management: Biodiversity Act (NEMBA). Following rehabilitation, a closure application will be submitted in compliance with the MPRDA and NEMA regulations.

- Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required), and weed / alien clearing.

- All infrastructures, equipment, and other items used during the mining period will be removed from the site (section 44 of the MPRDA).

- Waste material of any description, including receptacles, scrap, rubble, and tyres, will be removed entirely from the mining area and disposed of at a recognised landfill facility. It will not be permitted to be buried or burned on the site.

- [A] holder of waste must, within the holder's power, take all reasonable measures to manage waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour or visual impacts.

- Weed / Alien clearing will be done in a sporadic manner during the life of the mining activities. Species categorised as weeds according to the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) [NEMBA] Alien and Invasive Species Regulation GNR 598 and 599 of 2014 Species regarded as need to be eradicated from the site on final closure.

- Final rehabilitation shall be completed within a period specified by the Regional Manager. Once the mining area was rehabilitated, the mining permit holder will submit a closure application to the DMRE in accordance with section 43(4) of the MPRDA, 2002. The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998 (as amended).

Table 3: GPS Coordinates of the proposed mining footprint.

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
A	33°13'29.816"S	19°0'11.045"E	-33.224949°S	19.003068°E
B	33°13'31.53"S	19°0'18.173"E	-33.225425°S	19.005048°E
C	33°13'39.889"S	19°0'15.642"E	-33.227747°S	19.004345°E
D	33°13'38.658"S	19°0'9.623"E	-33.227405°S	19.002673°E
E	33°13'46.715"S	19°0'7.974"E	-33.229643°S	19.002215°E
F	33°13'46.661"S	19°0'7.787"E	-33.229628°S	19.002163°E
G	33°13'29.816"S	19°0'11.045"E	-33.224949°S	19.003068°E
A	33°13'29.816"S	19°0'11.045"E	-33.224949°S	19.003068°E

The proposed project will not require any additional electricity connections, as power will be supplied, when needed, by generators. All diesel storage will be below the threshold as mentioned in the EIA regulations of the National Environmental Management Act, 1998 (Act No 107 of 1998) as amended.

Any water required for the implementation of the project will be sourced from authorised sources.

PHASES OF THE PROJECT

1. *Site Establishment Phase:*

   Site establishment entails the demarcation of the mining boundaries, clearance of vegetation and stripping and stockpiling of topsoil (whatever minimal soil material can be stripped from the rocky terrain if needed) from the mining area. The proposed mining site lacks significant topsoil, as it is characterized by a rocky terrain previously under cultivation for wheat. Due to the minimal natural topsoil layer, any rehabilitation efforts will not involve extensive topsoil replacement. Instead, rehabilitation will focus on redistributing whatever minimal soil material can be stripped during mining operations. This approach ensures that the disturbed areas are stabilized and prepared for future agricultural use or natural vegetation, while adhering to the limited soil resources available on-site. Followed by the introduction of the mining equipment as detailed below:

- **Demarcation of Mining Boundaries:**

  Pursuant to receipt of an Environmental Authorisation (EA) and Mining Permit (MP), and prior to site establishment, the boundaries of the mining area will be demarcated with visible beacons.

- **Access Road:**

  Access to the proposed mining area will be via an existing gravel road of the R44. An entrance road (250m) and internal/haul roads will be constructed to access the mining area.

  Haul roads will be extended as the open cast mining progress and will be rehabilitated as part of the final reinstatement of the area. Trucks delivering the materials to the destinations will make use of the R44.

Figure 3: Satellite view showing the existing access road (orange line) to the proposed mining area (red polygon).

Figure 4: Photos showing the existing entrance into the mining area.

- **Clearing of Vegetation:**

No bush clearing will be required for the proposed mining operations, as the site is minimally vegetated at present. The proposed 5-hectare mining footprint is situated in an inactive portion of the farm, which is occasionally used for agriculture, primarily wheat cultivation and cattle grazing. The area lacks significant topsoil, as it is characterized by rocky terrain with minimal soil coverage.

The method of mining will involve the direct loading of in-situ material using earth-moving equipment. Excavations will be limited to a maximum depth of 2 meters, avoiding the need for extensive disruption to the surface layer. Any soil material stripped from the rocky terrain will be stockpiled and redistributed during rehabilitation to stabilize the disturbed areas and promote recovery.

Given the site's rocky nature and limited topsoil, rehabilitation efforts will not include extensive topsoil replacement. Instead, the available soil will be strategically redistributed to prepare the area for potential future use, such as low-potential agricultural activities or natural vegetation regrowth. This approach prioritizes landform stabilization and erosion control, ensuring that the site remains safe and suitable for sustainable land use post-mining.

- **Topsoil Stripping:**

  Upon removal of vegetation, topsoil stripping will be limited to only the areas required during the operational phase of the activity. Normal practice involves removing the complete A-horizon, or topsoil layer, typically the top 100-200 mm of soil rich in organic matter. In cases where the topsoil layer is not clearly defined, the top 300 mm of soil would be stripped. Stripped topsoil is typically stockpiled in a berm no higher than 1.5 m along the boundary of the mining area, kept safe from contamination, flooding, or movement. If not naturally vegetated within six months, the berm would be seeded with indigenous grasses to stabilize the soil, preventing erosion and maintaining its viability for rehabilitation.

  However, the proposed mining site lacks significant topsoil, as it is primarily rocky and cultivated for wheat. Given the minimal natural topsoil, rehabilitation will not involve extensive topsoil replacement. Instead, efforts will focus on redistributing whatever minimal soil material can be stripped from the rocky terrain. This approach aims to stabilize disturbed areas and prepare them for potential future agricultural use or natural regrowth, given the limited soil resources available on-site.

- **Introduction of Mining Machinery:**

  The mining site will contain the following:

  - Excavating equipment;
  - Earth moving equipment;
  - Mobile crushing and screening plants;
  - Site vehicles;

  The Applicant will not construct/establish any permanent infrastructure (such as a workshop or storage facilities) within the permitted mining area.

2. *Operational Phase:*

During the operation phase, applicant will make use of loading insitu material by means of earth moving equipment. Areas to be opened at any given time will be approximately 1 – 1,5ha whereafter it will be rehabilitated before moving on to the next section. The material will be loaded and hauled to the mobile crushing / screening plant where it will be screened to various sized stockpiles and

transported to clients via tipper trucks. The silty sand and quarzitic sandstone pebbles will be stockpiled until it is transported from site. The contractor will make use of permanent employees, and any additional employees required will be sourced from the surrounding area and daily be transported to site. All activities will be contained within the boundaries of the site.

The mining activities will consist out of the following:

- Stripping and stockpiling of topsoil (whatever minimal soil material can be stripped from the rocky terrain);
- Excavating / Loading of insitu material;
- Crushing and Screening
- Stockpiling and transporting;
- Sloping and landscaping upon closure of the site; and replacing the topsoil (whatever minimal soil material can be stripped from the rocky terrain).

- <u>Water Use:</u>

  There is no need for washing of minerals for the proposed project. Dust generated on the access road will as far as possible be managed through alternative dust suppression methods to prevent the use of water for dust suppression.

  These measures will include a combination of the following:
  - The speed of all mining equipment/vehicles will be restricted to 40 km/h on the internal farm road to minimize dust generation;
  - When the truck leaves the mining area it will be covered (e.g. shade cloth material) to minimise windblown dust from the loads;
  - The Applicant will attempt to lessen denuded areas (dust source) to the absolute minimum.

  Under very windy/dusty conditions the permit holder might have to substitute the above-mentioned dust suppression methods with the spraying of water, in that instance, water will be sourced from authorised sources and transported by water truck to moisten the problem area. The water truck driver will receive the necessary training to prevent water wastage. Should additional water be required at any stage of the process, water will be sourced from an authorised source and transported to site.

- Electricity:

  The proposed project will make use of generators for power supply.

- Waste Handling:

  Due to the nature of the project, the small scale of the proposed operation, and the fact that no permanent infrastructure will be established, very little to no general waste will be generated as a direct result of the mining activities. Any waste generated during the operational phase, will be contained in a sealable refuse bin that will be removed from site and incorporated in an approved waste disposal system of the contractor.

  Likewise, very little (if any) generation of hazardous waste is expected. Hazardous waste will mainly be the result of accidental spillages or breakdowns. Such contaminated areas will be cleaned up immediately (within two hours of the occurrence) and contaminated soil will be contained in designated hazardous waste containers to be removed daily to the hazardous waste storage area at a designated off-site workshop where it will be disposed of as part of the hazardous waste by a registered hazardous waste handling contractor.
  The chemical toilets, to be placed on site, will be serviced by a registered contractor.

- Servicing and Maintenance:

  No workshop or wash bay will be established on site. Only minor servicing and emergency repairs of mining related equipment/machinery will take place if needed. No bulk storing of fuel (>30 000 l) will take place on site, and any chemicals needed at the site will be stored in accordance with the product specific safety data sheet specifications in temporary containers/secured cages.

  Regular vehicle maintenance, repairs and services may only take place in a demarcated service area. If emergency repairs are needed on equipment not able to move to a workshop / service area, drip trays must be present. All waste products must be disposed of in a 200-litre closed container/bin to be

removed from the emergency service area to the workshop in order to ensure proper disposal.

A bio-remediation product, e.g oil cap, may be used to treat hydrocarbon spills. Treated soil may then be reused.

Decommissioning Phase:

The decommissioning phase will focus on restoring the 5-hectare borrow pit progressively, with rehabilitation occurring in sections of 1 to 1.5 hectares as mining proceeds. The primary closure objective is to render the site safe and suitable for agricultural use. With no buildings or infrastructure requiring demolition, rehabilitation will concentrate on stabilizing the landform and ensuring adequate drainage. The existing access road will be adapted as a drainage pathway to prevent water accumulation within the excavation area, guiding water flow naturally according to the surrounding topography.

In accordance with the DMRE's minimum closure objectives, the decommissioning will also involve clearing the processing area, removing stockpiled materials (which will not be further required by the landowner), site infrastructure, and equipment, and landscaping the disturbed areas. Since restoring the borrow pit to its original topography with fill material is impractical, the rehabilitation plan is to create a modest landscape feature. Unlike quarry benching, which is unnecessary in a borrow pit, the area will be contoured to blend with the natural landscape. Due to the limited topsoil, rehabilitation will prioritize redistribution of any available soil material. (see Appendix L for the Closure Plan).

The decommissioning activities will therefore consist of the following:

- Sloping and landscaping the borrow pit;
- Removing all stockpiled material (which will not be further required by the landowner);
- Removing all mining machinery and equipment from site;
- Landscaping all disturbed areas and replacing the topsoil (available soil) and
- Controlling/monitoring the invasive plant species.

The future land use of the proposed area will revert back to its previous state. The current state of the area is inactive previously used for agriculture (wheat fields / cattle grazing).

The applicant will comply with the minimum closure objectives as prescribed by the DMRE and detailed below:

- Rehabilitation of the excavated area:

  Rehabilitation of the proposed mining site will prioritize stabilizing and preparing disturbed areas for potential agricultural use or natural regrowth, considering the minimal topsoil available. Key elements of this plan are as follows:

  Rehabilitation Process:

  The operation will proceed in staged sections of approximately 1–1.5 hectares, with each section undergoing rehabilitation immediately after completion of mining activities in that area. Earthmoving equipment will handle in-situ material during operations, ensuring that disturbed areas are minimized. Given the rocky, low-topsoil nature of the site, topsoil recovery will be limited to stripping whatever minimal soil can be recovered from the rocky terrain. This soil will be stockpiled temporarily for later redistribution.

  Topsoil Redistribution:

  Although the site lacks substantial topsoil, any minimal amount of soil material recovered will be returned to its original depth after profiling the excavated areas with acceptable contours and erosion control measures. This redistribution will help stabilize the soil, reduce erosion, and foster natural regrowth or future agricultural use.

  Erosion Control and Profiling:

  Excavated areas will be contoured and graded to prevent erosion and promote natural water flow. These erosion control measures will also help prevent sediment runoff into nearby areas and support the overall stability of the rehabilitated sections.

  Waste Management:

  No waste material will be allowed to be deposited within the excavated areas. This will help maintain the integrity of the rehabilitated landscape and prevent any contamination that could hinder vegetation growth or future agricultural use.

Future Land Use Preparation:

This rehabilitation approach is tailored to prepare the land for either future agricultural use or natural regrowth, aligning with the site's existing land use and minimal soil resources. By focusing on stabilization and basic soil restoration, the site will be left in a condition that allows for flexible land use options post-rehabilitation.

This staged approach will ensure that each section is rehabilitated to acceptable standards before moving on to the next, facilitating a controlled, orderly rehabilitation process with ongoing oversight and soil management as required.

- Rehabilitation of plant, office, and service areas:

Stockpiles must be removed during the decommissioning phase, the area ripped, and the topsoil (available soil as described above) returned to its original depth to provide a growth medium.

On completion of operations, all structures or objects shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002):

- Where sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
- The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora (not applicable to this application).

Photographs of the plant, office and service areas, 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 DMRE Regional Manager.

On completion of mining operations, the surface of these areas, if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 200mm and graded to an even surface condition.

If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the DMRE Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a seed mix to his or her specification.

- Final rehabilitation:

  Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation.

  All mining equipment, and other items used during the mining period must be removed from the site (section 44 of the MPRDA).

  Waste material of any description, including receptacles, scrap, rubble, and tyres, must be removed entirely from the mining area, and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.

  The management of invasive plant species must be done in a sporadic manner during the life of the mining activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) will be eradicated from the site.

  Final rehabilitation shall be completed within a period specified by the Regional Manager.

Once the mining area was rehabilitated the permit holder is required to submit a closure application to the Department of Mineral Resources and Energy in accordance with section 43(4) of the MPRDA, 2002 that states: *"An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated in subsection (3) and must be accompanied by the prescribed environmental risk report".* The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998 (as amended).

e) Policy and Legislative Context

Table 4: Policy and Legislative Context.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity: *Physical Environment – Geology and Soil.* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Management of invader plant species*.	The mitigation measures proposed for the site includes specifications of the CARA, 1983.
Mine Health and Safety Act, 1996 (Act No 29 of 1996) read together with applicable amendments and regulations thereto including relevant OHSA regulations.	Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Management of Health and Safety Risks.*	The mitigation measures proposed for the site includes specifications of the MHSA, 1996
Mineral and Petroleum Resources Development Act, 2002, (Act No. 28 of 2002) read together with applicable amendments and regulations thereto. • Section 27	Part A(1)(d) Description of the scope of the proposed overall activity	Application for a mining permit submitted to DMRE-WC. Ref No: WC30/5/1/3/2/10352MP
National Environmental Management Act,1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended) • GNR 983 Listing Notice 1 Activity 21: Environmental Impact Assessment Regulations Listing Notice 1 Activity 21: • Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the mining permit.	Part A(1)(d)(i) Listed and specified activities.	Application for environmental authorisation submitted to DMRE-WC. Ref No: WC30/5/1/3/2/10352MP
National Environmental Management: Air Quality Control Act, 2004 (Act No 39 of 2004) read together with applicable amendments and regulations thereto specifically the National Dust Control Regulations, GN No R827.	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – *Air and Noise Quality.*	The mitigation measures proposed for the site take into account the NEM: AQA, 2004 and the National Dust Control Regulations.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
	Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Dust Handling*.	
National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) read together with applicable amendments and regulations thereto.	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity - *Biological Environment* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Management of invader plant species*.	The mitigation measures proposed for the site includes specifications of the NEM:BA, 2004.
National Environmental Management: Waste Act, 2008 (Act No 59 of 2008) read together with applicable amendments and regulations thereto. NEM: WA, 2008: National norms and standards for the storage of waste (GN 926)	Part A(1)(d)(ii) Description of the activities to be undertaken	The mitigation measures proposed for the site take into account the NEM: WA.
National Heritage Resources Act. 1999 (Act No 25 of 1999).	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – *Human Environment*	The mitigation measures proposed for the site includes specifications of the NHRA, 1999.
National Water Act, 1998 (Act No 36 of 1998) read together with applicable amendments and regulations thereto.	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – *Hydrology*. Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk.	The mitigation measures proposed for the site includes specifications of the NWA, 1998.
Public Participation Guideline in terms of the NEMA EIA Regulations	Part A(1)(h)(ii) Details of the Public Participation Process Followed	Public participation was conducted in accordance with the guidelines published in terms of the NEMA EIA Regulations

f) Need and desirability of the proposed activities.

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

The increase in building, construction, and road maintenance and renewable energy projects in the vicinity of the property triggered the need of the Applicant to trade with the available silty sand and quartzitic sandstone pebbles from a permitted area. The proposed mining operation will entail the removal of silty sand and quartzitic sandstone pebbles, from an undisturbed area of the farm used for agriculture (wheat fields / cattle grazing).

The extraction of the mineral was determined to be a workable commercial prospect that will help diversify the uses of the site, converting it from idle farmland to small-scale mining.

The project will contribute to the local economy, both directly and indirectly through the multiplier effect that the project presence will create, as equipment and supplies are purchased locally, and wages are spent at local businesses, generating both jobs and income in the area.

The silty sand and quartzitic sandstone pebbles mined from the earmarked area will be sold to the building, construction, road maintenance industry and renewable energy projects in the vicinity of the property. The public will benefit from the planned site's silty sand and quartzitic sandstone pebbles mining since as it will help improve the region's road infrastructure, allowing drivers to pass through the district safely. Road improvement and upkeep are top priorities since they help South Africa's infrastructure network function better.

The need and desirability of the proposed project was assessed in terms of the National Department of Environmental Affairs' Guideline on Need and Desirability (first version published in terms of section 24J of the NEMA in 2014, and second version in 2017). The following table shows the questions that were considered in this regard.

Table 5: Need and desirability determination.

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
How were ecological integrity considerations taken into account? How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity?	This assessment incorporated a comprehensive review of ecological integrity and biodiversity impacts, considering both the current state of the environment and the projected effects of the proposed mining activities. According to the Terrestrial Biodiversity Specialist Assessment (Appendix M1), the overall post-mitigation risk level for mining-related impacts was assessed as low. Although the project activities pose low to moderate risks across the construction, operational, and decommissioning phases, all moderate risks can be mitigated to low through the implementation of recommended measures. These include erosion control, dust suppression, and limiting habitat disturbance. By adhering to these mitigation strategies, the development is expected to minimize disturbances to local ecosystems and avoid significant impacts on biodiversity, thus preserving the ecological integrity of the area. This approach aligns with the guideline's objectives, ensuring that potential adverse effects on ecosystems are minimized and that the site's biological diversity is adequately protected throughout the project lifecycle. Also refer to: • Part A(1)(d)(ii) Description of the activities to be undertaken – Clearing of Vegetation; • Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – Mining and Biodiversity; • Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – Biodiversity Conservation Areas; • Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – Groundcover; • Part A(1)(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Terrestrial Biodiversity, Conservation Areas and Groundcover, • Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk.	Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
	As discussed under *Part A(1)(g)(iv)(1)(a)*. Access to the proposed mining area will be via an existing gravel road of the R44. An entrance road (250m) and internal/haul roads will be constructed to access the mining area. Haul roads will be extended as the open cast mining progress and will be rehabilitated as part of the final reinstatement of the area. Trucks delivering the materials to the destinations will make use of the R44. Should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the vegetation and groundcover in general is deemed to be of low significance.	
How will this development pollute and/or degrade the biophysical environment?	Considering all the findings of this report, no fatal flaws are evident for the proposed project, and development in the study area is considered acceptable. It is the opinion of the specialist that the proposed activities may be favourably considered, on the condition that all prescribed mitigation measures and supporting recommendations are strictly implemented. (Please see Appendix M2). Also refer to: • Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk.	Highly Desirable
What waste will be generated by this development?	The general waste to be generated at the mine will mainly consist of paper, plastic, tin, and/or glass from the office, workshop and processing area. All general waste will be contained in sealable refuse bins that will be placed at the office area until it is transported to a recognised general waste landfill site. A recognized contractor will service the chemical toilets and be responsible for the removal of the sewerage to a registered sewerage handling facility. As mentioned earlier, hazardous waste may result from accidental spillages/breakdowns. Such contaminated areas will immediately (within two hours of occurrence) be cleaned, and the contaminated soil will be contained in a designated hazardous waste container that will be kept in a bunded area with impermeable surface until it is removed from site by a registered	Highly Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
	hazardous waste handling contractor to an approved facility. No waste will be disposed of, buried, burned or treated on the site.	
How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage?	According to the Notice of Intent to Develop conducted by ASHA Consulting (Pty) Ltd (Appendix M3), the development of the proposed borrow pit on Portion 2 of the Farm Bonne Esperance 83 is expected to have the following impacts on landscapes and sites that constitute the nation's cultural heritage: Cultural and Historical Significance: The area near Gouda and Saron has historical value, including Saron's mission station established in the mid-19th century. However, the mining site itself is located more than 4 km from this historical core and associated structures. As such, no significant impacts on these historical resources are anticipated. Visual and Natural Landscapes: The mountains east of the site are noted as visually significant cultural features. Nonetheless, the proposed development is relatively small in scale and temporary, suggesting minimal long-term visual disruption to these landscapes. Archaeological and Paleontological Findings: Early Stone Age artefacts were found on-site, but their density is notably low, with only eight artefacts observed. Due to this low density and the absence of significant finds compared to nearby projects, no substantial archaeological impact is expected. Paleontological analysis indicated that the area lies on Quaternary sands and terrace gravels over older metamorphosed rocks of the Porterville Formation. These conditions suggest a very low probability of fossil preservation, thus posing minimal risk to	Highly Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
	paleontological resources. A protocol for accidental fossil finds has been recommended to safeguard any unexpected discoveries during mining. Overall, while the site is proximate to areas of cultural and natural significance, the proposed development is not expected to significantly disturb heritage resources. In light of this, a Heritage Impact Assessment was not deemed necessary by the heritage specialist. (Please see Appendix M).	
How will this development use and/or impact on non-renewable natural resources?	The Gouda Borrow Pit development will impact non-renewable natural resources by providing vital materials like silty sand and quartzitic sandstone pebbles to the Berg and Zen Wind Farm projects, along with other construction, building, and road maintenance projects in the area. This borrow pit, with a resource of at least 80,000 cubic meters, will support these projects while helping to create jobs and boost the local economy. Because it is located close to the wind farm projects, transportation distances for materials are shorter, reducing environmental impact through decreased CO_2 emissions, dust, road wear, and safety risks. The local economy will benefit directly and indirectly from this project through a "multiplier effect," as locally purchased equipment, supplies, and wages spent at area businesses create additional jobs and income. By improving the availability of road-building materials, this project will also support the public by contributing to the region's road infrastructure, enhancing safety and supporting South Africa's broader infrastructure network. It is foreseen that the mining permit holder could responsibly consume the silty sand and quartzitic sandstone pebbles resource on the property over a period of 5 years.	Desirable
How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part?	It is proposed that approximately 90 000 litres of water will be needed per day during the dry months to manage dust emissions from the proposed operation. As mentioned earlier, the contractor will strive to manage dust generation through alternative suppression methods to restrict water use to the absolute minimum. The contractor will be encouraged to consider the use of	Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
	non-potable water for mining related activities. The use of solar power should also be considered as an alternative power source to the offices and/or workshops.	
How were a risk-averse and cautious approach applied in terms of ecological impacts?	If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that ecological impacts should be fully mitigated. Refer to the following sections: • Part A(1)(d)(ii) Description of the activities to be undertaken; • Part A(1)(h)(i) Details of the development footprint alternatives considered; • Part A(1)(h)(iv) The environmental attributes associated with the alternatives; • Part A(1)(i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity; • Part A(1)(l) Environmental impact statement.	Desirable
How will the ecological impacts resulting from this development impact on people's environmental right?	Should the mining activities be approved the potential visual-, dust-, and noise impacts associated with the proposed activity will be of low significance. If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that no environmental rights of the surrounding residents/public will be affected by the ecological impacts associated with the proposed activity.	Highly Desirable

Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts.	If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that the mining activities will not affect the physical, psychological, cultural or social needs of the community in a negative manner, nor will it impact negatively on the socio-economic status of the area.	Desirable
Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?		
Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified, resulted in the selection of the "best practicable environmental option" in terms of ecological considerations		
2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
What is the socio-economic context of the area?	Please refer to Heading 2(h)(iv)(1)(a) Socio-economic Environment.	Highly Desirable
Considering the socio-economic context, what will the socio-economic impacts be of the	As mentioned earlier, should this mining permit be approved the applicant will be able to,	

development, and specifically also on the socio-economic objectives of the area?	• Provide employment opportunities. • The people/businesses of Gouda / Tulbagh areas will benefit from diversification of silty sand and quartzitic sandstone pebbles sources which will result in competitive product costs. • It will also diversify the income of the property as well as potential employees and clients.	
How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that the mining activities will not affect the physical, psychological, cultural or social needs of the community in a negative manner, nor will it impact negatively on the socio-economic status of the area.	Highly Desirable
Will the development result in equitable impact distribution, in the short- and long-term?	The mining activities proposes to operate in a socially and economically sustainable manner during both the short- and long term.	Highly Desirable
In terms of location, describe how the placement of the proposed development will contribute to the area.	As mentioned above the proposed area is over an undisturbed area of the farm used for agriculture (wheat fields / cattle grazing) with low agricultural potential due to the rocky surface, after consultation with the landowner the application footprint extends into an area with extremely low agricultural potential. The proposed project will not necessitate the loss of agricultural field with high potential to the landowner. Access to the proposed mining area will be via an existing gravel road of the R44. An entrance road (250m) and internal/haul roads will be constructed to access the mining area. Haul roads will be extended as the open cast mining progress and will be rehabilitated as part of the final reinstatement of the area. Trucks delivering the materials to the destinations will make use of the R44. Should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the surrounding area in general is deemed to be of low significance thereby keeping the impact on the receiving environment as low as possible.	Highly Desirable
How were a risk-averse and cautious approach applied in terms of socio-economic impacts?	No negative socio-economic impacts could, at this stage, be identified that cannot be managed through the implementation of mitigation measures.	Highly Desirable
How will the socio-economic impacts resulting from this development impact on people's environmental right?	As mentioned in Heading *3(j)(1) Impact on the socio-economic condition of any directly affected person*, the activity may have an impact on the visual characteristics of the surrounding environment and may potentially affect air quality and possibly the noise ambiance of the study area. However, should the mining activities be approved the potential visual-, dust-, and noise impacts associated with the proposed activity will be of low significance. If the proposed mitigation measures and monitoring	Highly Desirable

	programs, as proposed in this document, is implemented, it is believed that no environmental rights of the surrounding residents/public will be affected by the socio-economic impacts associated with the proposed activity	
Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts?	If approved the potential visual-, dust-, and noise impacts associated with the proposed activity will be of low significance. If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that no environmental rights of the surrounding residents/public will be affected by the socio-economic impacts associated with the proposed activity.	Highly Desirable
What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations? What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons?	If the mitigation measures proposed in this document is adhered to, the project entails the mining of a 5ha area. Should the permit application be approved, the project will directly contribute to the socio-economic status of the receiving environment through the employment, and support of the local economy. Please refer to: • Part A(1)(g)(vii) The positive and negative impacts that the proposed activity and alternatives will have on the environmental and the community that may be affected.	Highly Desirable
What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	The mining site will (if approved) operate in accordance with, amongst others, the following: • CARA, 1983 – to ensure agriculture related compliance; • Financial Provision Regulations, 2015 – to ensure compliance in terms of rehabilitation; • Mine Health and Safety Act, 1996 (as amended) – to ensure employee safety; • MPRDA, 2002 (as amended) – to ensure mining related compliance; • NEM: AQA, 2004 – to ensure air quality related compliance; • NEM:BA, 2004 – to ensure biodiversity related compliance;	Highly Desirable

What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	• NEM: WA, 2008 – to ensure waste related compliance; • NEMA, 1998 (as amended) – to ensure environmental related compliance;	
Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community that is consistent with the priority needs of the local area.	As mentioned earlier, should this mining permit be approved the applicant will be able to, • Provide employment opportunities; • The people/businesses of Gouda / Tulbagh area will benefit from diversification of silty sand and quartzitic sandstone pebbles sources which will result in competitive product costs. • It will also diversify the income of the property as well as potential employees and clients.	Highly Desirable
What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected.	The mining activities will be in accordance with the specifications of the Mine Health and Safety Act, 1996. Site management will have daily discussions with the drill rig operators regarding the work to be performed and the environment in which the work will take place. Grievances/concerns can be lodged during the daily site meetings.	Highly Desirable
Describe how the development will impact on job creation in terms of, amongst other aspects?	As mentioned earlier, should this mining permit be approved the applicant will be able to, • Provide employment opportunities; • The people/businesses of Gouda / Tulbagh area will benefit from diversification of a silty sand and quartzitic sandstone pebbles sources which will result in competitive product costs. • It will also diversify the income of the property as well as potential employees and clients.	Highly Desirable

What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage.	Should the mining permit be approved the activities will operate under a valid mining permit issued by the DMRE, as well as a water use authorisation to be issued by the DWS.Compliance of the site with the approved EMPR, EA- and WUL conditions will be reported on as per departmental specifications. Considering this, the proposed activity will take place in an environmentally sustainable manner with the least possible impact on the receiving environment.	Highly Desirable
Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left.	It is believed that the mitigation measures proposed in this document is realistic and can be implemented (when needed) by the proposed activities. If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, the residual impact on the environment is of low significance.	Highly Desirable
What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution environmental damage or adverse health effects will be paid for by those responsible for harming the environment.	In terms of Section 41 of the MPRDA, 2002 a mining permit holder must submit a financial provision to the DMRE that is sufficient to rehabilitate or manage the negative environmental impacts related to the mining activity.	Highly Desirable
Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified, resulted in the selection of the best practicable environmental option in terms of socio-economic considerations	Please refer to: • Part A(1)(g)(i) Details of the development footprint alternatives considered; • Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Socio-Economic Environment; • Part A(1)(g)(vii) The positive and negative impacts that the proposed activity and alternatives will have on the environmental and the community that may be affected.	Highly Desirable

Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area.	If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that the mining activities will not cause a cumulative socio-economic impact should the mining permit application be approved, seeing that there are no other rated activities in the vicinity.	Highly Desirable

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

The decision to pursue Site Alternative 1 (S1) on Portion 2 of the farm Bonne Esperance 83 as the preferred location for the proposed mining operation was driven by both environmental and practical considerations. S1's selection offers an optimal balance between resource availability and minimal disruption to surrounding land uses, underscoring its status as the most suitable option. The area, located on a currently inactive portion of farmland in Tulbagh, Western Cape, has been chosen for its naturally concentrated deposits of high-quality silty sand and quartzitic sandstone pebbles, critical to the project's success.

Alternative sites on the farm were carefully evaluated, but environmental and agricultural factors made them less feasible. Specifically, these alternatives include areas supporting sensitive renosterveld vegetation or those with higher agricultural potential, making them ecologically and economically inappropriate for mining activities. Additionally, these areas lack the concentrated, high-quality mineral resources required, reaffirming S1 as the only viable option.

An alternative layout, Site Alternative 2 (S2), was also explored but found unsuitable. S2 posed increased environmental risks, with higher potential for disturbances and insufficient mineral quality and quantity to support the project's objectives. While technically feasible, the development of S2 would lead to significant ecological disruption without providing substantial benefits over S1, thus rendering it impractical.

The chosen mining method—utilizing earth-moving equipment to excavate, load, and transport materials—is compatible with S1's landscape and resource composition. Since S1 is already used for wheat farming and occasional cattle grazing, the proposed activity allows for minimal interference with these current land uses while effectively utilizing the site's natural resources. Alternative designs and layouts for the borrow pit were reviewed, but none proved as viable, either due to inadequate resource concentration or incompatibility with the project's requirements.

In conclusion, Site Alternative 1 was selected as the preferred location for its ability to provide the necessary materials while balancing environmental and agricultural concerns. This choice ensures a sustainable approach to mining on the property, meeting the project's needs with minimal impact on surrounding areas.

The environmental impact assessment process assessed the feasibility of the proposed site alternative to identify fatal flaws that are deemed as severe as to prevent the activity continuing or warrant another site or project alternative. The outcome of the assessment showed that should the mitigation measures and monitoring programmes proposed in this document be implemented, no fatal flaws could be identified that prevents the activity continuing. Considering the above, the mining proposal was updated to incorporate the project related mitigation measures and monitoring programmes identified during the assessment process. The preferred development footprint was subsequently finalized and is depicted on the attached site activities plan (Appendix C).

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

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

i) Details of the development footprint alternatives considered.

With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

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

Site Alternative 1 (S1) (Preferred and Only Site Alternative): Site Alternative 1 entails the mining of an area over an inactive area of the farm used for agriculture (wheat fields / cattle grazing) within the GPS coordinates as listed in the table below:

Table 6: GPS Coordinates of Site Alternative 1 (preferred and only site alternative)

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
A	33°13'29.816"S	19°0'11.045"E	-33.224949°S	19.003068°E
B	33°13'31.53"S	19°0'18.173"E	-33.225425°S	19.005048°E
C	33°13'39.889"S	19°0'15.642"E	-33.227747°S	19.004345°E
D	33°13'38.658"S	19°0'9.623"E	-33.227405°S	19.002673°E
E	33°13'46.715"S	19°0'7.974"E	-33.229643°S	19.002215°E
F	33°13'46.661"S	19°0'7.787"E	-33.229628°S	19.002163°E
G	33°13'29.816"S	19°0'11.045"E	-33.224949°S	19.003068°E
A	33°13'29.816"S	19°0'11.045"E	-33.224949°S	19.003068°E

Figure 5: Satellite view showing the position of Site Alternative 1 (red polygon) with the viable access road (orange line) within the surrounding landscape.

Site Alternative 1 was identified during the assessment phase of the environmental impact assessment, by the Applicant and project team, as the **preferred and only site alternative** due to the following:

- The proposed area was chosen due to the presence its naturally concentrated deposits of high-quality silty sand and quartzitic sandstone pebbles, critical to the project's success.
- Access to the proposed mining area will be via an existing gravel road of the R44. An entrance road (250m) and internal/haul roads will be constructed to access the mining area.
- Haul roads will be extended as the open cast mining progress and will be rehabilitated as part of the final reinstatement of the area. Trucks delivering the materials to the destinations will make use of the R44.

No-go Alternative: The silty sand and quartzitic sandstone pebbles to be removed from the borrow pit will be used for construction industry in the vicinity by providing material to the Berg and Zen Wind Farm projects and other related and non-related projects in the area. The proposed borrow pit will therefore contribute to the upgrading / maintenance of infrastructure and building contracts in and around the Gouda / Tulbagh area, if however, the no-go alternative is implemented the Applicant could not utilise the mineral resource on this property and the construction industry of Gouda /

Tulbagh area will not benefit from diversification of the mineral sources which will escalating product costs. If, however, the no-go alternative is implemented:

- the mineral resource on this land cannot be used by the applicant.
- the proposed employment opportunities will be lost;
- the diversification of silty sand and quartzitic sandstone pebbles sources, which would result in rising product costs, will not be advantageous to the residents or enterprises in the vicinity of the application area.
- The mineral resource on this land cannot be used by the applicant.

In light of this, the no-go alternative was not deemed to be the preferred alternative.

ii) Details of the Public Participation Process Followed

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

During this public participation process the relevant stakeholders and I&AP's will be informed of the project by means of an advertisement in Witzenberg Herald on 15 November 2024, and two on-site notices that will be placed at visible locations, one on the farm boundary fence, and another at the at the public library in Gouda.

A notification letter inviting comments on the DBAR over a 30-days commenting period (ending 14 January 2025) was sent to the landowner, neighbouring landowners, stakeholders and other I&AP that may be interested in the project. The comments received on the DBAR will be incorporated into the final Basic Assessment Report (FBAR) to be submitted to the DMRE for consideration. The following I&AP's and stakeholders will be informed of the project:

Table 7: List of the I&AP's and stakeholders that were notified of the proposed silty sand and quartzitic sandstone pebbles mine project.

SURROUNDING LANDOWNERS & INTERESTED AND AFFECTED PARTIES	STAKEHOLDERS
Surrounding landowners & lawful occupiers: • A J DU PLESSIS BOERDERY PTY LTD – Landowner – Portion 2 of the farm Bonne Esperance 83 • A J DU PLESSIS TRUST – Portion 1 of the farm Bonne Esperance 83 • GRASKLOOF FAMILIETRUST – Portion 4 of the farm Bonne Esperance 83, • BLUE FALCON 140 TRADING PTY LTD – Portion 0 of the farm 397 • A J DU PLESSIS BOERDERY PTY LTD – Portion 0 of the farm Nayoth 458 • Drakenstein Local Municipality – Portion 0 of the farm Saron 40	• Department of Environmental Affairs and Development Planning • Department of Social Development • Department of Economic Development and Tourism; • Department of Transport and Public Works; • Department of Agriculture; • Department of Forestry, Fisheries and the Environment; • Department of Labour - Western Cape Provincial Office; • Department of Rural Development and Land Reform - Western Cape District Offices • Department of Water and Sanitation; • Department of Social Development • Department of Labour • Cape Winelands District Municipality; • Drakenstein Local Municipality; • Drakenstein Local Municipality - Ward 31 • Heritage Western Cape • South African Heritage Resources Agency; • Cape Nature • Cape West Coast Biosphere Reserve • South African National Roads Agency
I&AP'S AND STAKEHOLDERS THAT REGISTERED/COMMENTED DURING THE INITIAL NOTIFICATION PERIOD	
• Any comments received on the draft BAR will be incorporated into the final BAR.	

Table 8: Table comparing the required methods with the public participation process of this project.

Requirements in terms of NEMA regulation 41	**public participation process followed**
• Regulation 41(2)(a): *Fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of-* *(i) The site where the activity to which the application or proposed application relates is or is to be undertaken; and* (ii) *Any alternative site.* • Regulation 41(3): *A notice, notice board or advertisement referred to in sub regulation (2) must—* *(a) give details of the application or proposed application which is subjected to public participation; and* *(b) state—* *(i) whether basic assessment or S&EIR procedures are being applied to the application.* *(ii) the nature and location of the activity to which the application relates.* *(iii) where further information on the application or proposed application can be obtained; and* (iv) *the manner in which and the person to whom representations in respect of the application or proposed application may be made.* • Regulation 41(4): *A notice board referred to in sub regulation (2) must—* *(a) be of a size of at least 60cm by 42cm; and*	Notice boards in English were fixed at the following conspicuous and public accessible areas: • Entrance to the farm/site. • Gouda Library. All the notice boards that were placed complied with the requirements of Regulation 41(3) as presented in Appendix E2 attached to this document. The notices were printed on boards of 60 x 42 cm in Arial font of sufficient size.

Requirements in terms of NEMA regulation 41	public participation process followed
(b) *display the required information in lettering and in a format as may be determined by the competent authority.*	
▪ Regulation 41(2)(b): *giving written notice, in any of the manners provided for in section 47D of the Act, to-* (i) *the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken.* (ii) *owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken.* (iii) *the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area.* *(iv) the municipality which has jurisdiction in the area.* *(v) any organ of state having jurisdiction in respect of any aspect of the activity.* *(vi) any other party as required by the competent authority;*	(i) The Landowner (and Applicant) signed an agreement regarding this project and is kept apprised of the EIA (BA) process. To date, no additional comments were received. (ii) The surrounding landowner will be invited to comment on the project and the DBAR. (iii) The Ward Councillor of Ward 31 will be invited to comment on the project and DBAR. (iv) Both the Drakenstein Local Municipality and Cape Winelands District Municipality will be invited to comment on the project and DBAR. (v) As listed in Table 7 the relevant state departments and entities will be invited to comment on the project and DBAR.
▪ Regulation 41(2)(c): *Placing an advertisement in-* *(i) One local newspaper; or* *(ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations.*	▪ The project and availability of the DBAR was advertised in Witzenberg Herald on 15 November 2024 in English.

Requirements in terms of NEMA regulation 41	public participation process followed
• Regulation 41(2)(d): *Placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken…*	Not applicable, as the proposed activity will not extend beyond the boundaries of the metropolitan or district municipality in which it will be undertaken.
• Regulation 41(2)(e): *Using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to—* *(i) illiteracy.* *(ii) disability; or* (iii) *any other disadvantage.*	• Not applicable to this application
• Regulation 41(5): *Where public participation is conducted in terms of this regulation for an application or proposed application, sub regulation (2)(a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19(1)(b) or 23(1)(b) or the public participation process contemplated in regulation 21(2)(d) …*	• Not applicable to this application.
• Regulation 41(6): *When complying with this regulation, the person conducting the public participation process must ensure that—* *(a) information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and* (b) *participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable*	• The DBAR containing all relevant facts in respect of the application was available to potential I&APs for perusal and commenting over a 30-days commenting period. The DBAR was available on the company (Greenmined) website as well as a hard copy in the available upon request. I&AP's will be invited to contact the EAP should additional information be required.

Requirements in terms of NEMA regulation 41	public participation process followed
opportunity to comment on the application or proposed application.	
Regulation 41(7): *Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes.*	Not applicable to this project.

iii) Summary of issues raised by I&APs

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

Table 9: Summary of issues raised by IAPs

Interested and Affected Parties **List the name of persons consulted in this column, and** **Mark with an X where those who must be consulted were in fact consulted**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
AFFECTED PARTIES	**X**				
Landowner/s					
A J DU PLESSIS BOERDERY PTY LTD – Landowner – Portion 2 of the farm Bonne Esperance 83	X	The landowner is aware of the mining permit application and provided his consent (Please see Appendix F)			
Lawful occupier/s of the land					
N/A					
Landowners or lawful occupiers on adjacent properties	**X**				
A J DU PLESSIS TRUST – Portion 1 of the farm Bonne Esperance 83	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
A J DU PLESSIS BOERDERY PTY LTD – Portion 0 of the farm Nayoth 458	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
• GRASKLOOF FAMILIETRUST – Portion 4 of the farm Bonne Esperance 83,	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
• BLUE FALCON 140 TRADING PTY LTD – Portion 0 of the farm 397	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Drakenstein Local Municipality – Portion 0 of the farm Saron 40	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Municipal councillor					
Cllr. Catherine Maria Jacobs (Ward 31)	X	Any comments received on the draft BAR will be incorporated into the final BAR.			

Interested and Affected Parties List the name of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Municipality					
Drakenstein Local Municipality	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Cape Winelands District Municipality	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					
Department of Transport and Public Works	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Department of Public Works and Infrastructure;	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Eskom	N/A				
Transnet	N/A				
Communities	N/A	No community were identified within the study area.			
Dept. Land Affairs					

Interested and Affected Parties List the name of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Department of Agriculture;	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Department of Agriculture Forestry and Fisheries;	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Traditional Leaders	N/A				
Dept. Environmental Affairs					
Department of Environmental Affairs and Development Planning	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Other Competent Authorities affected					
Department of Labour - Western Cape Provincial Office;	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Department of Public Works and Infrastructure	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Department of Rural Development and Land Reform - Western Cape District Offices	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Department of Water and Sanitation	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
South African Heritage Resources Agency	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Department of Social Development	X	Any comments received on the draft BAR will be incorporated into the final BAR.			

Interested and Affected Parties List the name of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Department of Economic Development and Tourism;	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Heritage Western Cape	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
Cape Nature	X	Any comments received on the draft BAR will be incorporated into the final BAR.			
OTHER AFFECTED PARTIES					
N/A		Any comments received on the draft BAR will be incorporated into the final BAR.			
INTERESTED PARTIES					
N/A		Any comments received on the draft BAR will be incorporated into the final BAR.			

iv) The Environmental attributes associated with the alternatives.

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

(1) Baseline Environment

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

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

This section describes the biophysical, cultural and socio-economic environment that may be affected and the baseline conditions, which are likely to be affected by the proposed mining activity.

PHYSICAL ENVIRONMENT

CLIMATE

According to the weather online website, the application area experiences a Mediterranean climate with warm, dry summers and cool, wet winters. Average temperatures during summer, particularly in January and February, peak around 30°C, while winter temperatures drop to about 8°C at night in June and July. The area typically receives most of its rainfall between May and August, with around five to seven rainy days each month during these colder months. This seasonal rainfall pattern supports the surrounding vineyards and agricultural areas, which benefit from the winter rains and mild, dry summers. Overall, Gouda's climate is pleasant year-round, especially for outdoor activities in spring and autumn.

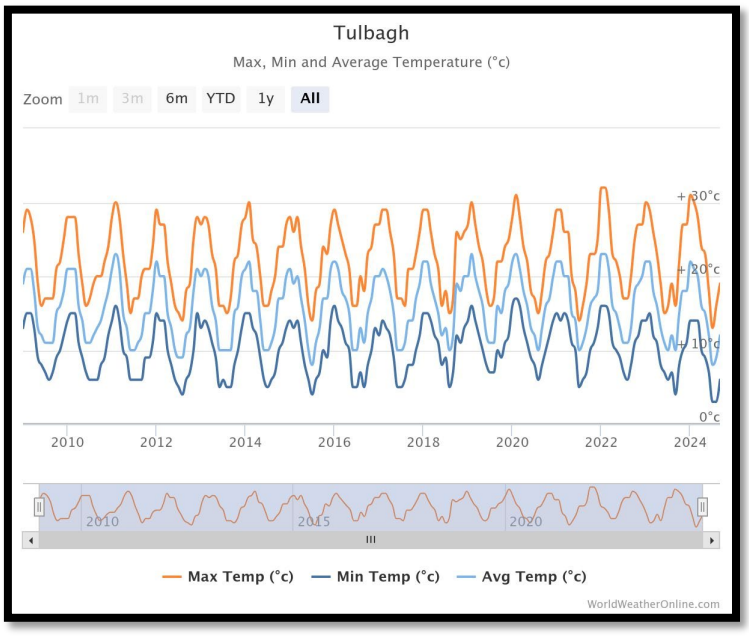


Figure 6: Statistical representation of the temperatures for the Tulbagh region (Chart obtained from https://www.worldweatheronline.com/tulbagh-weather-averages/western-cape/za.aspx).

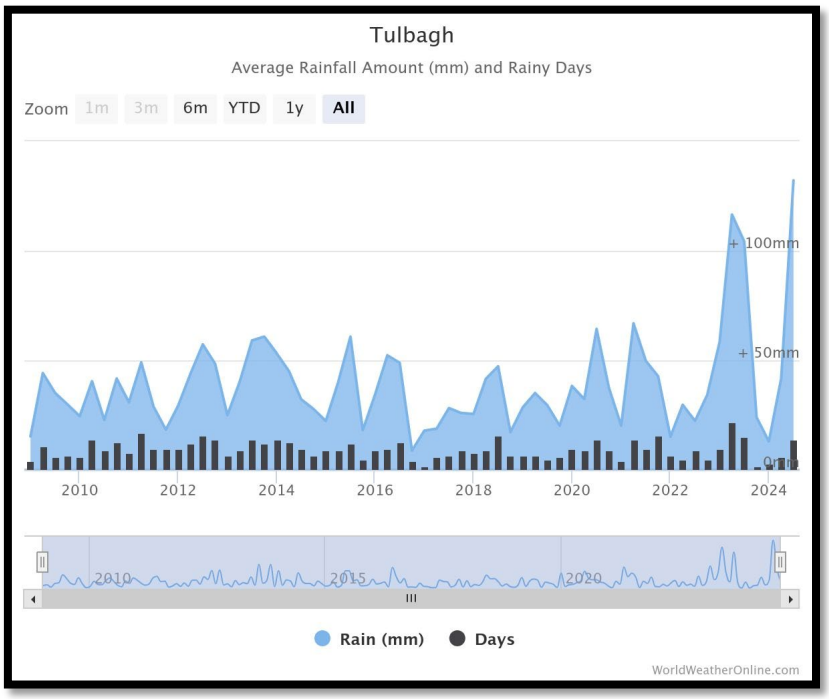


Figure 7: Statistical representation of the precipitation for the Tulbagh region (Chart obtained from https://www.worldweatheronline.com/tulbagh-weather-averages/western-cape/za.aspx).

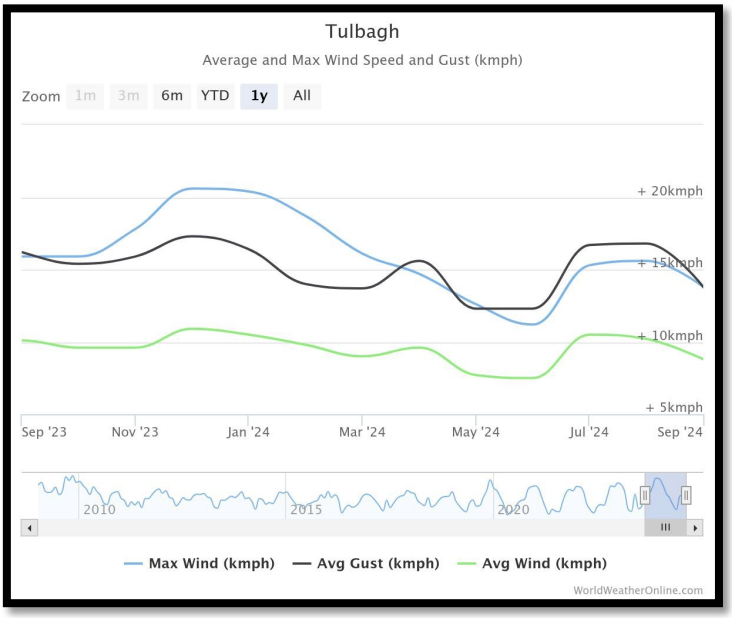


Figure 8: Statistical representation of the wind speed for the Tulbagh region (Chart obtained from https://www.worldweatheronline.com/tulbagh-weather-averages/western-cape/za.aspx).

According to the wind statistics as presented on Windfinder.com the prevalent wind In the Gouda area of the Western Cape, prevailing winds come mainly from the southeast, a pattern typical in the Western Cape due to the influence of the Cape Doctor wind. This southeasterly wind often brings dry, warm weather during summer months. Additionally, the region experiences a westerly influence, particularly in winter, when cold fronts sweep in from the Atlantic Ocean, bringing cooler temperatures and

rain. The combination of southeasterly winds in summer and westerlies in winter creates a mixed wind climate, which also contributes to the effectiveness of wind farms in the area. This southeastern wind pattern is common during most of the year, especially during the warmer months when it brings cooler air from the coast inland. Wind speeds vary based on local weather conditions, but the average wind speed near Gouda is around 10 to 15 knots (roughly 18-28 km/h), with gusts sometimes reaching higher during certain periods.

TOPOGRAPHY

The natural topography of the proposed excavated area can be described lies in a region characterized by diverse topography, encompassing flat plains, rolling hills, and mountainous terrain. Positioned near the foothills of the Obiekwa and Winterhoek mountain ranges, Gouda is situated within the Breede River Valley, a notable geographic feature known for its fertile agricultural land and scenic landscapes.

Moderately undulating plains, adjacent mountains and in river basins. The vegetation is a matrix of low, evergreen shrubland with emergent sparse, moderately tall shrubs and a conspicuous graminoid layer. Proteoid, restioid and asteraceous fynbos types are dominant, with closed-scrub fynbos common along the river courses. Ericaceous and restioid fynbos found in seeps.

The area surrounding Gouda predominantly consists of low-lying, gently undulating plains which are utilized extensively for agriculture, especially for grain farming and vineyards. These plains are bordered by steep, rugged mountains that rise dramatically from the valley floor, creating a picturesque contrast and adding to the area's scenic value. The topography is also shaped by the Berg River, which flows northward and provides an essential water source, supporting both agricultural and ecological needs in the region.

The site lies at an elevation of approximately 100 meters above sea level. This elevation places it within the relatively low-lying Breede River Valley, which is bordered by dramatic mountainous terrain that influences the region’s microclimates and landscape. The valley itself is characterized by flat to gently rolling plains, ideal for agriculture, with fertile soils supporting extensive grain farming and vineyards.

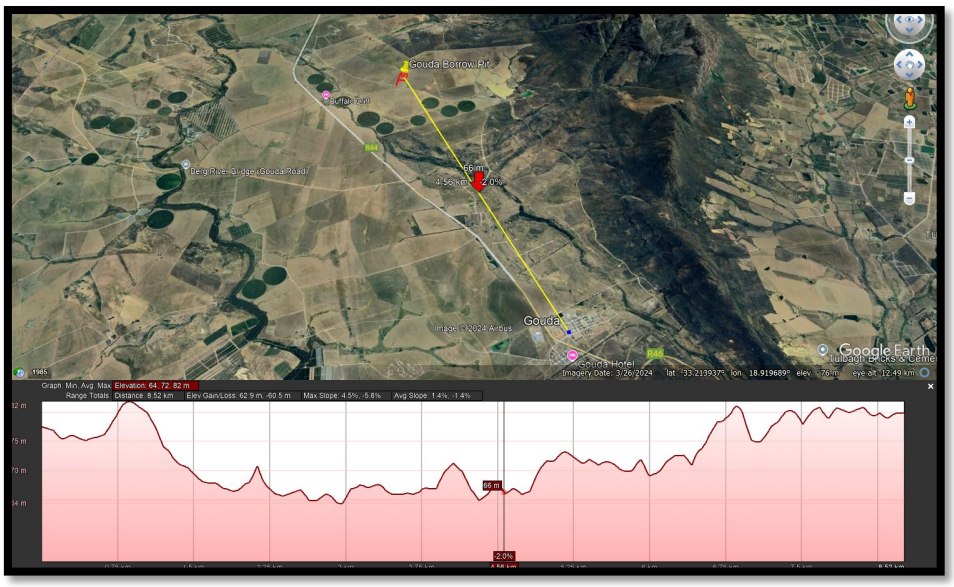


Figure 9: Elevation profile showing the topography between the proposed mining footprint (yellow line) and the town of Gouda. (Image obtained from Google Earth).

VISUAL CHARACTERISTICS

The visual character of the surrounding areas mainly comprises of an inactive agricultural setting with a few mining operations within the vicinity of the area. The aesthetic ambiance of the area is that of a rural area.

AIR AND NOISE QUALITY

The wind patterns in Gouda are somewhat influenced by seasonal variations. According to the wind statistics as presented on Windfinder.com the prevalent wind direction distribution of Gouda is in southeastern direction wind. This pattern is common during most of the year, especially during the warmer months when it brings cooler air from the coast inland. The ambient noise levels of the surrounding area are low with the noise levels of the greater surrounding area are low representing that of a rural area, with the noise levels of the study area (immediate surroundings) impacted by farming operations.

GEOLOGY AND SOIL

The geology of the study area comprises mostly alluvial gravel and cobble fields typically resting over Malmesbury Group schists and phyllites (in the northern part of the area) as well as over Cape Suite granites (in Drakenstein Valley from Wellington to Franschhoek) and on Malmesbury Group sandstones from Simondium to Klipheuwel. Dominant land types Db (soils with prismacutanic and pedocutanic horizons) and Ga (soils with ferrihumic horizon). Soils with a marked clay accumulation, strongly structured and a non-reddish colour. In addition, one or more of vertic, melanic and plinthic soils may be present. Phyllite shale, schist and

greywacke of the Porterville Formation, Malmesbury Group, partly covered by alluvium and terrace gravel. Some talus deposits occur on the midslopes.

Figure 10: Geology map of the area around the proposed quarry (blue polygon). (Image obtained from the Council for Geoscience)

HYDROLOGY

The proposed application falls within a critical hydrological region characterized by its proximity to the Berg River, a key water resource that supports agriculture, industry, and ecological needs. The Department of Water and Sanitation (DWS) classifies the area within the Berg-Olifants Water Management Area (WMA), one of South Africa's primary water management regions. This WMA is managed to ensure sustainable water supply and quality, balancing the needs of urban development, agriculture, and conservation.

The Berg River, originating in the Franschhoek Mountains and flowing northward, is the primary catchment area for Gouda. This river and its tributaries serve as an essential source of water, with Gouda specifically located within the Lower Berg sub-catchment. Water flow in this region is seasonal and influenced by winter rainfall, contributing to the river's variable flow rates and necessitating efficient water management.

The proposed project does require a Water Use Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No 36 of 1998). As per the Risk Matrix Assessment (please see Appendix M1). The assessment process indicated low-risk impacts, it's crucial to note that it was conducted without on-site verification. Given the potential for unforeseen ecological consequences, particularly regarding vegetation

disturbance, water quality degradation, and sediment runoff, a cautious approach is necessary.

Although the project may qualify for General Authorisation, it is imperative to implement robust mitigation measures and consider additional on-site verification to minimize environmental impact and ensure sustainable development. A non-prioritised man-made wetland is located within 500m of the site. This wetland appears to be a small dam system considering the surrounding landscape characteristics, it is possible that the wetland system could extend into the site footprint. Although the extensive history of agricultural farming on the site would suggest that the wetland unit is likely to be highly degraded. Any water required for the implementation of the project will be sources from an authorised source and transported to site. Water required for the implementation of the project will be sourced from an authorised source and transported to site. The use of potable water for dust suppression should be avoided as far as practically possible.

Table 10: Aquatic characteristics of the greater study area

Water Management Area	Berg WMA
Sub Water Management Area	Upper Berg -
Quaternary Catchment	G10F
FEPA Status	The Klein Berg River is located further than 1km from the project area

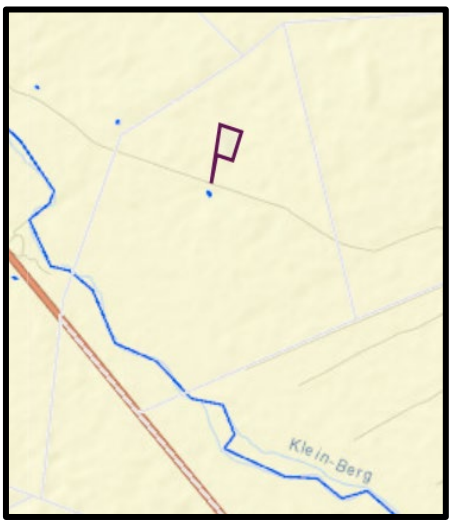


Figure 11: Map showing the proposed mining footprint (purple polygon) and Klein Berg River. (Image obtained from BGIS)

BIOLOGICAL ENVIRONMENT

MINING AND BIODIVERSITY

(Information extracted from the Mining and Biodiversity Guideline: Mainstreaming Biodiversity into the Mining Sector, Department of Environmental Affairs, Department of Mineral Resources, Chamber of Mines, 2013)

The Mining and Biodiversity Guideline, compiled by the South African Mining and Biodiversity Forum (SAMBF) provides the mining sector with a practical, user-friendly manual for integrating biodiversity considerations into planning processes and managing biodiversity during the developmental and operational phases of a mine, from exploration through to closure.

When the mining footprint is layered over the Mining and Biodiversity Map, as shown in the figure below, it does not fall over and area of any specified for risk of mining therefore the risk is seen to be insignificant. The Mining and Biodiversity Guideline's describes areas of moderate risk biodiversity importance as: "*These areas are of moderate biodiversity value."* The guideline notes that environmental screening, the EIA and specialists should focus on confirming the presence and significance of biodiversity features and provide a site-specific basis on which to apply the mitigation hierarchy to inform regulatory decision-making.

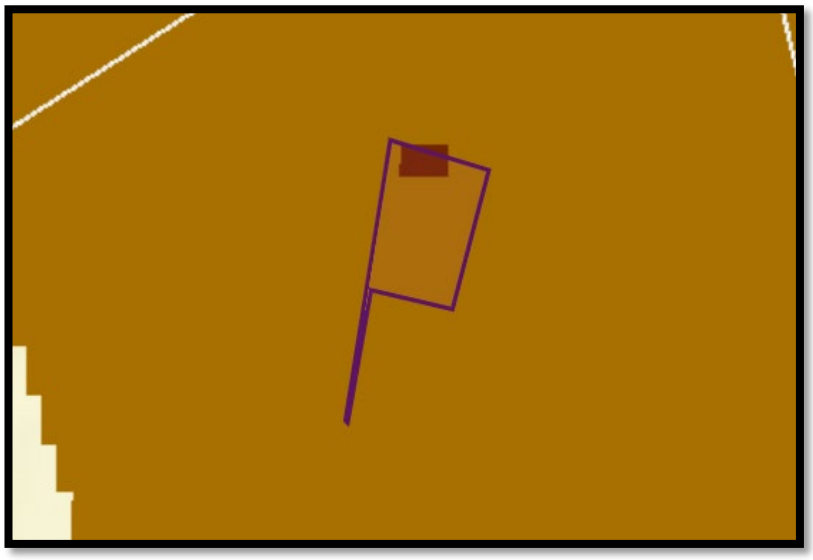


Figure 12: The Mining and Biodiversity importance map with the proposed mining footprint indicated by the purple polygon. Light brown – moderate biodiversity importance, moderate risk for mining, light brown – moderate biodiversity Importance, moderate risk for mining (image obtained from the BGIS Map Viewer – Mining Guidelines).

BIODIVERSITY CONSERVATION AREAS

The Western Cape Biodiversity Plan (WCBP) shows that the proposed mining footprint overlaps a small area within an Ecological Support Area 2: Restore. The category is described to areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs and are often vital for delivering ecosystem services. Restore and/or manage to minimize impact on ecological processes and ecological infrastructure functioning, especially soil and water-related services, and to allow for faunal movement. As well as another small section overlaps areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.

Figure 13: Western Cape Biodiversity Conservation Plan showing the mining area (yellow polygon). (Image obtained from BGIS Map Viewer – Western Cape Conservation Plan).

GROUNDCOVER

According to Mucina and Rutherford (2012) the vegetation type of the surrounding natural areas is known as the FFa 3 Swartland Alluvium Fynbos. The vegetation is a matrix of low, evergreen shrubland with emergent sparse, moderately tall shrubs and a conspicuous graminoid layer. Proteoid, restioid and asteraceous fynbos types are dominant, with closed-scrub fynbos common along the river courses. Ericaceous and restioid fynbos found in seeps.

Some of the important taxa (^{T}Cape thickets, ^{W}Wetlands) Tall Shrubs: *Diospyros glabra*^{T} (d), *Olea europaea* subsp. *africana*^{T} (d), *Psoralea aphylla* (d), *Rhus angustifolia*^{T} (d), *Dodonaea viscosa* var. *angustifolia*, *Metalasia densa*, *Morella*

cordifolia, *Passerina corymbosa*, *Phylica buxifolia*, *Protea repens*, *Rhus incisa*[T], *Rubus rigidus*. Low Shrubs: *Cliffortia ferruginea* (d), *Elytropappus rhinocerotis* (d), *Eriocephalus africanus* var. *africanus* (d), *Leucadendron corymbosum* (d), *Leucospermum calligerum* (d), *Passerina truncata* subsp. *truncata* (d), *Senecio halimifolius* (d), *Serruria candicans* (d), *Athanasia trifurcata*, *Cliffortia juniperina*, *C. ruscifolia*, *Elytropappus gnaphaloides*, *Euryops pinnatipartitus*, *Galenia africana*, *Leucadendron lanigerum* var. *lanigerum*, *L. salignum*, *L. stellare, Oftia africana*, *Plecostachys serpyllifolia*, *Stoebe plumosa*, *Trichocephalus stipularis*. Woody Climber: *Microloma sagittatum*. Herbs: *Conyza pinnatifida*, *Corymbium africanum*, *Dischisma arenarium*, *Lebeckia sepiaria*. Geophytic Herbs: *Pteridium aquilinum* (d), *Zantedeschia aethiopica*[W] (d), *Geissorhiza imbricata* subsp. *bicolor*[W], *G. setacea*, *Mohria caffrorum*, *Oxalis goniorrhiza*, *Spiloxene flaccida*. Herbaceous Climber: *Dipogon lignosus*. Graminoids: *Calopsis paniculata* (d), *Cynodon dactylon* (d), *Elegia filacea* (d), *Ficinia brevifolia* (d), *Ischyrolepis capensis* (d), *I. tenuissima* (d), *Juncus capensis* (d), *Merxmuellera cincta* (d), *Calopsis rigorata*, *Cannomois parviflora*, *Elegia nuta*, *E. recta*, *Eragrostis curvula*, *Pentaschistis curvifolia*, *P. pallida*, *Pycreus polystachyos*[W], *Restio filiformis*, *Thamnochortus fruticosus*, *T. punctatus*, *Willdenowia glomerata*, *W. incurvata*, *W. sulcata*, *W. teres*.

Endemic Taxa ([W]Wetlands) Low Shrubs: *Diastella buekii*, *Erica alexandri*, *E. bakeri*[W], *Marasmodes duemmeri*, *M. undulata*, *Phylica stenopetala*, *Protea mucronifolia*. Succulent Shrub: *Lampranthus schlechteri*. Geophytic Herbs: *Brunsvigia elandsmontana*, *Bulbine monophylla*, *Geissorhiza furva*, *Moraea villosa* subsp. *elandsmontana*.

Conservation Critically endangered. Target 30%. Nearly 10% conserved in the Waterval Nature Reserve, Winterhoek (mountain catchment area) and private reserves such as Elandsberg, Langerug and Wiesenhof Wildpark. More than 75% already transformed for vineyards, olive orchards, pine plantations, urban settlements and by building of the Voëlvlei and Wemmershoek Dams. Alien *Acacia saligna* and *Hakea sericea* are prominent in places. Erosion moderate and very low.

Remarks Previously this was part of renosterveld (e.g. Moll & Bossi 1983, Low & Rebelo 1996), but it is clearly a fynbos type. This unit forms a complicated mosaic with FRs 9 Swartland Shale Renosterveld at its lower extremity, and some of the communities have an ecotonal character, for example where the soils are dominated by clay-rich silts.

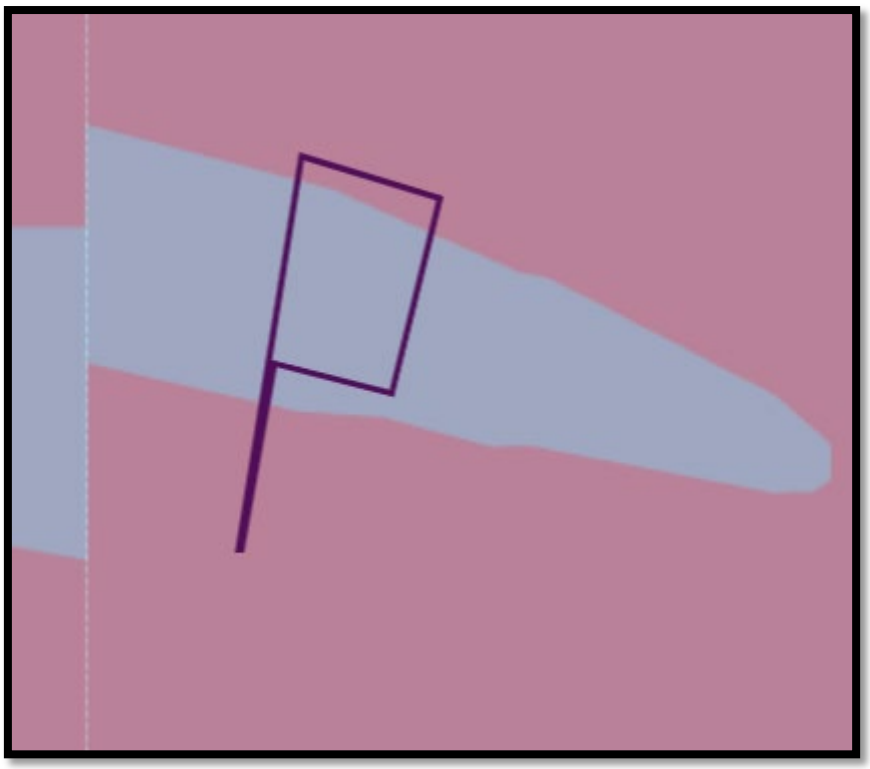


Figure 14: National vegetation cover map showing the mining area within the Swartland Alluvium Fynbos threatened terrestrial ecosystem (FFa 3) (light pink) Swartland Shale Renosterveld threatened terrestrial ecosystem (FRs 9) (Grey). (Image obtained from BGIS Map Viewer – National Vegetation Map).

FAUNA

Various small mammals and reptiles occur are likely to on the property. The fauna at the site will not be impacted by the proposed mining activities as they will be able to move away or through the site, without being harmed. Workers should be educated and managed to ensure that no fauna at the site is harmed. At this stage no resident protected or red data faunal species could be identified within the earmarked footprint. The proposed mining area has previously been used for cattle grazing; however, to prevent any potential incidents, the farm owner has agreed to move the cattle out of this area prior to the start of mining activities. This measure will help ensure the safety of both the cattle and workers on-site. No poaching or hunting of animals will be allowed. All construction vehicles must adhere to a low-speed limit (<40km/h) to avoid collisions with susceptible species such as snakes and tortoises. Trenches and deep excavations should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench.

HUMAN ENVIRONMENT:

CULTURAL AND HERITAGE ENVIRONMENT

The proposed mining footprint was selected over an undisturbed area of the farm with rocky surface used for agriculture (wheat fields / cattle grazing).

The proposed Silty sand and quartzitic sandstone pebbles mining area is located on 5 ha on a portion of portion 2 of the farm Bonne Esperance 83, Tulbagh, Western Cape Province, approximately 11 km northwest of the Gouda Town, Western Cape Province.

The South African Heritage Resources Agency (SAHRA) compiled the Palaeontological (fossil) Sensitivity Map (PSM) to guide developers, heritage officers and practitioners in screening paleontologically sensitive areas at the onset of a project. When the footprint of the earmarked mining area is placed on the PSM, the SAHRIS palaeo-sensitivity map (see https://sahris.sahra.org.za/map/palaeo) the project lies on low sensitivity (blue) rocks and on sands and gravel of unknown palaeosensitivity (white) (as presented in the figure below).

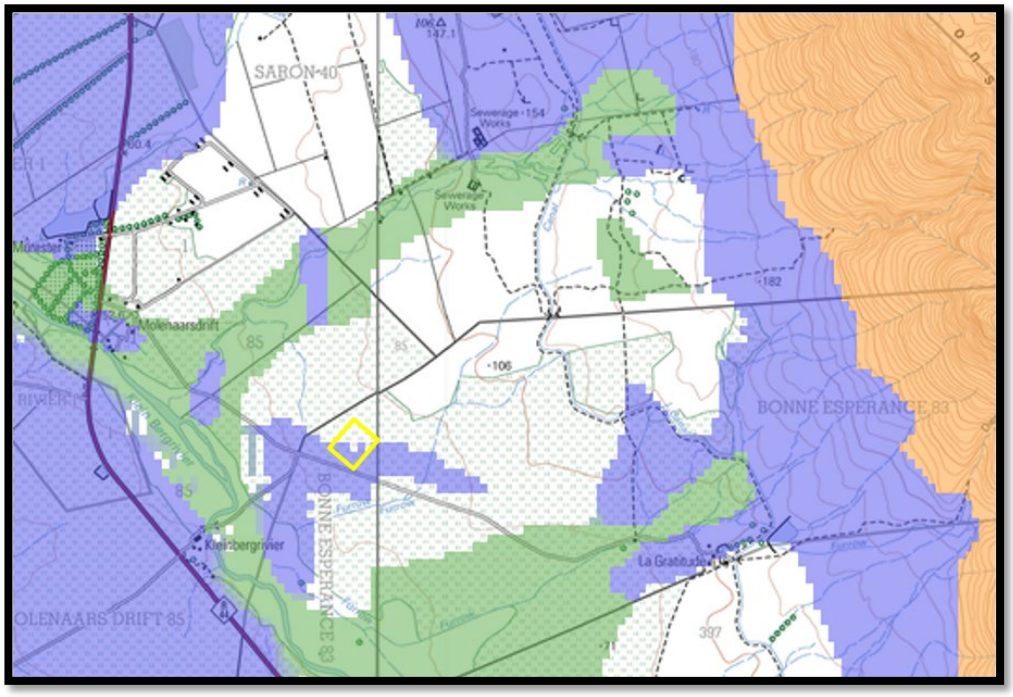


Figure 15: Screenshot from the SAHRIS palaeo-sensitivity map showing the location of the proposed mining area (yellow polygon) Background colours indicate the following degrees of sensitivity: red = very highly sensitive; orange/yellow = high; green = moderate; blue = low; grey = insignificant/zero. (Source: https://sahris.sahra.org.za/map/palaeo).

SOCIO-ECONOMIC ENVIRONMENT

(Information extracted from the Drakenstein Local Municipality Integrated Development Plan – 2024/25 Amendment)

The socio-economic environment of Drakenstein Municipality highlights both its economic strengths and challenges. The municipality has a diverse economy with key contributions from finance, manufacturing, agriculture, and trade, which collectively support economic resilience. The Gross Value Add (GVA) in 2022 was R67 billion, reflecting the municipality's strong financial sector and industrial capacity. However, Drakenstein faces high levels of inequality, with a Gini coefficient of 0.578, partly due to a significant portion of its workforce in low-skilled, low-wage jobs. Unemployment remains a challenge, with an official rate of 18.7% in 2023, though seasonal employment fluctuations suggest the real rate could approach 30%.

The proposed mining area is located within ward 31 of the Drakenstein Local Municipality. Drakenstein Municipality is in South Africa's Cape Winelands District, alongside the Category B municipalities of Stellenbosch, Breede Valley, Witzenberg and Langeberg. The Municipality spans an area of approximately 1 538 km² from Simondium south of the N1 freeway to Saron in the north. Bordered by the Klein Drakenstein, Limiet and Saron Mountain ranges in the east and the agricultural zone to the west of the R45 road, the urban conurbation comprises Paarl, Mbekweni and Wellington, with their respective central business districts in Paarl and Wellington. The outlying hinterland includes smaller rural communities such as Saron and Gouda in the north and Hermon in the mid-west, as well as the adjacent agricultural lands. See the following table for a visual representation of the towns within Drakenstein and its geographic location in the Western Cape Province, South Africa. The Municipality comprises 33 wards.

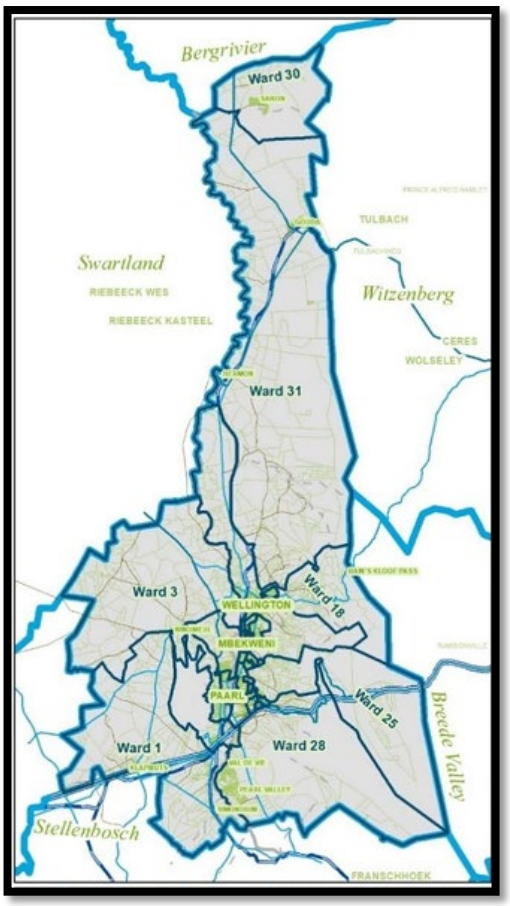


Figure 16: 2021 Ward Demarcation/Location of Drakenstein Municipality (ward 31 is applicable to this application. (Information extracted the Drakenstein Local Municipality Integrated Development Plan – 2024/25 Amendment.)

Population and Household Profile

The population of Drakenstein is 305 281 and the number of households is 76 195. The following table shows the number of households by different ethnic groups. According to Quantec (2023), coloured households represented 54.65% of the total number of households, followed by black African at 28.95%, and white at 16.06%. Indian/Asian households represented the smallest portion of households at 0.34%.

Household Composition by Ethnic Group **Quantec data is regularly updated, and figures may be different from those previously reported.*						
No.	**Ethnic Group**	**2019/2020**	**2020/21**	**% Share 2020/2021**	**2021/2022**	**% Share 2021/2022**
1.	Black	18 838	19 504	28.73%	19 981	28.95%
2.	Coloured	36 313	37 076	54.62%	37 723	54.65%
3.	Indian/Asian	225	231	0.34%	234	0.34%
4.	White	11 056	11 073	16.31%	11 089	16.06%
Total		**66 433**	**67 883**	**100%**	**69 027**	**100%**

Figure 17: Household Composition by Ethnic Group (Information extracted the Drakenstein Local Municipality Integrated Development Plan – 2024/25 Amendment.) - Source: Quantec Research, 2023.

Economic Profile

According to Quantec Research data (2024), the unemployment rate in Drakenstein in 2023 was 18.7%. However, given the seasonal nature of local employment in the agricultural sector, as well as a too-narrow official definition of unemployment, it is estimated that a more realistic unemployment figure could be close to 30%. In this regard, it is useful to refer to the Gini coefficient, a well-known measure of economic or income inequality. The coefficient ranges from 0 to 1, with 0 representing perfect equality and 1 representing perfect inequality. In 2022/23, the Gini coefficient in the Drakenstein municipal area was recorded by Quantec Research as 0.577, a marginal decrease in inequality compared to a recording of 0.578 in 2021/22. Drakenstein's income inequality can largely be attributed to a growing working age population in low-skilled employment, which typically pays low wages. The table below depicts the socio-economic status of the Municipality, including Gini coefficient data.

No.	Year	Unemployment rate	Youth unemployment	% of working age population in low-skilled employment	Gini coefficient	Illiterate people older than 20 years
1.	2020/21	16.1%	23.8%	30.5%	0.579	11.9%
2.	2021/22	19.7%	28.6%	31.5%	0.578	11.7%
3.	2022/23	18.7%	27.3%	29.7%	0.577	11.8%

Figure 18: Socio-Economic (Information extracted the Drakenstein Local Municipality Integrated Development Plan – 2024/25 Amendment.) - Source: Quantec Research, 2023

Economic Development and Urban Renewal.

Economic development remains a priority for the Municipality. The municipal area has become increasingly populated, with the addition of informal structures and new informal settlements. Consequently, urbanisation and renewal are critical to provide excellent service delivery while managing the increase in informal structures. The Municipality established the Development and Urbanisation Steering Committee (DUSC), which invites prospective developers to invest in the municipal area. As the area becomes more developed, it drives economic growth through job creation. The Municipality also developed an Investment Prospectus with the aim of attracting more investment, which will help grow the economy and, as a result, enable maintenance and expansion of the necessary service delivery for the community. Urbanisation and human settlements are discussed in more detail under PDO 31, while economic development and the role of the DUSC are discussed under PDO 27. These two topics are discussed together because one cannot proceed without the other, allowing the Municipality to adopt a multidisciplinary approach. Economic growth and development

are also monitored monthly through the Section 71 Financial Report. As shown in table 6, the economic sectors that made the largest contributions to the Drakenstein economy in 2022/23 were finance, insurance, real estate, and business services (R7.8 billion); wholesale, retail trade, catering and accommodation (R4.8 billion); manufacturing (R4.6 billion); and community, social and personal services (R3.4 billion). Other sectors that also contributed significantly in 2022/23 included general government (R2.9 billion); agriculture, forestry and fishing (R1.9 billion); transport, storage and communication (R1.9 billion); and construction (R1.4 billion).

No.	Sector	R'000 000		
		2020/2021	2021/2022	2022/2023
*Quantec data is regularly updated, and figures may be different from those previously reported.				
1.	Agriculture, Forestry and Fishing	1,690	1,799	1,969
2.	Mining and Quarrying	61	73	78
3.	Manufacturing	3,965	4,363	4,621
4.	Electricity, Gas and Water	566	630	712
5.	Construction	1,358	1,411	1,446
6.	Wholesale, Retail Trade, Catering and Accommodation	3,892	4,550	4,878
7.	Transport, Storage and Communication	1,589	1,718	1,948
8.	Finance, Insurance, Real Estate and Business Services	6,813	7,358	7,854
9.	General government	2,727	2,808	2,900
10.	Community, Social and Personal Services	2,947	3,268	3,409
Total		**25,613**	**27,982**	**29,820**

Figure 19: Gross Value Added per Economic Sector within Drakenstein - Source: Statistics South Africa: Census 2001 - 2011.

Education

In Drakenstein Municipality, education is a key factor in promoting socio-economic development and improving residents' quality of life. The municipality has 75 public primary and high schools, three special schools, one university campus, and three further education and training (FET) colleges, primarily located in Wellington. Learner enrolment has shown growth, with over 50,000 learners in 2020, marking a 1.8% increase since 2018. However, the learner retention rate decreased to 66.4% in 2020, signaling challenges like job losses and high unemployment among low-skilled workers.

The municipality's matriculation pass rate has remained relatively strong, reaching 83.7% in 2020, which is higher than the district average. Despite improvements in the number of households receiving basic services, dropout rates among Grade 12 learners remain a concern, driven by economic factors, limited job opportunities, poverty, and social issues such as teenage pregnancies.

Additionally, ten schools in Drakenstein are equipped with libraries and media centres, supporting access to educational resources. The municipality recognizes education's role in shaping a productive workforce and reducing poverty, making it a priority within its development plans.

(b) Description of the current land uses

A portion of portion 2 of the farm Bonne Esperance 83, Tulbagh, Western Cape Province is situated in a rural setting. The R44 forms the south-eastern boundary of the farm. The land use of the proposed mining area on the property mainly comprises of inactive agricultural land.

The main land use of the surrounding properties is agricultural. The following table provides a description of the land uses and/or prominent features that currently occur within a 500 m radius of the proposed site:

Table 11: Land uses and/or prominent features that occur within 500 m radius of S1.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area is surrounded by natural areas used for agricultural (wheat fields) purposes.
Low density residential	-	**NO**	
Medium density residential	-	**NO**	
High density residential	-	**NO**	
Informal residential	-	**NO**	
Retail commercial & warehousing	-	**NO**	
Light industrial	-	**NO**	
Medium industrial	-	**NO**	
Heavy industrial	-	**NO**	

LAND USE CHARACTER	YES	NO	DESCRIPTION
Power station	-	**NO**	
High voltage power line	-	**NO**	
Office/consulting room	-	**NO**	
Military or police base / station / compound	-	**NO**	
Spoil heap or slimes dam	-	**NO**	
Quarry, gravel or borrow pit	-	**NO**	
Dam or reservoir		**NO**	
Hospital/medical centre	-	**NO**	
School/ crèche	-	**NO**	
Tertiary education facility		**NO**	
Church	-	**NO**	
Old age home	-	**NO**	
Sewage treatment plant	-	**NO**	
Train station or shunting yard	-	**NO**	
Railway line	-	**NO**	
Major road (4 lanes or more)	-	**NO**	
Airport	-	**NO**	.
Harbour	-	**NO**	
Sport facilities	-	**NO**	
Golf course	-	**NO**	
Polo fields	-	**NO**	
Filling station	-	**NO**	
Landfill or waste treatment site	-	**NO**	
Plantation	-	**NO**	
Agriculture	-	**NO**	The proposed footprint is inactive but still forms part of an agricultural active farm.
River, stream or wetland		**NO**	
Nature conservation area	-	**NO**	
Mountain, hill or ridge		**NO**	
Museum	-	**NO**	
Historical building	-	**NO**	
Protected Area	-	**NO**	
Graveyard	-	**NO**	
Archaeological site	-	**NO**	
Other land uses (describe)	**YES**		The entrance road to the application area passes Naledi Resort accommodation farm to the right and a chicken farm on the left.

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

SPECIFIC ENVIRONMENTAL FEATURES

SITE SPECIFIC TOPOGRAPHY

The area surrounding Gouda predominantly consists of low-lying, gently undulating plains which are utilized extensively for agriculture, especially for grain farming and vineyards. These plains are bordered by steep, rugged mountains that rise dramatically from the valley floor, creating a picturesque contrast and adding to the area's scenic value. The topography is also shaped by the Berg River, which flows northward and provides an essential water source, supporting both agricultural and ecological needs in the region.

The site lies at an elevation of approximately 100 meters above sea level. This elevation places it within the relatively low-lying Breede River Valley, which is bordered by dramatic mountainous terrain that influences the region's microclimates and landscape. The valley itself is characterized by flat to gently rolling plains, ideal for agriculture, with fertile soils supporting extensive grain farming and vineyards.

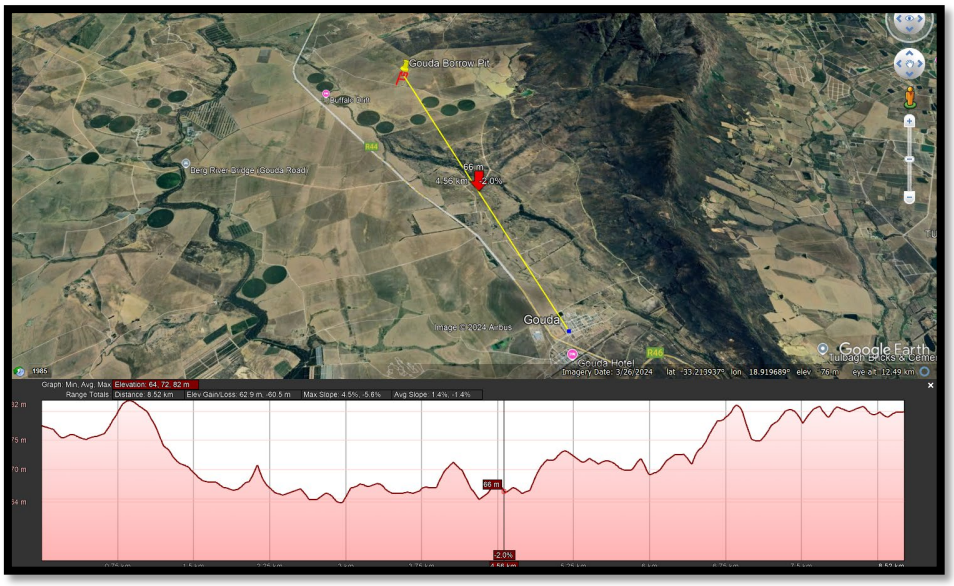


Figure 20: Elevation profile of the proposed mining footprint (Image obtained from Google Earth).

SITE SPECIFIC VISUAL CHARACTERISTICS

The proposed mining activities will be visible within close proximity (±1 km radius) of the footprint. However, as one moves away the visibility of the area greatly lessens. The figure below shows the viewshed analysis for the footprint within a ±10 km radius. The green shaded areas show the positions from where the mining area will be visible. The viewshed analysis indicated that the proposed mining operation for silty sand and quartzitic sandstone pebbles will have a low visual impact. Although the mining area will be visible from the public road (R44), approximately 2.5 km away, the temporary nature and small scale of the excavation activities mean that the impact will be minimal. The mining will involve equipment similar to that used in farming operations, further blending into the agricultural landscape. Following successful rehabilitation of the site upon closure of the mine, no lasting visual impact is anticipated.

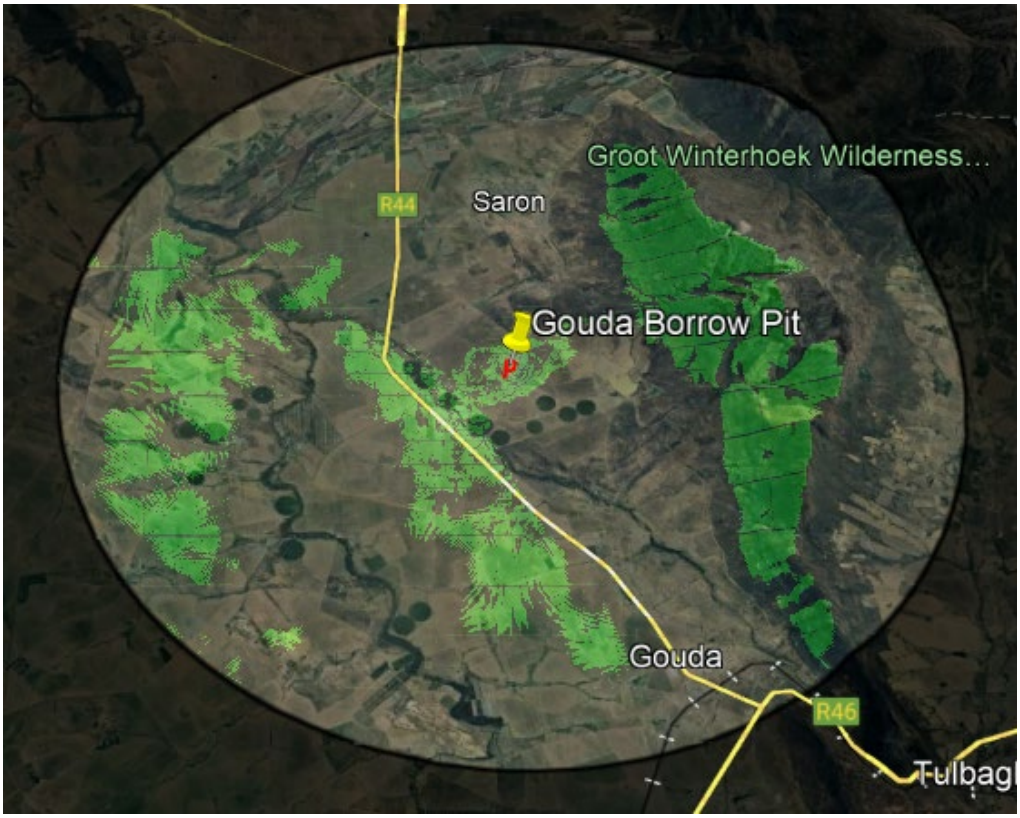


Figure 21: Viewshed of the proposed mining footprint where the green shaded areas show the positions from where the mining area (Proposed mining area) will be visible. (Image obtained from Google Earth).

SITE SPECIFIC AIR AND NOISE QUALITY

Air quality in the study area is generally good due to its rural location and lower levels of industrial activity compared to urban areas. However, dust generation from agriculture, unpaved roads, and construction activities can impact local air quality, especially during dry and windy seasons. For the proposed borrow pit, specific measures will be required to mitigate dust emissions, such as the use of water spray systems on haul roads and dust suppressants on exposed soil.

Emission into the atmosphere is controlled by the National Environmental Management: Air Quality Act, 2004. The proposed mining activity does not trigger an application in terms of the said act. The proposed activity will contribute the emissions mechanical mining equipment to the receiving environment for the duration of the operational phase. Should the permit holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use.

Noise levels in the area are typically low, reflecting its rural character and distance from major urban centres. However, periodic noise sources include agricultural machinery, transport trucks on regional roads, and operational sounds from the wind

farms. The construction and operation of the borrow pit may temporarily increase noise levels, particularly from excavating machinery, loading, and transporting materials. To manage this, operations will likely be limited to daylight hours, and noise-dampening equipment and barriers can help minimize disturbance to nearby residents and wildlife.

Overall, the areas air and noise quality are maintained at favourable levels, but development projects will require careful planning and monitoring to avoid significant impacts on the local environment and community well-being.

The potential impact on the noise ambiance of the receiving environment is expected to be of low significance.

SITE SPECIFIC GEOLOGY AND SOIL

The geology of the proposed borrow pit site is primarily composed of phyllite shale, schist, and greywacke from the Porterville Formation within the Malmesbury Group. Some areas are covered by alluvium, terrace gravel, and talus deposits on the midslopes. The site's soil classification falls within the Db48 land type, characterized by moderately deep, medium-textured soils with a fairly uniform composition. These soils are generally suited for rainfed crop production but have limitations such as a high stone content, which reduces their water-holding capacity and may impact productivity in drier periods.

According to the Agriculture Assessment Report (Appendix M), the specialist concluded that with effective mitigation measures, including careful soil management, erosion control, and post-mining rehabilitation, the impact on agricultural productivity can be minimized. These steps are essential to restoring the land for agricultural use and preserving its economic and ecological value within the region. Overall, while the proposed mining activities may temporarily alter the agricultural landscape, proper rehabilitation and management will allow for the sustainable use of the land in the future. Therefore, from an agricultural impact point of view, it is recommended that the development be approved.

SITE SPECIFIC HYDROLOGY

The proposed application falls within a critical hydrological region characterized by its proximity to the Berg River, a key water resource that supports agriculture, industry, and ecological needs. The Department of Water and Sanitation (DWS) classifies the area within the Berg-Olifants Water Management Area (WMA), one of South Africa's primary water management regions. This WMA is managed to ensure sustainable water supply and quality, balancing the needs of urban development, agriculture, and conservation.

The Berg River, originating in the Franschhoek Mountains and flowing northward, is the primary catchment area for Gouda. This river and its tributaries serve as an essential source of water, with Gouda specifically located within the Lower Berg sub-catchment. Water flow in this region is seasonal and influenced by winter rainfall, contributing to the river's variable flow rates and necessitating efficient water management.

The proposed project does not require a Water Use Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No 36 of 1998). As mentioned earlier, no activity will take place in or within 500 m radius of any water bodies. Any water required for the implementation of the project will be sourced from an authorised source and transported to site. The use of potable water for dust suppression should be avoided which necessitates a water use license application in terms of Section 21 of the NWA, 1998. This was confirmed by the Risk Matrix Assessment (please see Appendix M1). Water required for the implementation of the project will be sourced from an authorised source and transported to site.

The National Web-based Environmental Screening Tool has characterised the aquatic sensitivity of the project area (mining area) as “Low”. The desktop assessment and site visit agreed with this rating.

The site-specific hydrology of the proposed development area indicates that the area includes a significant non-perennial stream located within 100 meters of the mining footprint. This stream has been extensively canalised and modified due to surrounding agricultural activities, influencing its natural hydrological flow and overall ecological condition. Additionally, approximately 1 km from the proposed site lies the Berg Klein River, a perennial water body that is unlikely to be impacted by the mining activities, given the distance and nature of the operation.

A small non-prioritised man-made wetland is located within 500 meters of the site. This wetland, resembling a dam system, could potentially extend into the project area. However, the extensive history of agricultural use suggests significant degradation of this wetland. The potential interaction of the borrow pit with this hydrological feature is an important consideration, especially concerning runoff and erosion risks. Changes to surface and subsurface hydrology could result from excavation activities, potentially impacting local water flow and promoting sedimentation.

With the implementation of mitigation measures the risks/impacts will remain Low if done effectively.

SITE SPECIFIC MINING AND BIODIVERSITY CONSERVATION AREAS

As was already indicated, the mining footprint falls over an area with a moderate relevance for biodiversity and a corresponding grade of moderate risk for mining when it is overlaid over the Mining and Biodiversity Map. Areas of intermediate risk biodiversity importance are listed as follows in the Mining and Biodiversity Guidelines: "*These areas are of moderate biodiversity value."* The guideline notes that environmental screening, the EIA and specialists should focus on confirming the presence and significance of biodiversity features and provide a site-specific basis on which to apply the mitigation hierarchy to inform regulatory decision-making.

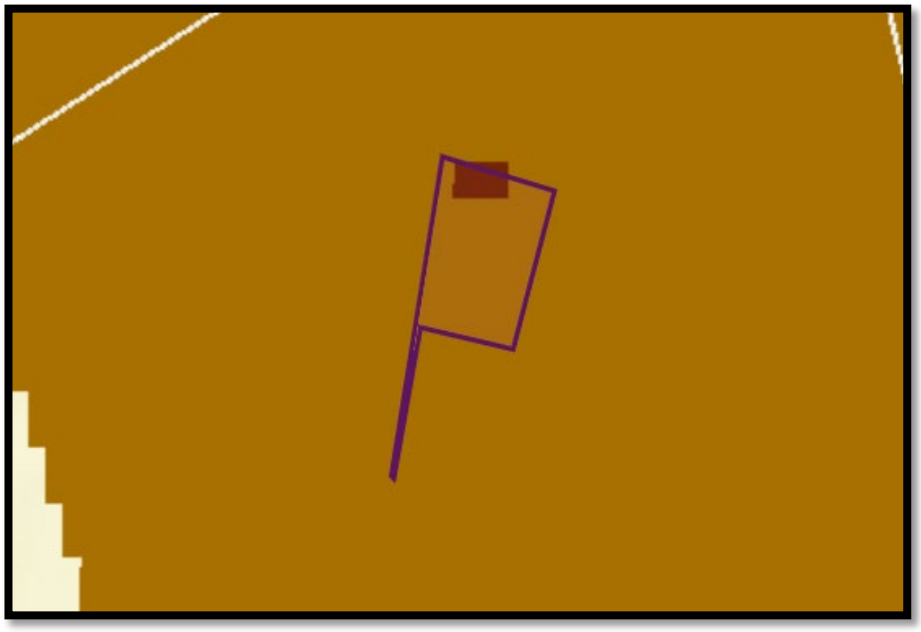
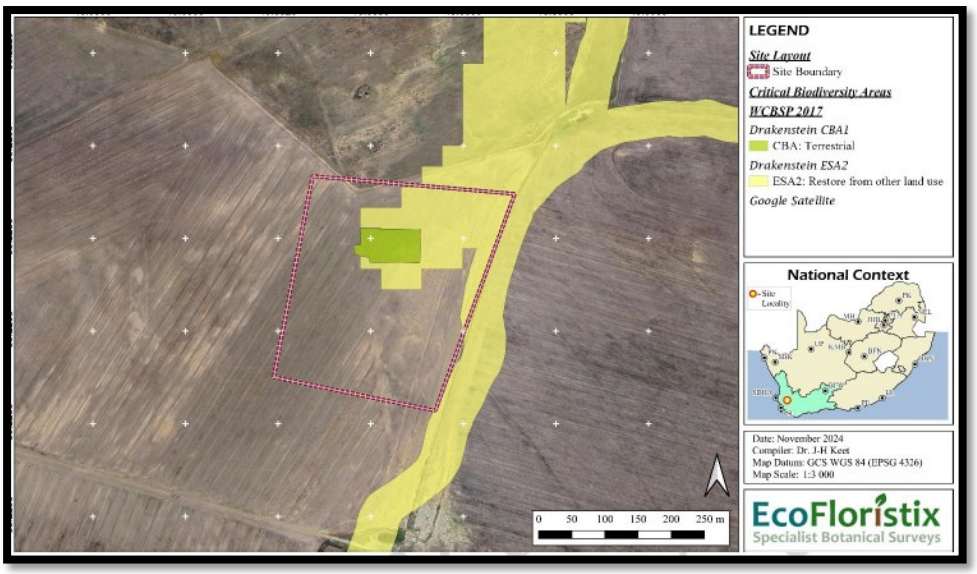


Figure 22: The Mining and Biodiversity importance map with the proposed mining footprint indicated by the purple polygon. Light brown – moderate biodiversity importance, moderate risk for mining, light brown – moderate biodiversity Importance, moderate risk for mining (image obtained from the BGIS Map Viewer – Mining Guidelines).

Impact Statement

An impact statement is required as per the NEMA regulations with regards to the proposed development. The impact statement for the mining permit project on Bonne Esperance Farm 83 as per the Terrestrial Biodiversity Impact Assessment Report (Appendix M2) highlights several ecological and environmental considerations. Key points include:

The proposed development site is located within an area mapped as "CBA1: Terrestrial" and "ESA2: Restore from other land use" illustrated in the figure below;



The CBA1 area does not accurately reflect the situation on site since it occurs within an agricultural field. Furthermore, the ESA classification also does not accurately reflect the situation on site and is likely correlated with the presence of a small, modified watercourse occurring on the eastern side of the proposed development site. Ground truthing confirmed that no SCC occur within the proposed development site, or within 200 m (the minimum required buffer zone for plant SCC according to the SANBI Species Environmental Assessment Guideline) of the proposed development site boundary.

No alien or NEM:BA A&IS Regulations listed species were observed in the proposed development site. Management of any occurring IAPs is necessary throughout the project lifecycle to prevent ecological imbalance.

The Relative Biodiversity Theme Sensitivity for the proposed development site and surrounds, according to the online screening tool, was scored as “Very High”. This is due to the proposed development site being mapped to occur within CBA 1 (Terrestrial), ESA 2 (Restore from other land use), and two threatened ecosystems (Swartland Alluvium Fynbos [EN] and Swartland Shale Renosterveld [CR]). Ground truthing confirmed that almost the entire proposed development site overlies an active agricultural field, and the site therefore does not qualify for CBA or ESA criteria. Also, neither Swartland Alluvium Fynbos nor Swartland Shale Renosterveld occur on site. The true Relative Biodiversity Theme Sensitivity of the site can instead be considered as “Low” according to the criteria given by Government Notice 320 of Government Gazette 43110 (March 2020).

SITE SPECIFIC GROUNDCOVER

The site-specific groundcover of the mining area consists of within the proposed development area, describing various vegetation communities and their ecological importance. The assessment reveals that the development area primarily consists of disturbed farmland communities with minimal remaining natural habitat and low ecological significance due to ongoing agricultural impacts. Specific observations include:

Farmland Community (Variant A and B) - Classified as "Very Low" in terms of conservation and functional integrity. The site has no natural connectivity, and it is unlikely to recover its original species composition due to the extensive disturbances from farming activities.

Riparian Community - A small area classified similarly as "Very Low" because it borders a modified perennial stream and does not represent true riparian vegetation due to surrounding impacts.

The assessment concludes that these areas are not designated as "No-Go" zones, meaning they do not hold substantial biodiversity value warranting strict protection, thus minimizing potential ecological impacts if developed

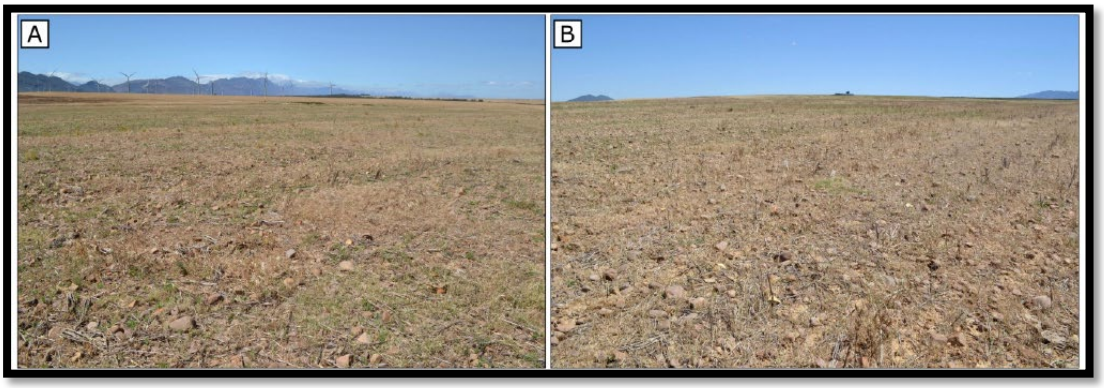


Figure 23: Various photos representative of the proposed development site and surrounds, which aim to show the site-specific vegetation and its condition. A and B represent the farmland plant community type "variant A" information obtained from the Terrestrial Biodiversity Impact Assessment Report (Appendix M2),

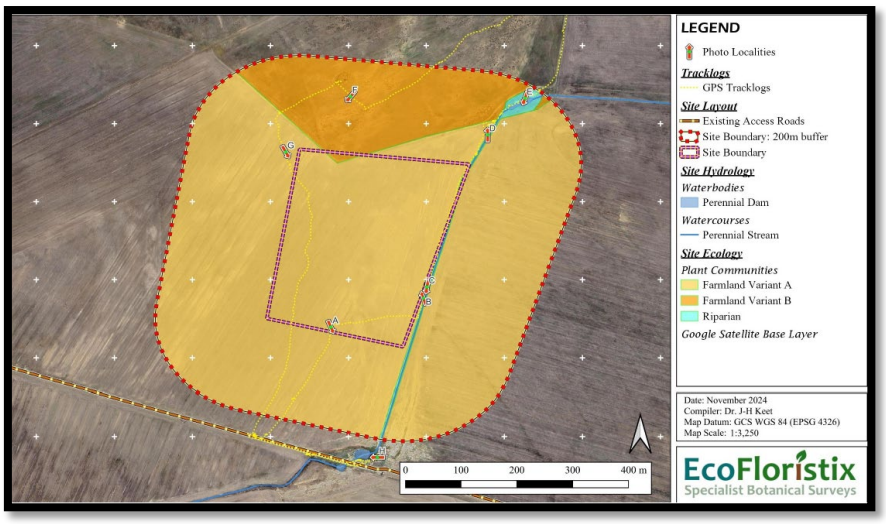


Figure 24: Plant communities that were observed in the proposed development site and surrounds, as well as general site ecology and other relevant information. - information obtained from the Terrestrial Biodiversity Impact Assessment Report (Appendix M2),

According to the Terrestrial Biodiversity Assessment report (Appendix M2) the site's groundcover primarily consists of fallow agricultural land with no intact patches of the Swartland Alluvium Fynbos or Swartland Shale Renosterveld, two nationally significant vegetation types nearby. Although Swartland Shale Renosterveld is classified as Critically Endangered and Swartland Alluvium Fynbos as Endangered, no remnants of these ecosystems are within the development boundary. Ground truthing confirmed that no SCC occur within the proposed development site, or within 200 m (the minimum required buffer zone for plant SCC according to the SANBI Species Environmental Assessment Guideline) of the proposed development site boundary.

Construction Phase

During construction, impacts will include the removal of vegetation, topsoil stripping, and ground disturbance and temporary habitat disruption. With proper mitigation these impacts can be managed. Alien species control will also be necessary to prevent invasive plants from taking hold on disturbed soil.

Operational Phase

The area through continuous excavation, stockpiling, and material transport, affecting soil stability and leading to further plant loss. Implementing dust control, restricted access, and ongoing alien plant management can help to minimize these impacts. The operation's design, which involves mining small sections in phases, followed by immediate rehabilitation, will limit prolonged exposure and prevent extensive ecological degradation.

Potential Cumulative Impacts

The cumulative impacts may include long-term habitat modification and increased risk of invasive species. Given that surrounding regions are already significantly modified for agriculture, the project's isolated ecological footprint may add minimal further degradation at a larger scale. However, proactive rehabilitation and strict control of invasive plants can help ensure the site's ecological resilience and compatibility with surrounding landscapes.

Conclusion

Overall, with phased mining and careful rehabilitation and alien plant management the project's impacts on local vegetation and ecosystem integrity are expected to be minimal and manageable. Implementing the recommended Environmental Management Programme (EMPr) will support the eventual ecological recovery of the site post-mining.

SITE SPECIFIC FAUNA

Various small mammals and reptiles occur are likely to on the property. The fauna at the site will not be impacted by the proposed mining activities as they will be able to move away or through the site, without being harmed. Workers should be educated and managed to ensure that no fauna at the site is harmed. At this stage no resident protected or red data faunal species could be identified within the earmarked footprint. The proposed mining area has previously been used for cattle grazing; however, to prevent any potential incidents, the farm owner has agreed to move the cattle out of this area prior to the start of mining activities. This measure will help ensure the safety of both the cattle and workers on-site. No poaching or hunting of animals will be allowed. All construction vehicles must adhere to a low-speed limit (<40km/h) to avoid collisions with susceptible species such as snakes and tortoises. Trenches and deep excavations should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench.

SITE SPECIFIC CULTURAL AND HERITAGE ENVIRONMENT

The proposed mining project on Portion 2 of Farm Bonne Esperance 83, located between Gouda and Saron, Western Cape, is set within an area that holds various cultural and heritage considerations. Below are the specific impacts and observations relevant to this site:

1. Cultural and Heritage Landscape

Historical Significance: The town of Saron, located over 4 km from the proposed mining site, has notable historical importance, beginning as a mission station in the mid-19th century. The structures in the historical core of Saron and nearby areas are of cultural interest, but due to the significant distance, the direct impact of the proposed mining activity on these resources is minimal.

The mountains to the east of the site are considered visually significant cultural features. The proposed mining activities, due to their relatively small scale and temporary nature, are not expected to result in substantial long-term alterations to the visual landscape.

The site has shown evidence of Early Stone Age artefacts, with only eight artefacts identified during preliminary assessments. This density is considerably lower than other nearby areas that warranted extensive mitigation. Consequently, the mining activities are anticipated to have a negligible impact on archaeological resources, as the artefacts present do not indicate significant archaeological deposits.

The site lies on Quaternary sand, terrace gravels, and metamorphosed rocks of the Porterville Formation, part of the Malmesbury Group. These formations, formed around 550 million years ago during the Pan-African orogeny, have experienced significant metamorphic processes that would have destroyed any original fossils if present.

According to the SAHRIS palaeosensitivity map, the site lies on formations with low to unknown sensitivity. The overlying sediments of sands and gravels are highly mobile and lack the fine-grained, low-energy conditions required for fossil preservation. Consequently, the potential for fossil finds is minimal.

Although the likelihood of significant fossil discovery is very low, a Fossil Chance Find Protocol has been recommended by the specialist. This protocol ensures that any unexpected palaeontological material encountered during excavation is handled appropriately and reported to Heritage Western Cape for further action.

Anticipated Impacts of Mining Activity:

<u>Archaeological:</u>

Negligible impact due to the sparse presence of Early Stone Age artefacts.

Paleontological:

No significant impact anticipated due to the low palaeosensitivity of the site. The implementation of a Fossil Chance Find Protocol will safeguard any potential but unlikely discoveries.

While the site is situated within a region of cultural and natural importance, the mining activities are unlikely to significantly disturb the identified heritage resources, archaeological findings, or paleontological context. Appropriate mitigation measures, such as adherence to heritage protocols and monitoring during excavation, will ensure compliance with heritage conservation requirements.

Should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the surrounding area in general is deemed to be of low significance. In light of this, a Heritage Impact Assessment was not deemed necessary by the heritage specialist.

SITE SPECIFIC INFRASTRUCTURE

No infrastructure has been established on the property that can be affected by the proposed development.

During the environmental impact assessment process, the feasibility of the proposed site was assessed to identify fatal flaws that are deemed as severe as to prevent the activity continuing or warrant a site or project alternative. The outcome of the assessment showed that should the mitigation measures and monitoring programmes proposed in this document be implemented, no fatal flaws could be identified that prevents the activity continuing.

(d) Environmental and current land use map.

(Show all environmental and current land use features)

The environmental and current land use map is attached as Appendix B.

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

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

The following potential impacts were identified of each main activity in each phase of the proposed project. The significance rating was determined using the methodology as explained under *vi) Methodology Used in Determining and Ranking the Significance*. The impact rating listed below was determined for each impact **prior** to bringing the proposed mitigation

measures into consideration. The degree of mitigation indicates the possibility of partial, full or no mitigation of the identified impact.

SITE ESTABLISHMENT & INFRASTRUCTURE DEVELOPMENT:

Alteration of the agricultural sense of place

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
2	2	1	1.6	5	2	3.5	**5.6**				

Loss of agricultural land for duration of mining

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
2	4	1	2.3	5	5	5	**11.5**				

Visual intrusion as a result of site establishment

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
2	2	1	1.6	4	3	3.5	**5.6**				

Potential impact on fauna within the footprint area

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Potential impact on vegetation and listed and/or protected plant species

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
1	4	1	2	1	2	1.5	**3**				

Dust nuisance due to site establishment

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	4	1	2.6	4	3	3.5	**9.1**				

Potential impact on archaeological artefacts

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	5	5	4	1	1	1	**4**				

New job opportunities as a result of the mining operation (Positive Impact)

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: N/A**				
4	4	5	4.6	5	5	5	**23**				

CONSTRUCTION OF SITE ACCESS ROAD:

Visual intrusion caused by construction of site access road

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
3	3	1	2.3	4	2	3	**6.9**				

Loss of stockpiled topsoil during construction of access road

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
1	1	1	1	1	1	1	**1**				

Dust nuisance as a result of the construction of access road

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	3	2	2.3	4	4	4	**9.2**				

Noise nuisance generated by earthmoving machinery

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	3	2	2.3	4	4	4	**9.2**				

Potential erosion of denuded areas

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	**6.9**				

Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

STRIPPING AND STOCKPILING OF TOPSOIL AND/OR OVERBURDEN:

Visual intrusion caused by mining activities.

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
3	3	1	2.3	4	4	4	**9.2**				

Loss of stockpiled topsoil during mining and stockpiling (no topsoil available on site)

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
1	1	1	1	1	1	1	**1**				

Dust nuisance as a result of the disturbance of soil

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	3	2	2.3	4	4	4	**9.2**				

Noise nuisance generated by earthmoving machinery

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	3	2	2.3	4	4	4	**9.2**				

Potential impact on local fauna due to disturbance and loss of available habitat

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	4	4	4	**9.2**				

Potential erosion of denuded areas

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	**6.9**				

Loss of stockpiled material due to ineffective storm water control

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	**6.9**				

Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

EXCAVATION, LOADING AND HAULING TO THE PROCESSING PLANT

Visual intrusion as a result of excavation and from loading and vehicles transporting the material

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance				
							Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
3	3	1	2.3	4	2	3	**6.9**				

Dust nuisance due to excavation and from loading and vehicles transporting the material

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance				
							Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

Noise nuisance as a result of the mining activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance				
							Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	**6.9**				

Unsafe working environment for employees

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance				
							Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

Soil contamination from hydrocarbon spills and/or littering

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance				
							Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	4	1	2.6	4	5	4.5	**11.7**				

Potential impact on areas of palaeontological concern

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance				
							Low	Low-Medium	Medium	Medium-High	High
							1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Facilitation of erosion due to mining activities

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	6.9				

PROCESSING, STOCKPILING AND TRANSPORTING OF MATERIAL:

Dust nuisance generated at the processing plant

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	**6.9**				

Noise nuisance stemming from operation of the processing plant

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	**6.9**				

Visual intrusion as a result of operation of the processing plant

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	**6.9**				

Potential contamination of environment due to improper waste management

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

Overloading of trucks impacting road infrastructure

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	4	1	2.6	4	4	4	**10.4**				

Degradation of the access road

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	4	2	3	4	5	4.5	**13.5**				

CUMULATIVE IMPACTS:

Long-term habitat modification.

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Partial**				
2	2	1	1.6	4	3	3.5	**5.6**				

Increased risk of invasive species.

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Partial**				
3	3	1	2.3	4	4	4	**9.2**				

Impact on existing infrastructure as a direct result of the mining operation

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
3	4	1	2.6	4	4	4	**10.4**				

SLOPING AND LANDSCAPING DURING REHABILITATION:

Safety risk posed by un-sloped areas

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	5	1	3	4	5	4.5	**13.5**				

Erosion of returned topsoil after rehabilitation

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
1	1	1	1	1	1	1	**1**				

Infestation of the reinstated areas by weeds and invader plant species

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	4	1	2.6	4	4	4	**10.4**				

Potential impact associated with litter/waste left at the mining area

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	4	1	2.6	4	4	4	**10.4**				

Return of the mining area to landscape feature upon closure (Positive Impact)

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: N/A**				
3	5	1	3	5	5	5	**15**				

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

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

Methodology for the assessment of the potential environmental, social and cultural impacts

DEFINITIONS AND CONCEPTS:

Environmental significance:

The concept of significance is at the core of impact identification, evaluation and decision-making. The concept remains largely undefined and there is no international consensus on a single definition. The following common elements are recognised from the various interpretations:

- Environmental significance is a value judgement.

- The degree of environmental significance depends on the nature of the impact
- The importance is rated in terms of both biophysical and socio-economic values
- Determining significance involves the amount of change to the environment perceived to be acceptable to affected communities.

Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of acceptability) (DEAT (2002) Impact Significance, Integrated Environmental Management, Information Series 5).

The concept of risk has two dimensions, namely the consequence of an event or set of circumstances, and the likelihood of particular consequences being realised (Environment Australia (1999) Environmental Risk Management).

Impact

The positive or negative effects on human well-being and / or the environment.

Consequence

The intermediate or final outcome of an event or situation OR it is the result, on the environment, of an event.

Likelihood

A qualitative term covering both probability and frequency.

Frequency

The number of occurrences of a defined event in a given time or rate.

Probability

The likelihood of a specific outcome measured by the ratio of a specific outcome to the total number of possible outcomes.

Environment

Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation (ISO 14004, 1996).

Methodology that will be used

The environmental significance assessment methodology is based on the following determination:

Environmental Significance = Overall Consequence X Overall Likelihood

Determination of Overall Consequence

Consequence analysis is a mixture of quantitative and qualitative information, and the outcome can be positive or negative. Several factors can be used to determine consequence. For the purpose of determining the environmental significance in terms of consequence, the following factors were chosen: ***Severity/Intensity, Duration and Extent/Spatial Scale***. Each factor is assigned a rating of 1 to 5, as described in the tables below.

Determination of Severity / Intensity

Severity relates to the nature of the event, aspect or impact to the environment and describes how severe the aspects impact on the biophysical and socio-economic environment.

The table below will be used to obtain an overall rating for severity, taking into consideration the various criteria.

Table 12: Table to be used to obtain an overall rating of severity, taking into consideration the various criteria.

Type of criteria	Rating				
	1	2	3	4	5
Quantitative	0-20%	21-40%	41-60%	61-80%	81-100%
Qualitative	Insignificant / non-harmful	Small / Potentially harmful	Significant/ Harmful	Great/ Very harmful	Disastrous Extremely harmful
Social/ Community response	Acceptable / I&AP satisfied	Slightly tolerable / Possible objections	Intolerable/ Sporadic complaints	Unacceptable / Widespread complaints	Totally unacceptable / Possible legal action
Irreversibility	Very low cost to mitigate/ High potential to mitigate impacts to level of insignificance/ Easily reversible	Low cost to mitigate	Substantial cost to mitigate/ Potential to mitigate impacts/ Potential to reverse impact	High cost to mitigate	Prohibitive cost to mitigate/ Little or no mechanism to mitigate impact Irreversible
Biophysical (Air quality, water quantity and quality, waste production, fauna and flora)	Insignificant change / deterioration or disturbance	Moderate change / deterioration or disturbance	Significant change / deterioration or disturbance	Very significant change / deterioration or disturbance	Disastrous change / deterioration or disturbance

Determination of Duration

Duration refers to the amount of time that the environment will be affected by the event, risk or impact, if no intervention e.g. remedial action takes place.

Table 13: Criteria for the rating of duration.

Rating	Description
1	Up to ONE MONTH
2	ONE MONTH to THREE MONTHS (QUARTER)
3	THREE MONTHS to ONE YEAR
4	ONE to TEN YEARS
5	Beyond TEN YEARS

Determination of Extent/Spatial Scale

Extent or spatial scale is the area affected by the event, aspect or impact.

Table 14: Criteria for the rating of extent / spatial scale.

Rating	Description
1	Immediate, fully contained area
2	Surrounding area
3	Within Business Unit area of responsibility
4	Within the farm/neighbouring farm area
5	Regional, National, International

Determination of Overall Consequence

Overall consequence is determined by adding the factors determined above and summarized below, and then dividing the sum by 3.

Table 15: Example of calculating overall consequence.

Consequence	Rating
Severity	Example 4
Duration	Example 2
Extent	Example 4
SUBTOTAL	**10**
TOTAL CONSEQUENCE: (Subtotal divided by 3)	**3.3**

Determination of Likelihood:

The determination of likelihood is a combination of Frequency and Probability. Each factor is assigned a rating of 1 to 5, as described below and in tables 6 and 7.

Determination of Frequency

Frequency refers to how often the specific activity, related to the event, aspect or impact, is undertaken.

Table 16: Criteria for the rating of frequency.

Rating	Description
1	Once a year or once/more during operation
2	Once/more in 6 Months
3	Once/more a Month
4	Once/more a Week
5	Daily

Determination of Probability

Probability refers to how often the activity or aspect has an impact on the environment.

Table 17: Criteria for the rating of probability.

Rating	Description
1	Almost never / almost impossible
2	Very seldom / highly unlikely
3	Infrequent / unlikely / seldom
4	Often / regularly / likely / possible
5	Daily / highly likely / definitely

Overall Likelihood

Overall likelihood is calculated by adding the factors determined above and summarised below, and then dividing the sum by 2.

Table 18: Example of calculating overall likelihood.

Consequence	Rating
Frequency	Example 4
Probability	Example 2
SUBTOTAL	**6**
TOTAL LIKELIHOOD (Subtotal divided by 2)	**3**

Determination of Overall Environmental Significance:

The multiplication of overall consequence with overall likelihood will provide the environmental significance, which is a number that will then fall into a range of **LOW**, **LOW-MEDIUM**, **MEDIUM**, **MEDIUM-HIGH** or **HIGH**, as shown in the table below.

Table 19: Determination of overall environmental significance.

Significance or Risk	Low	Low-Medium	Medium	Medium-High	High
Overall Consequence X Overall Likelihood	1 – 4.9	5 – 9.9	10 – 14.9	15 – 19.9	20 – 25

Qualitative description or magnitude of Environmental Significance

This description is qualitative and is an indication of the nature or magnitude of the Environmental Significance. It also guides the prioritisations and decision-making process associated with this event, aspect or impact.

Table 20: Description of environmental significance and related action required.

Significance	Low	Low-Medium	Medium	Medium-High	High
Impact Magnitude	Impact is of very low order and therefore likely to have very little real effect. Acceptable.	Impact is of low order and therefore likely to have little real effect. Acceptable.	Impact is real, and potentially substantial in relation to other impacts. Can pose a risk to company	Impact is real and substantial in relation to other impacts. Pose a risk to the company. Unacceptable	Impact is of the highest order possible. Unacceptable. Fatal flaw.
Action Required	Maintain current management measures. Where possible improve.	Maintain current management measures. Implement monitoring and evaluate to determine potential increase in risk. Where possible improve	Implement monitoring. Investigate mitigation measures and improve management measures to reduce risk, where possible.	Improve management measures to reduce risk.	Implement significant mitigation measures or implement alternatives.

Based on the above, the significance rating scale has been determined as follows:

High — Of the highest order possible within the bounds of impacts which could occur. In the case of negative impacts, there would be no possible mitigation and / or remedial activity to offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit.

Medium-High — Impacts of a substantial order. In the case of negative impacts, mitigation and / or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these. In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.

Medium — Impact would be real but not substantial within the bounds of those, which could occur. In the case of negative impacts, mitigation and / or remedial activity would be both feasible and fairly easily possible, in case of positive impacts; other means of achieving these benefits would be about equal in time, cost and effort.

Low-Medium — Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and / or remedial activity would be either easily achieved of little would be required, or both. In case of positive impacts alternative means for achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.

Low — Impact would be negligible. In the case of negative impacts, almost no mitigation and or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple. In the case of

positive impacts, alternative means would almost all likely be better, in one or a number of ways, than this means of achieving the benefit.

Insignificant — There would be a no impact at all – not even a very low impact on the system or any of its parts.

vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

The proposal for mining on Site Alternative 1 (S1) on Portion 2 of the farm Bonne Esperance 83 was chosen with both environmental sustainability and practicality in mind. The assessment also considered another possible site layout, Site Alternative 2 (S2), but found it less suitable due to environmental and resource limitations. Below is a breakdown of the positive and negative impacts on the environment and community of the proposed activity on S1 and the alternative site layout, S2.

Positive Impacts of Site Alternative 1 (S1)

- **Environmental Considerations:**

Minimal Disruption to Ecosystems:

S1 is situated on inactive farmland that has already been altered for agricultural use, primarily wheat farming and cattle grazing. This minimizes disruption to natural ecosystems, avoiding sensitive renosterveld vegetation that is found in other parts of the farm.

Resource Availability:

The area has concentrated deposits of silty sand and quartzitic sandstone pebbles, reducing the need for large-scale land disturbance to extract the necessary materials.

- **Community and Agricultural Impact:**

Preservation of High-Agricultural Potential Land: Since S1 is already used for low-impact farming, its use for mining would not significantly affect agricultural production compared to other sites on the farm that have a higher potential for crop growth.

Economic Benefit: The project can generate local job opportunities, supporting the community's economic growth and benefiting residents who may be employed in mining-related activities.

Negative Impacts of Site Alternative 1 (S1)

- **Environmental Concerns:**

Soil and Land Disturbance: Although S1 is on inactive farmland, mining will still disturb the soil, potentially impacting the local land structure and drainage patterns.

Dust and Noise Pollution: The mining activities will increase dust and noise, which may affect nearby farms and residents if not properly controlled.

- **Community Impact:**

Possible Reduction in Agricultural Productivity: While S1 is currently inactive farmland, any disruption to the soil quality might affect future farming if the site is returned to agriculture after mining operations cease.

Increased Traffic and Safety Concerns: The transportation of materials will increase traffic on local roads, possibly leading to safety issues for residents and affecting the community's daily activities.

Comparison with Site Alternative 2 (S2)

Advantages of S1 over S2

- **Environmental Impact:**

Reduced Ecological Disruption: Unlike S1, S2 supports sensitive renosterveld vegetation, which would suffer from mining activities. This vegetation type is critical to biodiversity in the region, making S1 a more environmentally responsible choice.

Resource Quality and Quantity: S2 lacks the high-quality silty sand and sandstone found in S1, which would require more land disturbance to meet the project's resource needs. S1's concentrated deposits mean fewer areas need to be mined to extract sufficient materials.

- **Community and Economic Factors:**
- **Lower Agricultural Impact:** S2 has higher potential for agriculture compared to S1. Choosing S1 allows for a balanced use of the land, where less-productive farmland can serve as the mining site, leaving more fertile areas for farming.

Disadvantages of S1 Compared to S2

- **Site-Specific Constraints:**

Limited Expansion Potential: Since S1 is smaller than other possible sites, it might limit the project's scale if more resources are needed in the future, whereas S2 offers more space.

Conclusion

Site Alternative 1 (S1) was selected as the preferred option for the proposed mining operation because it provides the best balance between accessing needed resources and minimizing environmental and community disruption. The environmental assessment concluded that, with appropriate mitigation and monitoring measures, the impacts on the environment and the community would be manageable. This careful consideration makes S1 a sustainable and viable option while respecting the concerns of affected parties.

PROJECT ASSOCIATED POSITIVE IMPACTS:

- Possible work opportunities to local residents;
- Return of the mining area to its previous state upon closure of the project; and
- Diversification of the land use of the property.

POTENTIAL NEGATIVE IMPACTS:

Site establishment & infrastructure development

- Alteration of the agricultural sense of place;
- Loss of agricultural land for duration of mining;
- Visual intrusion as a result of site establishment;
- Potential impact on fauna within the footprint area;
- Potential impact on vegetation and listed and/or protected plant species
- Dust nuisance due to site establishment
- Potential impact on archaeological artefacts;

Construction of Site Access Road

- Visual intrusion caused by construction of site access road
- Loss of stockpiled topsoil during construction of access road;
- Dust nuisance as a result of the construction of access road;
- Noise nuisance generated by earthmoving machinery;
- Potential erosion of denuded areas;
- Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages;

Stripping and stockpiling of topsoil and/or overburden:

- Visual intrusion caused by mining activities;
- Loss of stockpiled topsoil during mining and stockpiling;
- Dust nuisance as a result of the disturbance of soil;
- Noise nuisance generated by earthmoving machinery;
- Potential impact on local fauna due to disturbance and loss of available habitat;
- Potential erosion of denuded areas;
- Loss of stockpiled material due to ineffective storm water control;
- Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages;

Excavation, loading and hauling to the processing plant:

- Visual intrusion as a result of excavation and from loading and vehicles transporting the material
- Dust nuisance due to excavation and from loading and vehicles transporting the material;
- Noise nuisance as a result of the mining activities;

- Unsafe working environment for employees;
- Soil contamination from hydrocarbon spills and/or littering;
- Potential impact on areas of palaeontological concern;
- Facilitation of erosion due to mining activities;

Processing, stockpiling and transporting of material:

- Dust nuisance generated at the processing plant;
- Noise nuisance stemming from operation of the processing plant;
- Visual intrusion because of operation of the processing plant
- Potential contamination of environment due to improper waste management;
- Overloading of trucks impacting road infrastructure;
- Degradation of the access road;

Cumulative impacts:

- Long-term habitat modification.
- Increased risk of invasive species.
- Impact on existing infrastructure as a direct result of the mining operation;

Sloping and landscaping during rehabilitation:

- Safety risk posed by un-sloped areas;
- Erosion of returned topsoil after rehabilitation;
- Infestation of the reinstated areas by weeds and invader plant species;
- Potential impact associated with litter/waste left at the mining area.

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

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/discussion of the mitigation 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 following mitigation measures are proposed to address/minimize the impact of the proposed activity on the surrounding environment:

TOPOGRAPHY

Rehabilitating/Landscaping of Mining Area:

Rehabilitation of the proposed mining site will prioritize stabilizing and preparing disturbed areas for potential agricultural use or natural regrowth, considering the minimal topsoil available. Key elements of this plan are as follows:

Rehabilitation Process:

The operation will proceed in staged sections of approximately 1–1.5 hectares, with each section undergoing rehabilitation immediately after completion of mining activities in that

area. Earthmoving equipment will handle in-situ material during operations, ensuring that disturbed areas are minimized. Given the rocky, low-topsoil nature of the site, topsoil recovery will be limited to stripping whatever minimal soil can be recovered from the rocky terrain. This soil will be stockpiled temporarily for later redistribution.

- Topsoil Redistribution:

Although the site lacks substantial topsoil, any minimal amount of soil material recovered will be returned to its original depth after profiling the excavated areas with acceptable contours and erosion control measures. This redistribution will help stabilize the soil, reduce erosion, and foster natural regrowth or future agricultural use.

- Erosion Control and Profiling:

Excavated areas will be contoured and graded to prevent erosion and promote natural water flow. These erosion control measures will also help prevent sediment runoff into nearby areas and support the overall stability of the rehabilitated sections.

- Waste Management:

No waste material will be allowed to be deposited within the excavated areas. This will help maintain the integrity of the rehabilitated landscape and prevent any contamination that could hinder vegetation growth or future agricultural use.

- Future Land Use Preparation:

This rehabilitation approach is tailored to prepare the land for either future agricultural use or natural regrowth, aligning with the site's existing land use and minimal soil resources. By focusing on stabilization and basic soil restoration, the site will be left in a condition that allows for flexible land use options post-rehabilitation.

- This staged approach will ensure that each section is rehabilitated to acceptable standards before moving on to the next, facilitating a controlled, orderly rehabilitation process with ongoing oversight and soil management as required.
- On completion of operations, all structures or objects shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).
- On completion of mining operations, the surface of all plant-, stockpiling-, and/or office areas, if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 200mm and graded to an even surface condition.

VISUAL CHARACTERISTICS

Visual Mitigation:

- The site must have a neat appearance and be always kept in good condition.
- Mining equipment must be stored neatly in dedicated areas when not in use.
- The permit holder must limit vegetation removal, and stripping of new areas may only be done immediately prior to the mining/use of a specific area.
- The excavation must be contained within the approved footprint of the permitted area.
- Upon closure the site must be rehabilitated to ensure that the visual impact on the aesthetic value of the area is reduced to the minimum.

AIR AND NOISE QUALITY

Fugitive Dust Emission Mitigation Measures:

- The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products).
- The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.
- Speed on the haul roads must be limited to 20 km/h and 40 km/h on the access road to prevent the generation of excess dust.
- Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to mining.
- The crusher plant must have operational water sprayers to alleviate dust generation from the conveyor belts.
- Fines, blowing from the drop end of the crusher plant, can be minimized by attaching strips of used conveyor belts to the conveyor's end.
- Compacted dust must weekly be removed from the crusher plant to eliminate the dust source.
- Loads must be flattened to prevent spillage during transportation on public roads.
- Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts.
- All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM: AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).
- Best practice measures shall be implemented during the stripping of topsoil, excavation, and transporting of material from site to minimize potential dust impacts.

Noise Handling:

- The permit holder must ensure that employees and staff conduct themselves in an acceptable manner while on site.
- No loud music may be permitted at the mining area.
- All mining vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).
- A qualified occupational hygienist must be contracted to quarterly monitor and report on the personal noise exposure of the employees working at the mine. The monitoring must be done in accordance with the SANS 10083:2004 (Edition 5) sampling method as well as NEM: AQA, 2004, SANS 10103:2008.
- Site management must strive to minimise the noise caused by generators. All generators must be maintained and equipped with sound mufflers. If at all possible, the generators must be placed as far away from the nearby land users as practicable. Also, to reduce vibration noise, all generators must be set up on a level surface or footing.
- Best practice measures shall be implemented to minimize potential noise impacts.

GEOLOGY AND SOIL

Topsoil Management:

The proposed mining site lacks significant topsoil, as it is characterized by a rocky terrain previously under cultivation for wheat. Due to the minimal natural topsoil layer, any rehabilitation efforts will not involve extensive topsoil replacement. Instead, rehabilitation will focus on redistributing whatever minimal soil material can be stripped during mining operations. This approach ensures that the disturbed areas are stabilized and prepared for future agricultural use or natural vegetation, while adhering to the limited soil resources available on-site. Therefore, any available topsoil should be managed as follows if practically possible.

- The upper 300 mm of the soil must be stripped and stockpiled before mining.
- Topsoil is a valuable and essential resource for rehabilitation, and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.
- Topsoil must be stripped and stockpiled separately during site preparation and replaced over disturbed areas on completion.
- Topsoil stripping, stockpiling, and re-spreading must be done in a systematic way. The mining plan must be such that topsoil is stockpiled for the minimum possible time.
- The topsoil must be placed on a levelled area, within the mining footprint. No topsoil may be stockpiled in undisturbed and inactive areas.

- Topsoil heaps may not exceed 1.5 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.
- The temporary topsoil stockpiles must be kept free of invasive plant species.
- Topsoil heaps to be stored longer than a period of 6 months needs to be vegetated with an indigenous grass seed mix if vegetation does not naturally germinate within the first growth season.
- Storm- and runoff water must be diverted around the stockpile area to prevent erosion.
- The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site.
- The permit holder must strive to re-instate topsoil at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal.
- Run-off water must be controlled via temporary berms, where necessary, on the slopes to ensure that accumulation of run-off does not cause down-slope erosion.
- The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.

HYDROLOGY

Erosion Control and Storm Water Management:

- Clearing of vegetation must be limited to the proposed mining footprint and associated infrastructure. No clearing outside of the minimum required footprint to take place.
- Stockpiles must be protected from erosion, stored on flat areas where possible, and be surrounded by appropriate berms.
- During mining, the outflow of run-off water from the mining excavation must be controlled to prevent down-slope erosion. This must be done by way of the construction of temporary banks and ditches that will direct run-off water (if needed). These must be in place at any points where overflow out of the excavation might occur.
- Roads and other disturbed areas within the project area must be regularly monitored for erosion and problem areas must receive follow-up monitoring to assess the success of the remediation.
- Any erosion problems within the mining area as a result of the mining activities observed must be rectified immediately (within 48 hours) and monitored thereafter to ensure that it does not re-occur.
- Silt/sediment traps/barriers must be used where there is a danger of topsoil or material stockpiles eroding and entering downstream drainage lines and other sensitive areas.

These sediment/silt barriers must regularly be maintained and cleared so as to ensure effective drainage of the areas.

- Mining must be conducted only 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 Water and Sanitation (DWS), and any other conditions which that Department may impose:
  - Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. You must prevent clean water from running or spilling into dirty water systems.
  - Dirty water must be collected and contained in a system separate from the clean water system.
  - Dirty water must be prevented from spilling or seeping into clean water systems.
  - A storm water management plan must apply for the entire life cycle of the mining activity and over different hydrological cycles (rainfall patterns).
  - The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into a storm water management plan.
- Polluting activities including storage of mining fleet, equipment wash area facilities and vehicle maintenance yards must be restricted to the workshop areas and must be undertaken on impermeable hard standing surfaces, which are formally drained to a dirty water drainage system at the site.
- All fuels and chemicals stored or used on site must be contained within fit for purpose containers and stored within designated storage areas. To prevent pollution of the surrounding environment during an accidental spillage, the designated storage areas must be situated on an impermeable surface and must feature a perimeter bund and a drainage sump. The volume of the bund and sump must be sized to contain at least 110% of the total volume of the fuel and chemicals being stored within the designated storage area. The storage areas must feature a roof to prevent inflow of rainwater, which would require the sump to be emptied more frequently.

TERRESTRIAL BIODIVERSITY, CONSERVATION AREAS AND GROUNDCOVER

Management of Vegetation Removal:

- The mining boundaries must be clearly demarcated, and all operations must be contained to the approved mining area. The area outside the mining boundaries must be declared a no-go area, and all staff must be educated accordingly.
- Blanket clearing of vegetation must be limited to the proposed footprint and associated infrastructure. No clearing outside of the minimum required footprint to take place.
- Clearing of vegetation should be minimized and avoided where possible.

- The appointed ECO must provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment, especially during the site establishment phase, when the majority of vegetation clearing is taking place.
- All vehicles must remain on demarcated roads and no unnecessary driving in the veld outside these areas may be allowed.
- No plant species, whether native or exotic, should be brought into, ore removed from, the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants.
- No plants may be translocated or otherwise uprooted or disturbed for rehabilitation or other purposes without express permission from the ECO and without the relevant permits.
- No fires must be allowed on-site.

Management of Invasive Plant Species:

- An invasive plant species management plan (Appendix I) must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the mining activities.
- No planting or importing of any alien species to the site for landscaping, rehabilitation or any other purpose may be allowed.
- All stockpiles (topsoil & overburden – if any) must be kept free of invasive plant species.
- Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:
  - The plants can be uprooted, felled, or cut off and can be destroyed completely.
  - The plants can be treated chemically by a registered pest control officer (PCO) using an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.

FAUNA

Protection of Fauna:

- Site access should be controlled, and no unauthorised persons should be allowed onto the site.
- Any fauna directly threatened by the associated activities should be removed to a safe location by a site manager.

- The collection/trapping, hunting, or poisoning of any animals at the site is strictly forbidden. Signs must be put up to enforce this. Personnel should not be allowed to wander off demarcated areas.
- Fires must not be allowed on site.
- All hazardous materials should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel, and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill.
- All construction and maintenance motor vehicle operators should undergo an environmental induction that includes instruction on the need to comply with speed limits, to respect all forms of wildlife. All vehicles should adhere to a low-speed limit (40 km/h) to avoid collisions with susceptible species.
- Construction vehicles must be limited to a minimal footprint on site (no movement outside of the earmarked footprint).
- All personnel must undergo environmental induction regarding fauna management and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. Workers must be instructed to report any animals that may be trapped in the working area.
- Schedule activities and operations during least sensitive periods, to avoid migration, nesting, and breeding seasons.
- Ensure that cables and connections are insulated successfully to reduce electrocution risk.
- Use environmentally friendly chemical products.
- No litter, food or other foreign material may be thrown or left around the site.

CULTURAL AND HERITAGE ENVIRONMENT

Archaeological, Heritage and Palaeontological Aspects:

- If any significant archaeological remains are located during this survey which cannot be avoided by, or excluded from the site, they will require mitigation prior to any mining activities on the site. A Workplan application will need to be made to HWC to conduct this work.

- Should any human remains be encountered at any stage during the works associated with the project, work must in the vicinity must cease immediately, the remains must be left in situ but made secure and the project archaeologist and HWC must be notified immediately to decide about how to deal with the remains.

- All mining must be confined to the development footprint area.

- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.
- The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify the HWC.
- Work may only continue once the go-ahead was issued by SAHRA.

LAND USE

Loss of agricultural land for duration of mining:

- According to the landowner, the agricultural potential of the study area (S1) is of low significance and therefore he supports the proposed mining operation. The proposed mining area will revert back to its previous state upon closure. The mining area in its original state was deemed with low agricultural potential.

Management of the Access Road:

- Storm water must be diverted around the access road to prevent erosion.
- Vehicular movement must be restricted to the existing access road and crisscrossing of tracks through undisturbed and inactive areas must be prohibited.
- Rutting and erosion of the access road caused as a direct result of the mining activities must be repaired by the permit holder.
- Overloading of the trucks must be prevented, and proof of load weights must be filed and be available for auditing by relevant officials.
- The speed of all mining equipment/vehicles must be restricted to 40 km/h on the access roads.

GENERAL

Waste Management:

- Regular vehicle maintenance, repairs and services may only take place at a workshop and service area. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a closed container/bin to be removed from the emergency service area (same day) to the workshop to ensure proper disposal. This waste must be treated as hazardous waste and must be disposed of at a registered hazardous waste handling facility, alternatively collected by a registered hazardous waste handling contractor. The safe disposal certificates must be filed for auditing purposes.
- If a diesel bowser is used on site, it must always be equipped with a drip tray. Drip trays must be used during each refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling.
- Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site. The dirty rags used to clean the drip trays must be disposed as hazardous waste into a designated bin at the workshop, where it is incorporated into the hazardous waste removal system.
- Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate

disposal at a recognized facility. Proof of safe disposal must be filed for auditing purposes.

- An oil spill kit must be obtained, and the employees must be trained in the emergency procedures to follow when a spill occurs as well as the application of the spill kit.
- Spills must be cleaned up immediately, within two hours of occurrence, to the satisfaction of the Regional Manager (DMRE) by removing the spillage together with the polluted soil and containing it in a designated hazardous waste bin until it is disposed of at a recognised facility. Proof must be filed.
- Suitable covered receptacles must be always available and conveniently placed for the disposal of general waste.
- Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., must be stored in a container with a closable lid at a collecting point to be collected at least once a month and disposed of at a recognized landfill site. Specific precautions must be taken to prevent refuse from being dumped on or in the vicinity of the mine area. Proof of disposal must be available for auditing purposes.
- Biodegradable refuse must be handled as indicated above.
- Re-use or recycling of waste products must be encouraged on site.
- No waste may be buried or burned on the site.
- Ablution facilities must be provided in the form of a chemical toilet/s. The chemical toilets must be anchored (to prevent blowing/falling over) and shall be serviced at least once a week for the duration of the mining activities by a registered liquid waste handling contractor. The safe disposal certificates must be filed for auditing purposes.
- The use of any temporary, chemical toilet facilities must not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the permit holder.
- When small volumes of wastewater are generated during the life of the mine the following is applicable:
  - Water containing waste must not be discharged into the natural environment.
  - Measures to contain the wastewater and safely dispose thereof must be implemented.
- It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities is reported to the Department of Water and Sanitation and other relevant authorities.
- Site management must implement the use of waste registers to keep record of the waste generated and removed from the mining area.

Storage/Handling of Hazardous Substances/Chemicals:

- Chemical storage areas must be placed on level ground to prevent offsite migration of any spilled product.
- The floor of the storage area must be impermeable to prevent seepage of spilled products into the ground or ground water.
- Access to the chemicals/substances must be controlled and require prior notification of an appropriate staff member.
- A Hazardous Substances Register must be maintained, and Safety Data Sheets (SDS) must be kept current for all chemicals used on site.
- All tanks for fuel/used oil must have additional containment in the form of an impermeable bund wall and foundation, raised above the floor, on plinths. The bund capacity must be sufficient to contain 110% of the tank's maximum capacity. The distance and height of the bund wall relative to that of the tank must also be taken into consideration to ensure that any spillage does not result in hydrocarbons/other substances spouting beyond the confines of the bund.
- The site manager must establish a formal inspection routine to check all equipment in the bund area, as well as the bund area itself for malfunctions or leakages. The bund area must be inspected at least weekly, and any accumulated rainwater removed and handled as contaminated water. All valves and outlets must be checked to ensure that its intact and closed securely.
- The bund base must slope towards an oil sump of sufficient size. Contaminated water may not be allowed to mix with clean water and must be contained until it is collected by a registered hazardous waste handling contractor or disposed of at a registered hazardous waste handling facility.
- Drip trays must be used underneath all stationary equipment or vehicles. Used drip trays must be placed within a bunded area and are not stored on bare soil. The wastewater originating from the cleaning of drip trays must be discarded into the oil sump.

Management of health and safety risks:

- Workers must have access to the correct personal protection equipment (PPE) as required by law.
- Sanitary facilities must be located within 100 m from any point of work.
- All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).

ix) Motivation where no alternative sites were considered.

An alternative layout, Site Alternative 2 (S2), was also explored but found unsuitable. S2 posed increased environmental risks, with higher potential for disturbances and insufficient mineral

quality and quantity to support the project's objectives. While technically feasible, the development of S2 would lead to significant ecological disruption without providing substantial benefits over S1, thus rendering it impractical. Although the position of Site Alternative 2 will still allow the development of borrow pit on the property, it is believed that the impact associated with this site alternative is of higher significance without the need or motivation justifying it.

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

Site Alternative 1 was identified during the assessment phase of the environmental impact assessment as the preferred and only site alternative. The following matters contributed to the identification of the preferred development footprint:

1. **Topography** – The area surrounding Gouda predominantly consists of low-lying, gently undulating plains which are utilized extensively for agriculture, especially for grain farming and vineyards. These plains are bordered by steep, rugged mountains that rise dramatically from the valley floor, creating a picturesque contrast and adding to the area's scenic value. The topography is also shaped by the Berg River, which flows northward and provides an essential water source, supporting both agricultural and ecological needs in the region.

2. The site lies at an elevation of approximately 100 meters above sea level. This elevation places it within the relatively low-lying Breede River Valley, which is bordered by dramatic mountainous terrain that influences the region’s microclimates and landscape. The valley itself is characterized by flat to gently rolling plains, ideal for agriculture, with fertile soils supporting extensive grain farming and vineyards.

3. **Visual Characteristics** – • The viewshed analysis indicated that the proposed mining operation for silty sand and quartzitic sandstone pebbles will have a low visual impact. Although the mining area will be visible from the public road (R44), approximately 2.5 km away, the temporary nature and small scale of the excavation activities mean that the impact will be minimal. The mining will involve equipment similar to that used in farming operations, further blending into the agricultural landscape. Following successful rehabilitation of the site upon closure of the mine, no lasting visual impact is anticipated.

4. **Air and Noise Quality** – The proposed activity will contribute the emissions mechanical mining equipment to the receiving environment for the duration of the operational phase. Should the permit holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use. The potential impact on

the noise ambiance of the receiving environment is expected to be of low significance and representative of the traffic of the surrounding area.

5. **Hydrology** - The selection of the development site within the broader landscape was influenced by strategic hydrological considerations to minimize environmental impact. The site is positioned at a sufficient distance from major water bodies, such as the Berg Klein River, approximately 1 km away, ensuring that significant, permanent hydrological systems remain largely unaffected by the proposed borrow pit operations. This strategic positioning reduces the likelihood of direct hydrological disruption or contamination to perennial water sources. The choice of location also considers the existing non-perennial stream within 100 meters of the site, which has already been heavily modified by agricultural activities. This existing modification means that further impact from mining operations can be managed with appropriate mitigation measures, reducing potential negative hydrological effects. Additionally, the presence of a degraded, non-prioritised wetland within 500 meters of the site, while significant, poses less risk due to its already compromised state. By situating the borrow pit at this specific location, the project seeks to minimize disturbance to higher-value, ecologically intact hydrological features.

   Furthermore, the development within this portion of the site provides an opportunity to implement erosion and runoff control measures tailored to the local hydrology. This strategic approach can limit the sedimentation risks and manage surface water flows, preserving the general hydrological balance of the region. These measures, combined with careful operational planning, support the feasibility of the site from a hydrological standpoint, ensuring that critical water resources are safeguarded while allowing for responsible resource extraction. This was confirmed by the Risk Matrix Assessment conducted (please see Appendix M1). Water required for the implementation of the project will be sourced from authorised sources.

6. **Geology and Soil –** The geology of the proposed borrow pit site is primarily composed of phyllite shale, schist, and greywacke from the Porterville Formation within the Malmesbury Group. Some areas are covered by alluvium, terrace gravel, and talus deposits on the midslopes. The site's soil classification falls within the Db48 land type, characterized by moderately deep, medium-textured soils with a fairly uniform composition. These soils are generally suited for rainfed crop production but have limitations such as a high stone content, which reduces their water-holding capacity and may impact productivity in drier periods.

   According to the Agriculture Assessment Report (Appendix M), the specialist concluded that with effective mitigation measures, including careful soil management, erosion control, and post-mining rehabilitation, the impact on agricultural productivity can be minimized. These steps are essential to restoring the land for agricultural use and preserving its

economic and ecological value within the region. Overall, while the proposed mining activities may temporarily alter the agricultural landscape, proper rehabilitation and management will allow for the sustainable use of the land in the future. Therefore, from an agricultural impact point of view, it is recommended that the development be approved.

7. **Mining, Biodiversity and Groundcover** – According to the Terrestrial Biodiversity Assessment report (Appendix M2) the site's groundcover primarily consists of fallow agricultural land with no intact patches of the Swartland Alluvium Fynbos or Swartland Shale Renosterveld, two nationally significant vegetation types nearby. Although Swartland Shale Renosterveld is classified as Critically Endangered and Swartland Alluvium Fynbos as Endangered, no remnants of these ecosystems are within the development boundary. Species of Conservation Concern (SCC) and Range-Restricted Species are confirmed on the proposed mining site, though nearby regions may support some species with conservation status due to their broader distribution. The project's desktop assessment and field survey did not detect any SCC within the site itself.

   Overall, with phased mining and careful rehabilitation and alien plant management the project's impacts on local vegetation and ecosystem integrity are expected to be minimal and manageable. Implementing the recommended Environmental Management Programme (EMPr) will support the eventual ecological recovery of the site post-mining.

8. **Fauna -** No protected or red data species were identified to be resident within the proposed footprint area. Various small mammals and reptiles occur on the property. Larger herbivore species are very scares or absent due to the conflicting land use. The fauna at the site will not be impacted by the proposed mining activity as they will be able to move away or through the site, without being harmed. Workers will be informed and managed to ensure that no fauna at the site is harmed. No poaching or hunting of animals will be allowed. All construction vehicles must adhere to a low-speed limit (<40km/h) to avoid collisions with susceptible species such as snakes and tortoises. Trenches and deep excavations must not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed must contain soil ramps allowing fauna to escape the trench.

9. **Cultural and Heritage Environment** - According the historical core of Saron, including the mission station and related structures established in the mid-19th century, is located more than 4 km from the proposed mining area. This distance ensures that the visual and structural integrity of these significant cultural sites will remain unaffected by the mining operations. The site itself does not feature any structures or locations of high historical value, making it a suitable choice for development with minimal risk of heritage disruption. The mountains to the east of the proposed site are an important visual landscape component. However, the proposed mining activity is limited in scale and temporary in

nature, which significantly reduces the risk of long-term visual impact. The choice of this site, therefore, aligns with the objective of preserving the larger visual landscape. Although Early Stone Age artefacts were discovered on-site, the density was notably low compared to adjacent areas. This reduced archaeological significance supports the decision to develop this particular location, as it poses minimal risk to valuable archaeological resources. The development site lies on Quaternary sand and terrace gravels, underlain by metamorphosed rocks of the Porterville Formation. These rocks, subjected to significant geological processes, are unlikely to contain preserved fossils due to historical metamorphosis and erosion.

Verified analyses indicate that the area has a low potential for fossil preservation, reducing the likelihood of significant palaeontological findings. The choice of this site, therefore, aligns with preserving more sensitive areas and supports responsible development.

The development location has been chosen carefully to mitigate impacts on the cultural and heritage environment. The considerable distance from significant heritage structures, minimal archaeological findings, and low palaeosensitivity underscore the suitability of this site for mining activities. This strategic choice ensures that cultural and heritage resources remain preserved while allowing for necessary development.

Should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the surrounding area in general is deemed to be of low significance. In light of this, a Heritage Impact Assessment was not deemed necessary by the heritage specialist.

10. **Site Specific Infrastructure** – No infrastructure has been established on the property that can be affected by the proposed development.

    During the environmental impact assessment process, the feasibility of the proposed site was assessed to identify fatal flaws that are deemed as severe as to prevent the activity continuing or warrant a site or project alternative. The outcome of the assessment showed that should the mitigation measures and monitoring programmes proposed in this document be implemented, no fatal flaws could be identified that prevents the activity continuing.

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

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

During the impact assessment process, the following potential impacts were identified of each main activity in each phase. An initial significance rating (listed under *v) Impacts and Risks*

Identified) was determined for each potential impact should the mitigation measures proposed in this document not be implemented on-site. The impact assessment process then continued in identifying mitigation measures to address the impact that the proposed mining activity may have on the surrounding environment.

The significance rating was again determined for each impact using the methodology as explained under *vi) Methodology Used in Determining and Ranking the Significance*. The impact ratings listed below was determined for each impact **after** bringing the proposed mitigation measures into consideration and therefore represents the final layout/activity proposal.

SITE ESTABLISHMENT & INFRASTRUCTURE DEVELOPMENT:

Alteration of the agricultural sense of place

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low 1 - 4.9	Low-Medium **5 - 9.9**	Medium 10 - 14.9	Medium-High 15 – 19.9	High 20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
2	2	1	1.6	5	5	5	**8**				

Loss of agricultural land for duration of mining

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low 1 - 4.9	Low-Medium 5 - 9.9	Medium 10 - 14.9	Medium-High 15 – 19.9	High 20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
2	4	1	2.3	3	3	3	**6.9**				

Visual intrusion as a result of site establishment

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low 1 - 4.9	Low-Medium 5 - 9.9	Medium 10 - 14.9	Medium-High 15 – 19.9	High 20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
2	2	1	1.6	4	3	3.5	**5.6**				

Potential impact on fauna within the footprint area

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low 1 - 4.9	Low-Medium 5 - 9.9	Medium 10 - 14.9	Medium-High 15 – 19.9	High 20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Potential impact on vegetation and listed and/or protected plant species

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low 1 - 4.9	Low-Medium 5 - 9.9	Medium 10 - 14.9	Medium-High 15 – 19.9	High 20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Dust nuisance due to site establishment

							Significance				
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Low 1 - 4.9	Low-Medium 5 - 9.9	Medium 10 - 14.9	Medium-High 15 – 19.9	High 20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	2	1	1.6	4	3	3.5	**5.6**				

Potential impact on archaeological artefacts

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	5	5	4	1	1	1	**4**				

New job opportunities as a result of the mining operation (Positive Impact)

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: N/A**				
4	4	5	4.6	5	5	5	**23**				

CONSTRUCTION OF SITE ACCESS ROAD:

Visual intrusion caused by construction of site access road

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
3	3	1	2.3	4	2	3	**6.9**				

Loss of stockpiled topsoil during construction of access road

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
3	4	1	2.6	4	3	3.5	**9.1**				

Dust nuisance as a result of the construction of access road

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Noise nuisance generated by earthmoving machinery

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Potential erosion of denuded areas

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	5	5	4	1	1	1	**4**				

Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

STRIPPING AND STOCKPILING OF TOPSOIL AND/OR OVERBURDEN:

Visual intrusion caused by mining activities.

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
2	2	1	1.6	4	3	3.5	**5.6**				

Loss of stockpiled topsoil during mining and stockpiling

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
1	1	1	1	1	1	1	**1**				

Dust nuisance as a result of the disturbance of soil

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Noise nuisance generated by earthmoving machinery

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Potential impact on local fauna due to disturbance and loss of available habitat

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	2	2	2	2	2	2	**4**				

Potential erosion of denuded areas

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Loss of stockpiled material due to ineffective storm water control

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	**6.9**				

Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

EXCAVATION, LOADING AND HAULING TO THE PROCESSING PLANT

Visual intrusion as a result of excavation and from loading and vehicles transporting the material

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
3	3	1	2.3	4	2	3	**6.9**				

Dust nuisance due to excavation and from loading and vehicles transporting the material

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Noise nuisance as a result of the mining activities

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Unsafe working environment for employees

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	**6.9**				

Soil contamination from hydrocarbon spills and/or littering

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	2	1	1.6	3	3	3	**5**				

Potential impact on areas of palaeontological concern

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Facilitation of erosion due to mining activities

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

PROCESSING, STOCKPILING AND TRANSPORTING OF MATERIAL:

Dust nuisance generated at the processing plant

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	2	1	1.6	2	2	2	**3.2**				

Noise nuisance stemming from operation of the processing plant

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	2	1	1.6	2	2	2	**3.2**				

Visual intrusion as a result of operation of the processing plant

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	2	3	**6.9**				

Potential contamination of environment due to improper waste management

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
2	4	1	2.3	2	2	2	**4.6**				

Overloading of trucks impacting road infrastructure

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

Degradation of the access road

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

CUMULATIVE IMPACTS:

Long-term habitat modification.

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Partial**				
2	2	1	1.6	4	3	3.5	**5.6**				

Increased risk of invasive species.

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Partial**				
3	3	1	2.3	4	4	4	**9.2**				

Impact on existing infrastructure as a direct result of the mining operation

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: None**				
2	2	1	1.6	4	3	3.5	**5.6**				

SLOPING AND LANDSCAPING DURING REHABILITATION:

Safety risk posed by un-sloped areas

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

Erosion of returned topsoil after rehabilitation

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

Infestation of the reinstated areas by weeds and invader plant species

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

Potential impact associated with litter/waste left at the mining area

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: Full**				
3	3	1	2.3	4	4	4	**9.2**				

Return of the mining area to landscape feature upon closure (Positive Impact)

							Significance				
							Low	Low-Medium	Medium	Medium-High	High
Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25
Rating: Medium			**Site Layout Alternative 1**				**Degree of Mitigation: N/A**				
3	5	1	3	5	5	5	**15**				

j) 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).

Table 21: Assessment of each identified potentially significant impact and risk

ACTIVITY Whether listed or not listed. (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	POTENTIAL IMPACT (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, air pollution, etc…etc…etc.)	ASPECTS AFFECTED	PHASE In which impact is anticipated. (E.g. Construction, commissioning, operational Decommissioning closure, post closure.)	SIGNIFICANCE If not mitigated.	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc etc) E.g. Modify through alternative method Control through noise control Control through management and monitoring through rehabilitation.	SIGNIFICANCE If mitigated.
Demarcation of site with visible beacons.	No impact could be identified other than the beacons being outside the boundaries of the approved mining area.	N/A	Site Establishment & Operational Phase	N/A	Control through management and monitoring.	N/A
Site establishment and infrastructure development.	Alteration of the agricultural sense of place.	The impact may affect the agricultural opportunities of the property.	Site Establishment- and Decommissioning phase	Low-Medium	Control & Remedy: Proper housekeeping and storm water management.	Low-Medium
Site establishment and infrastructure development.	Loss of agricultural land for duration of mining.	The impact may affect the agricultural opportunities of the property.	Site Establishment-, Operational- and Decommissioning phase	Low-Medium	Control: Implementing soil- and storm water management.	Low-Medium

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
• Site establishment and infrastructure development. • Stripping and stockpiling of topsoil and overburden.	• Visual intrusion as a result of site establishment. • Visual intrusion caused by mining activities.	The visual impact may affect the aesthetics of the landscape.	Site Establishment- and Operational phase	• Low-Medium	Control & Stop: Implementing good management practices.	• Low-Medium
• Site establishment and infrastructure development.	• Potential impact on vegetation and listed and/or protected plant species.	This will impact on the biodiversity of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	• Low-Medium	Control: Noise suppression methods and proper housekeeping.	• Low
• Site establishment and infrastructure development. • Stripping and stockpiling of topsoil and overburden.	• Potential impact on fauna within the footprint area. • Potential impact on local fauna due to distrubance and loss of available habitat.	This will impact on the biodiversity of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	• Low • Low-Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan.	• Low • Low
• Site establishment and infrastructure development • Stripping and stockpiling of topsoil and overburden. • Excavation, Loading and Hauling to the processing plant	• Dust nuisance due to site establishment	This will impact on the biodiversity of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	• Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan.	• Low-Medium
	• Noise nuisance as a result of the mining activities	This will impact on the biodiversity of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	• Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan.	• Low-Medium

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
	• Unsafe working environment for employees	This will impact on the biodiversity of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	• Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan.	• Low - medium
	• Soil contamination from hydrocarbon spills and/or littering	This will impact on the biodiversity of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	• Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan.	• Low - Medium
• Site establishment and infrastructure development. • Excavation, loading and hauling to the processing plant.	• Potential impact on archaeological artefacts. • Potential impact on areas of palaeontological concerns.	This could impact on the cultural and heritage legacy of the receiving environment.	Operational Phase	• Low • Low	Control & Stop: Implementing good management practices, as well as the chance-find protocol.	• Low • Low
• Construction of Access Road	• Visual intrusion caused by construction of site access road	The visual impact may affect the aesthetics of the landscape.	Site establishment phase	• Low-Medium	Control & Stop: Implementing good management practices, as well as the chance-find protocol	• Low-Medium
	• Destruction of drainage lines	The visual impact may affect the aesthetics of the landscape.	Site establishment phase	• High- Medium	Control & Stop: Implementing good management practices, as well as the chance-find protocol	• Medium
	• Loss of stockpiled topsoil during construction of access road	This will impact on the biodiversity of the receiving environment.	Site establishment phase	• Low-Medium	Control & Stop: Implementing good management practices, as well as the chance-find protocol	• Low – Medium

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
	Dust nuisance as a result of the construction of access road	This will impact on the biodiversity of the receiving environment.	Site establishment phase	Low-Medium	Control & Stop: Implementing good management practices, as well as the chance-find protocol	Low
	Noise nuisance generated by earthmoving machinery	This will impact on the biodiversity of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	Low-Medium	Control & Stop: Implementing good management practices, as well as the chance-find protocol	Low
	Potential erosion of denuded areas	This will impact on the biodiversity of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	Low-Medium	Control & Stop: Implementing good management practices, as well as the chance-find protocol	Low
	Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages	This will impact on the biodiversity of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	Low-Medium	Control & Stop: Implementing good management practices, as well as the chance-find protocol	Low
Site establishment and infrastructure development.	New job opportunities as a result of the mining operation (+)	Contribution to the socio-economic status of the area.	Operational Phase	Medium-High	Control: Proper site management.	Medium-High
Processing, Stockpiling and transporting of material	Dust nuisance generated at the processing plant	This will impact on the biodiversity of the receiving environment	Operational Phase	Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan and Proper site management.	Low
	Noise nuisance stemming from operation of the processing plant	This will impact on the biodiversity of the receiving environment	Operational Phase	Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and	Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
					waste management plan and Proper site management.	
	Potential contamination of environment due to improper waste management	This will impact on the biodiversity of the receiving environment	Operational Phase	Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan and Proper site management.	Low
	Overloading of trucks impacting road infrastructure	This will impact on the biodiversity of the receiving environment	Operational Phase	Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan and Proper site management.	Low-Medium
	Degradation of the access road	This will impact on the biodiversity of the receiving environment	Operational Phase	Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan and Proper site management.	Low-Medium
Sloping and landscaping during rehabilitaition	Safety risk posed by un-sloped areas	This will impact on the biodiversity of the receiving environment	Decommissioning Phase	Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan and Proper site management.	Low
	Erosion of returned topsoil after rehabilitation	This will impact on the biodiversity of the receiving environment	Decommissioning Phase	Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan and Proper site management	Low
	Infestation of the reinstated areas by weeds and invader plant species	This will impact on the biodiversity of the receiving environment	Decommissioning Phase	Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and	Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
					waste management plan and Proper site management	
	Potential impact associated with litter/waste left at the mining area	This will impact on the biodiversity of the receiving environment	Decommissioning Phase	Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan and Proper site management	Low
Cumulative Impacts	Long-term habitat modification.	This will impact on the biodiversity of the receiving environment	Site Establishment-, Operational-, and Decommissioning Phase	Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan and Proper site management	Low - Medium
	Increased risk of invasive species.	This will impact on the biodiversity of the receiving environment	Site Establishment-, Operational-, and Decommissioning Phase	Low - Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan and Proper site management	Low - Medium
	Impact on existing infrastructure as a direct result of the mining operation	This will impact on the biodiversity of the receiving environment	Site Establishment-, Operational-, and Decommissioning Phase	Medium	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan and Proper site management	Low - Medium

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked Appendix N

k) 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 22: Summary of specialist reports

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
The screening report for an environmental authorisation, as required in terms of the 2014 NEMA EIA Regulations on portion of Portion 2 the farm Bonne Esperance 83, Tulbagh, Western Cape Province. The report identified the following list of specialist assessment for inclusion in the assessment report: • Agricultural Impact Assessment; • Archaeological and Cultural Heritage Impact Assessment; • Palaeontology Impact Assessment; • Terrestrial Biodiversity Impact Assessment; • Aquatic Biodiversity Impact Assessment; • Hydrology Assessment; • Noise Impact Assessment; • Radioactivity Impact Assessment; • Traffic Impact Assessment; • Geotechnical Assessment; • Socio-economic Assessment; • Plant Species Assessment; • Animal Species Assessment. Power Construction (Pty) Ltd (hereafter referred to as the applicant) appointed Greenmined Environmental (Pty) Ltd as the environmental impact assessment practitioner (EAP) to undertake the EIA associated with the mining permit application. In light of this Greenmined would like to respond as follows to the list of required specialist studies:			

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED

- Agricultural Impact Assessment (AIA):

  According to the Screening Tool Report, the Agricultural Theme Sensitivity of the area is very high therefore the agricultural potential of the mining area was assessed as part of the EIA, with the input opinion of an AIA specialist as follows also attached as Appendix M Agriculture Impact Assessment.

  The assessment confirms the site's high agricultural sensitivity and its suitability for viable rainfed crop production. Without effective rehabilitation, the proposed mining activity may lead to a reduction in the agricultural production potential, impacting national food security. Given the small area affected (less than 5 hectares), the impact is considered of medium significance without mitigation, but low significance with proper mitigation.

  To minimize the impact on agricultural productivity, the following rehabilitation steps are recommended:

  Topography and Surface Restoration:

  The area should be smoothed to allow for cultivation post-mining.

  Drainage:

  No depressions should be left that could lead to water ponding.

  Erosion Control:

  Erosion across and downslope of the mined area should be prevented.

  Crop Establishment:

  Successfully establish a crop across the rehabilitated area.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
• Archaeological and Cultural Heritage Impact Assessment (HIA) & Paleontology Impact Assessment (PIA): According to the Screening Tool Report, the Archaeological and Cultural Heritage Theme Sensitivity of the area is low. The Paleontology Theme Sensitivity of the area was deemed medium. As per the NID application submitted to Heritage Western Cape (HWC) (appendix M3) The historical core of Saron (a mission station with several historical structures) lies more than 4 km from the site, with no anticipated cultural impacts. The surrounding mountains are visually significant, but the temporary nature of the project minimizes landscape impact. Sparse Early Stone Age artifacts (8 pieces) were identified on-site, far fewer than neighboring sites that warranted mitigation. The density of artifacts was deemed too low to require further intervention. The site lies on Quaternary sands, terrace gravels, and rocks from the Malmesbury Group, which have undergone metamorphosis, destroying any potential fossils. Surface materials (sands and gravels) lack conditions for fossil preservation. No significant graves, slavery-related sites, or other notable heritage resources were identified. The mining site and activities are expected to have no significant impacts on archaeological, paleontological, or other heritage resources. Since there is very low to zero chance of fossils occurring in the rocks to be mined, it is recommended that, as far the palaeontology is concerned, the project should be authorised. There is a very small chance that fossil shells might be present so a Fossil Chance Find Protocol is included in this comment. Dr. Jayson Orton, an archaeologist and heritage consultant, recommended approving the development. All mining activities should stay within approved boundaries, with proper closure and rehabilitation processes followed. The project has been cleared regarding heritage concerns under Section 38 of the National Heritage Resources Act, as no significant impacts were identified. The assessments concluded that the proposed mining activities would not significantly affect archaeological, cultural, or paleontological resources. As such, the project received approval with recommendations to maintain operational boundaries and follow rehabilitation guidelines.			
• Terrestrial Biodiversity Impact Assessment (TBIA), Animal Species Assessment (ASA), Plant Species Assessment (PSA) - attached as Appendix M2: As per the Terrestrial Biodiversity Impact Assessment the report concludes that the proposed development site has been classified as "Very Low" in ecological sensitivity based on assessments. The surveys revealed no significant natural vegetation or Species of Conservation Concern (SCC) within the site or in the immediate surrounding areas. Additionally, the site does not include any ecosystems under threat nor areas designated as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs). Consequently, the proposed project is deemed to have minimal impact on terrestrial biodiversity and plant species, with no fatal flaws identified that would prevent project approval. The report provides several impact management actions to minimize environmental disturbance during construction and operation:			

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
	Vegetation Management: Ensure strict controls to prevent the spread of alien or invasive species. Any alien plants identified on-site should be removed and managed in accordance with regulations, and no non-native plants should be introduced. Erosion Control: Erosion prevention measures by limiting disturbed areas, utilizing existing roads and pathways where possible, and monitoring for signs of erosion, especially in areas vulnerable to runoff should be implemented. Waste and Pollution Control: All staff should be educated in environmental protection measures, including proper handling of waste, avoiding littering, and managing potential pollution sources like chemical spills. Indigenous Vegetation Preservation: Avoid disturbing Any disturbance on indigenous vegetation outside the designated project footprint should be avoided and vehicle movement should be restricted to demarcated areas to prevent unnecessary habitat fragmentation. Regular Monitoring: Conduct ongoing monitoring for erosion and alien plant regrowth, with follow-up treatments as needed to maintain environmental integrity		
▪ Aquatic Biodiversity Impact Assessment (ABIA) & Hydrology Assessment (HA): The proposed project does require a Water Use Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No 36 of 1998). As per the Risk Matrix Assessment (please see Appendix M1). The assessment process indicated low-risk impacts, it's crucial to note that it was conducted without on-site verification. Given the potential for unforeseen ecological consequences, particularly regarding vegetation disturbance, water quality degradation, and sediment runoff, a cautious approach is necessary.			

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
	Although the project may qualify for General Authorisation, it is imperative to implement robust mitigation measures and consider additional on-site verification to minimize environmental impact and ensure sustainable development. A non-prioritised man-made wetland is located within 500m of the site. This wetland appears to be a small dam system considering the surrounding landscape characteristics, it is possible that the wetland system could extend into the site footprint. Although the extensive history of agricultural farming on the site would suggest that the wetland unit is likely to be highly degraded. Any water required for the implementation of the project will be sourced from an authorised source and transported to site. Water required for the implementation of the project will be sourced from an authorised source and transported to site. The use of potable water for dust suppression should be avoided which necessitates a water use license application in terms of Section 21 of the NWA, 1998. Water required for the implementation of the project will be sourced from an authorised source and transported to site.		
• Noise Impact Assessment (NIA): The mining permit application is for a borrow pit that will be mined by direction excavation only. Mining does not necessitate blasting or excessive processing of the material once mined. Mining will be conducted during normal working hours and will not be within proximity to any sensitive receptors such as tourism facilities, farmhouses etc. The mining area is also directly adjacent to the access road and therefore not in a pristine environment. Therefore, the potential impact on the noise ambiance of the receiving environment is expected to be of very low significance. Due to the small scale of the proposed operation and its location in an already compromised environment a NIA is not deemed applicable. The potential impact on the noise ambiance of the receiving environment is expected to be of low significance due to the location of the proposed mining area being far away from residential dwellings. Due to the small scale of the operation a NIA is not deemed applicable.			
• Radioactivity Impact Assessment A radioactivity impact assessment is not deemed necessary for the proposed borrow pit, as the mine will not store any chemicals on site, perform activities of radioactive nature or generate hazardous waste of radioactive nature.			
• Traffic Impact Assessment (TIA): Material from the proposed borrow pit will be used for construction industry in the vicinity by providing material to the Berg and Zen Wind Farm projects and other related and non-related projects in the area. Therefore, access to the borrow pit will be along the existing road that has formal access onto the R44. The operation will be temporary as part of construction in the area. Therefore, a TIA is not deemed necessary.			

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
• Geotechnical Assessment: No reason for a geotechnical assessment could be identified as no permanent infrastructure will be established at the proposed mining area.			
• Socio-economic Assessment (SEA): The material to be sourced from the mining area will be used for the Berg and Zen Wind Farm projects and other related and non-related projects in the area, directly and indirectly creating jobs and resulting in a boost to the local economy. The proposed borrow pit, being close to the Berg and Zen Wind Farm projects, will result in less environmental impacts due to reduced distances for hauling material thereby resulting in reduced CO2 emissions, reduced dust, less impact on the condition of roads and reduced safety risk. road that directly borders the site. Should any additional workers be required on this mining activity they will be sourced from the local community. Workers will daily be transported to the site. The establishment of the mining area on the farm will supply much needed material Berg and Zen Wind Farm projects that is of national importance and is ideally located within direct proximity to the construction works. The landowner agrees with the application and the proposed project will assist the property owner in the diversification of his income. Considering this and the small scale of the project a SEA is not deemed applicable to this project.			

I) Environmental impact statement

i) Summary of the key findings of the environmental impact assessment;

The key findings of the environmental impact assessment entail the following:

Project Proposal

The Applicant, Power Construction (Pty) Ltd, applied for environmental authorisation (EA) and a mining permit to mine silty sand and quartzitic sandstone pebbles on a portion of portion 2 of the farm Bonne Esperance 83, Tulbagh, Western Cape Province. The material will be loaded and hauled to the crushing plant where it will be screened to various sized stockpiles. The silty sand and quartzitic sandstone pebbles will be stockpiled until it is transported from site using tipper trucks. All mining related activities will be contained within the approved mining permit boundaries. The proposed mining area is approximately 5 ha in extent and the applicant, intents to win material from the area for at least 2 years with a possible extension of another 3 years. The silty sand and quartzitic sandstone pebbles to be removed from the borrow pit will be used for construction industry in the vicinity by providing material to the Berg and Zen Wind Farm projects and other related and non-related projects in the area. The proposed borrow pit will therefore contribute to the upgrading / maintenance of infrastructure and building contracts in and around the Gouda / Tulbagh area.

Topography

The area surrounding Gouda predominantly consists of low-lying, gently undulating plains which are utilized extensively for agriculture, especially for grain farming and vineyards. These plains are bordered by steep, rugged mountains that rise dramatically from the valley floor, creating a picturesque contrast and adding to the area's scenic value. The topography is also shaped by the Berg River, which flows northward and provides an essential water source, supporting both agricultural and ecological needs in the region.

The site lies at an elevation of approximately 100 meters above sea level. This elevation places it within the relatively low-lying Breede River Valley, which is bordered by dramatic mountainous terrain that influences the region’s microclimates and landscape. The valley itself is characterized by flat to gently rolling plains, ideal for agriculture, with fertile soils supporting extensive grain farming and vineyards.

Visual Characteristics

The viewshed analysis indicated that the proposed mining operation for silty sand and quartzitic sandstone pebbles will have a low visual impact. Although the mining area will be visible from the public road (R44), approximately 2.5 km away, the temporary nature and small scale of the excavation activities mean that the impact will be minimal. The mining will involve equipment similar to that used in farming operations, further blending into the agricultural landscape. Following successful rehabilitation of the site upon closure of the mine, no lasting visual impact is anticipated.

Air and Noise Quality

The proposed activity will contribute the emissions mechanical mining equipment to the receiving environment for the duration of the operational phase. Should the permit holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use. The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the traffic of the surrounding area.

Geology and Soil

The geological profile of the site primarily consists of phyllite shale, schist, and greywacke of the Porterville Formation within the Malmesbury Group, with certain areas overlain by alluvial deposits and terrace gravels. The soil is moderately deep with a medium texture, featuring Kransfontein 2210 soils that exhibit underlying wetness. These soils are classified between low to moderate (4) and moderate to high (6) on the soil capability scale, with a medium-high potential score of 6 on the 10-point system used by Western Cape soil scientists. Despite the moderate-to-high classification, the soils have limitations, particularly a high stone content that results in low water-holding capacity, potentially affecting crop production during dry periods.

According to the Agriculture Assessment Report (Appendix M), from an agricultural perspective, it is recommended that comprehensive rehabilitation and soil management practices are implemented to mitigate any loss in productivity. These steps include:

Drainage and Erosion Control:

Ensure proper drainage to avoid waterlogging and reduce erosion risks by contouring the mined area to blend with surrounding terrain.

Vegetation Restoration:

Re-establish vegetation on rehabilitated land to prevent soil erosion and support soil health, potentially using cover crops to enhance organic matter and structure.

Monitoring and Maintenance:

Regularly monitor soil quality, vegetation growth, and drainage functionality, adjusting practices as needed to maintain long-term agricultural viability.

By following these steps, the site can be restored to support viable crop production, ensuring its continued contribution to agricultural productivity and national food security. Therefore, from an agricultural impact point of view, it is recommended that the development be approved.

Mining, Biodiversity and Groundcover

As per the Agriculture Assessment Report (Appendix M), the region's ground cover includes annual crops, with some surrounding areas utilizing irrigation where available. The site is situated within a Protected Agricultural Area (PAA), designated as Category B, rain-fed, highlighting its importance for sustainable crop production and food security. While the agricultural potential is high, the ground cover in the area also faces challenges from seasonal changes, erosion risks, and invasive species, which could impact the overall productivity if not managed effectively. The primary impact of the mining activities on vegetation and groundcover includes the temporary removal of existing crops and disturbance of the soil structure, which is essential for crop productivity. During mining operations, all groundcover on the site will be cleared, affecting the local agricultural landscape temporarily. Without careful rehabilitation, this disturbance could lead to long-term degradation of the soil and groundcover, reducing the site’s ability to support future crops and contributing to erosion. Given that the area is primarily used for crop production, the lack of native vegetation minimizes the ecological impact, though soil health remains critical for future agricultural viability.

It is proposed that should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the vegetation and groundcover in general is deemed to be of low significance.

Fauna

Various small mammals and reptiles occur are likely to on the property. The fauna at the site will not be impacted by the proposed mining activities as they will be able to move away or through the site, without being harmed. Workers should be educated and managed to ensure that no fauna at the site is harmed. At this stage no resident protected or red data faunal species could be identified within the earmarked footprint. The study area falls over a property that is noted to be operational game farms, should this mining permit be granted farm owner will be consulted prior to commencement of any activities to ensure that safety of animals and workers. Workers will be informed and managed to ensure that no fauna at the site is harmed. No poaching or hunting of animals will be allowed. All construction vehicles must adhere to a low-speed limit (<40km/h) to avoid collisions with susceptible species such as snakes and tortoises. Trenches and deep excavations should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench.

Cultural and Heritage Environment

According to the Notice of Intent to Develop conducted by ASHA Consulting (Pty) Ltd,

Should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the surrounding area in general is deemed to be of low significance. In light of this, a Heritage Impact Assessment was not deemed necessary by the heritage specialist.

Site Specific Infrastructure

No infrastructure has been established on the property that can be affected by the proposed development.

During the environmental impact assessment process, the feasibility of the proposed site was assessed to identify fatal flaws that are deemed as severe as to prevent the activity continuing or warrant a site or project alternative. The outcome of the assessment showed that should the mitigation measures and monitoring programmes

proposed in this document be implemented, no fatal flaws could be identified that prevents the activity continuing.

ii) Final Site Map

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

See the map indicating site activities attached as Appendix C.

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

The positive impacts associated with the project include:

- Possible work opportunities to local residents.
- Return of the mining area to its previous state upon closure of the project; and
- Diversification of the land use of the property.

Table 23:Potential negative impacts with a low-medium or higher significance/risk.

POTENTIAL IMPACT	SIGNIFICANCE (AFTER MITIGATION)
Visual intrusion because of site establishment.	Low-Medium
Visual intrusion caused by mining activities	Low-Medium
No impact could be identified other than the beacons being outside the boundaries of the approved mining area	Low-Medium
Alteration of the agricultural sense of place	Low – Medium
Loss of agricultural land for duration of mining	Low – Medium
Visual intrusion as a result of site establishment.	Low-Medium
Visual intrusion caused by mining activities.	Low-Medium
Visual intrusion as a result of excavation and from loading and vehicles transporting the material	Low-Medium
Unsafe working environment for employees	Low-Medium

POTENTIAL IMPACT	SIGNIFICANCE (AFTER MITIGATION)
Visual intrusion caused by construction of site access road	Low-Medium
Loss of stockpiled topsoil during construction of access road.	Low
Loss of stockpiled topsoil during mining and stockpiling	Low
Dust nuisance generated at the processing plant	Low-Medium
Visual intrusion as a result of operation of the processing plant	Low - Medium
Overloading of trucks impacting road infrastructure	Low – Medium
Degradation of the access road	Low – Medium
Long-term habitat modification.	Low – Medium
Increased risk of invasive species.	Low – Medium
Impact on existing infrastructure as a direct result of the mining operation	Low – Medium

m) 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 condition of authorisation.

Table 24: Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
TOPOGRAPHY Landscaping of Mining Area	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	**Stabilize and Contour Landform** Ensure that the post-mining landscape is safe, stable, and blends with the surrounding natural environment. Design landforms to facilitate natural water flow and prevent water pooling or erosion. **Facilitate Agricultural and Ecological Restoration** Prepare the site for potential low-potential agricultural use or natural regrowth. Reintroduce vegetation that reflects local indigenous flora to promote biodiversity recovery. **Control and Manage Erosion** Implement grading, profiling, and scarification measures to reduce erosion risks. Stabilize soil and control sediment runoff into nearby areas. **Redistribute Topsoil Strategically**	Effectively restoring the mined area to allow the return of land use to agricultural purposes.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		Maximize the recovery and redistribution of available topsoil to support vegetation regrowth and ecosystem restoration. **Ensure Compliance with Regulatory Standards** Fulfil the DMRE's closure requirements, including the removal of mining equipment, stockpiles, and waste. Align rehabilitation activities with section 44 of the Mineral and Petroleum Resources Development Act (MPRDA, 2002). **Monitor and Manage Invasive Species** Eradicate Category 1a and 1b invasive species as per NEM regulations throughout the rehabilitation process. **Ensure Progressive Rehabilitation** Conduct phased rehabilitation in sections of 1 to 1.5 hectares, enabling continuous oversight and adjustments to achieve closure objectives. On completion of operations, deal with all structures or objects in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). • On completion of mining operations, scarify the surface of all plant-, stockpiling-, and/or office areas, if compacted due to hauling and dumping operations, to a depth of at least 200mm and graded it to an even	

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		surface condition. Where applicable/possible return topsoil to its original depth over the area.	
VISUAL CHARACTERISTICS Visual mitigation	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Ensure that the site have a neat appearance and is kept in good condition at all times. • Store mining equipment in a dedicated area when not in use. • Limit vegetation removal, and only strip topsoil immediately prior to the mining/use of a specific area. • Contain excavations to the approved footprint of the permitted area. • Upon closure, rehabilitate the site to ensure that the visual impact on the aesthetic value of the area is reduced to the minimum.	• Minimise the impact of the mining operations on the visual characteristics of the receiving environment during the operational phase and minimise the residual impact after closure.
AIR AND NOISE QUALITY Dust Mitigation	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Control the liberation of dust into the surrounding environment by the use of; inter alia, water spraying and/or other dust-allaying agents. • Ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. • Limit speed on the haul roads to 20 km/h and 40 km/h on the access road to prevent the generation of excess dust. • Minimise areas devoid of vegetation, and only remove vegetation immediately prior to mining. • Install water sprayers at the crusher plant to alleviate dust generation from the transfer points. • Minimise fines, blowing from the drop end of the crusher plant by attaching strips of used conveyor belts to the conveyor's end.	• Dust prevention measures are applied to minimise the impact.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		• Weekly remove compacted dust from the crusher plant to eliminate the dust source. • Flatten loads to prevent spillage during transportation on public roads. • Consider weather conditions upon commencement of daily operations. Limit operations during very windy periods to reduce airborne dust and resulting impacts. • Ensure dust generating activities comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM: AQA, 2004 and ASTM D1739 (SANS 1137:2012). • Implement best practice measures during the stripping of topsoil, excavation, and transporting of material from site to minimize potential dust impacts.	
AIR AND NOISE QUALITY Noise Mitigation	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Ensure that employees and staff conduct themselves in an acceptable manner while on site. • No loud music may be permitted at the mining area. • Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996. • Contract a qualified occupational hygienist to quarterly monitor and report on the personal noise exposure of the employees working at the mine. Monitoring must be in accordance with SANS 10083:2004 (Edition 5) sampling method as well as NEM: AQA 2004, SANS 10103:2008. • Implement best practice measures to minimise potential noise impacts.	• Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
GEOLOGY AND SOIL Topsoil Handling	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	The proposed mining site lacks significant topsoil, as it is characterized by a rocky terrain previously under cultivation for wheat. Due to the minimal natural topsoil layer, any rehabilitation efforts will not involve extensive topsoil replacement. Instead, rehabilitation will focus on redistributing whatever minimal soil material can be stripped during mining operations. This approach ensures that the disturbed areas are stabilized and prepared for future agricultural use or natural vegetation, while adhering to the limited soil resources available on-site. Therefore, any available topsoil should be managed as follows if practically possible: • Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process. • Ensure topsoil stripping, stockpiling and re-spreading is done in a systematic way. Plan mining in such a way that topsoil is stockpiled for the minimum possible time. • Place the topsoil on a levelled area, within the mining footprint. Do not stockpile topsoil in undisturbed and inactive areas. • Ensure that topsoil heaps do not exceed 1.5 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. • Keep temporary topsoil stockpiles free of invasive plant species. • Vegetate the topsoil heaps to be stored longer than 6 months with an indigenous grass seed mix if vegetation does not naturally germinate within the first growth season. • Divert storm- and runoff water around the stockpile area to prevent erosion.	• Adequate fertile topsoil is available to rehabilitate the mined area.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		• Spread the topsoil evenly, to a depth of 300 mm, over the rehabilitated area upon closure of the site. • Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season. • Control run-off water with temporary banks, where necessary, to prevent accumulation of run-off causing down-slope erosion. • Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.	
HYDROLOGY Erosion Control and Storm Water Management	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.		• Impact on the environment caused by stormwater discharge is avoided and erosion is managed.
TERRESTRIAL BIODIVERSITY, CONSERVATION AREAS AND GROUNDCOVER Management of vegetation removal.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• The mining boundaries must be clearly demarcated, and all operations must be contained to the approved mining area. The area outside the mining boundaries must be declared a no-go area, and all staff must be educated accordingly. • Blanket clearing of vegetation must be limited to the proposed footprint and associated infrastructure. No clearing outside of the minimum required footprint to take place.	• Vegetation clearing is restricted to the authorised development footprint of the mine.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		• Clearing of vegetation should be minimized and avoided where possible. • Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further. • The appointed ECO must provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment, especially during the site establishment phase, when the majority of vegetation clearing is taking place. • All vehicles must remain on demarcated roads and no unnecessary driving in the veld outside these areas may be allowed. • No plant species, whether native or exotic, should be brought into, ore removed from, the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants. • No plants may be translocated or otherwise uprooted or disturbed for rehabilitation or other purposes without express permission from the ECO and without the relevant permits. • No fires must be allowed on-site.	

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
TERRESTRIAL BIODIVERSITY, CONSERVATION AREAS AND GROUNDCOVER Management of invasive plant species.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Implement an invasive plant species management plan to control all invasive plant species on site in terms of NEM:BA, 2004 and CARA, 1983. Do weed/alien ongoing clearing on throughout the life of the mining activities. • Do not allow planting or importing of any alien species to the site for landscaping, rehabilitation or any other purpose. • Keep all stockpiles (topsoil & overburden if any) free of invasive plant species. • Control declared invader or exotic species on the rehabilitated areas.	• Mining area is kept free of invasive plant species.
FAUNA Protection of fauna	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Site access should be controlled, and no unauthorised persons should be allowed onto the site. • Any fauna directly threatened by the associated activities should be removed to a safe location by a site manager. • The collection/trapping, hunting, or poisoning of any animals at the site is strictly forbidden. Signs must be put up to enforce this. Personnel should not be allowed to wander off demarcated areas. • Fires must not be allowed on site. • All hazardous materials should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel, and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. • All construction and maintenance motor vehicle operators should undergo an environmental induction that includes instruction on the need to comply with speed limits, to respect all forms of wildlife. All vehicles	• Disturbance to fauna is minimised.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		should adhere to a low-speed limit (40 km/h) to avoid collisions with susceptible species. • Construction vehicles must be limited to a minimal footprint on site (no movement outside of the earmarked footprint). • All personnel must undergo environmental induction regarding fauna management and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. Workers must be instructed to report any animals that may be trapped in the working area. • Schedule activities and operations during least sensitive periods, to avoid migration, nesting, and breeding seasons. • Ensure that cables and connections are insulated successfully to reduce electrocution risk. • Use environmentally friendly chemical products. • No litter, food or other foreign material may be thrown or left around the site.	
CULTURAL AND HERITAGE ENVIRONMENT Archaeological, heritage and palaeontological aspects.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Confine all mining to the development footprint area. • Implement the following change find procedure when discoveries are made on site: • If any significant archaeological remains are located during this survey which cannot be avoided by, or excluded from the site, they will require mitigation prior to any mining-related activities on the site. A Workplan application will need to be made to HWC to conduct this work. • Should any human remains be encountered at any stage during the works associated with the project,	• Impact to cultural/heritage resources is avoided or at least minimised.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		work must in the vicinity must cease immediately, the remains must be left in situ but made secure and the project archaeologist and HWC must be notified immediately to decide about how to deal with the remains. All mining must be confined to the development footprint area. • If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. • It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. • The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify the HWC. • According to the Heritage Specialist, a Heritage Impact Assessment was not deemed necessary (please see Appendix M).	
LAND USE Loss of agricultural land for duration of mining.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.	• Smooth and contour the soil to prevent water ponding and enhance drainage, which will support future crop growth.	• Mining has the least possible impact on the operation of the property.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
	Compliance to be monitored by the Environmental Control Officer.	• Implement erosion control strategies during and after mining to preserve soil quality and prevent runoff that could impact surrounding fields. • Following the completion of mining, replant crops or groundcover promptly to stabilize the soil, restore agricultural productivity, and maintain the visual landscape consistent with the surrounding farmland.	
EXISTING INFRASTRUCTURE Management of the access road.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Divert storm water around the access road to prevent erosion. • Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed and inactive areas. • Repair rutting and erosion of the access road caused as a direct result of the mining activities. • Prevent the overloading of the trucks and file proof of load weights for auditing by relevant officials. • Restrict the speed of all mining equipment/vehicles to 40 km/h on the access roads.	• The access road remains accessible to the landowner and lawful occupiers during the operational phase, and upon closure, the road is returned in a better, or at least the same state as received by the permit holder.
GENERAL Waste management	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Ensure regular vehicle maintenance, repairs and services only take place at the workshop and service area. Ensure drip trays are present if emergency repairs are needed on equipment not able to move to the workshop. Dispose all waste products in a closed container/bin to be removed from the emergency service area (same day) to the workshop to ensure proper disposal. Treat this as hazardous waste and dispose of it at a registered hazardous waste handling facility, alternatively arrange collection by a registered	• Wastes are appropriately handled and safely disposed of at recognised waste facilities.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		hazardous waste handling contractor. File safe disposal certificates for auditing purposes. • If a diesel bowser is used on site, always equip it with a drip tray. Use drip trays during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling. • Ensure drip trays are cleaned after each use. Do not allow dirty drip trays to be used on site. Dispose of dirty rags used to clean the drip trays as hazardous waste into a designated bin at the workshop, where it is incorporated into the hazardous waste removal system. • Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and remove it from the site, either for resale or for appropriate disposal at a recognized facility. File proof. • Obtain an oil spill kit and train the employees in the emergency procedures to follow when a spill occurs as well as the application of the spill kit. • Clean spills immediately, within two hours of occurrence, to the satisfaction of the Regional Manager (DMRE) by removing the spillage together with the polluted soil and containing it in a designated hazardous waste bin until it is disposed of at a recognised facility. File proof. • Ensure suitable covered receptacles are always available and conveniently placed for the disposal of general 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 to be collected at least	

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		once a month and disposed of at a recognized landfill site. Take specific precautions to prevent refuse from being dumped on or in the vicinity of the mine area. File proof of disposal. • Handle biodegradable refuse as indicated above. • Encourage re-use or recycling of waste products. • Do not bury or burn waste on the site. • Provide ablution facilities in the form of a chemical toilet/s. Anchor the chemical toilets (to prevent blowing/falling over) and arrange that it is serviced at least once a week for the duration of the mining activities by a registered liquid waste handling contractor. File the safe disposal certificates. • Ensure that the use of any temporary, chemical toilet facilities do not cause any pollution to water sources or pose a health hazard. In addition, ensure that no form of secondary pollution arise from the disposal of refuse or sewage from the temporary, chemical toilets. Address any pollution problems arising from the above immediately. • Do not discharge water containing waste into the natural environment. • Implement measures to contain the wastewater and safely dispose thereof. • Report any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities to the Department of Water and Sanitation and other relevant authorities. • Implement the use of waste registers to keep record of the waste generated and removed from the mining area.	

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
GENERAL Storage/handling of hazardous substances/chemicals.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Place chemical storage areas on level ground to prevent offsite migration of any spilled product. • Ensure that the floor of the storage area is impermeable to prevent seepage of spilled products into the ground or ground water. • Control access to the chemicals/substances and implement a notification system of an appropriate staff member. • Ensure that the storage area is out of the 1:100-year floodline or further than 100 m from the edge of a watercourse, whichever is greatest. • Maintain a Hazardous Substances Register and keep Safety Data Sheets (SDS) current for all chemicals used on site. • Ensure any fuel/used oil tanks have secondary containment in the form of an impermeable bund wall and base within which the tanks sit, raised above the floor, on plinths. Check that the bund capacity is sufficient to contain 110% of the tank's maximum capacity. Ensure that the distance and height of the bund wall relative to that of the tank is taken into consideration to ensure that any spillage does not result in hydrocarbons/other substances spouting beyond the confines of the bund. • Establish a formal inspection routine to check all equipment in the bund area, as well as the bund area itself for malfunctions or leakages. Inspect the bund area at least weekly and remove any accumulated rainwater and hand it as contaminated water. Check all valves and outlets to ensure that its intact and closed securely.	• The chemical/hazardous substances used on site are stored according to specifications without contaminating the receiving environment.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		• Ensure that the bund base slope towards an oil sump of sufficient size. Do not allow contaminated water to mix with clean water and contain it until it is collected by a registered hazardous waste handling contractor or disposed of at a registered hazardous waste handling facility. • Use drip trays under all stationary equipment or vehicles. Place used drip trays within a bunded area and do not store on the bare soil. Discard the wastewater originating from the cleaning of drip trays into the oil sump.	
GENERAL Management of health and safety risks	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Ensure that workers have access to the correct PPE as required by law. • Locate sanitary facilities within 100 m from any point of work. • Manage all operations in compliance with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).	• Employees work in a healthy and safe environment.

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

The management objectives listed in this report under *Part A(1)(m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* above should be considered for inclusion in the environmental authorisation.

o) Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

The assumptions made in this document which relate to the assessment and mitigation measures proposed, stem from site specific information gathered from site inspections, desktop studies as well as the specialist study. No uncertainty regarding the proposed project or the receiving environment could be identified.

p) Reasoned opinion as to whether the proposed activity should or should not be authorised

i) Reasons why the activity should be authorised or not.

Should the mitigation measures and monitoring programmes proposed in this document be implemented on site, no fatal flaws could be identified that were deemed as severe as to prevent the activity continuing.

ii) Conditions that must be included in the authorisation

The management objectives listed in this report under *Part A(1)(m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* should be considered for inclusion in the environmental authorisation.

q) Period for which the Environmental Authorisation is required.

The Applicant requests the Environmental Authorisation to be valid for a five-year period to correspond with the validity of the mining permit.

r) Undertaking

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

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

s) Financial Provision

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

i) Explain how the aforesaid amount was derived

The annual amount required to manage and rehabilitate the environment was estimated to be R 585 760. Please see the explanation as to how this amount was derived at attached as Appendix H – Financial and Technical Competence Report.

ii) Confirm that this amount can be provided 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).

Power Construction (Pty) Ltd will be responsible for the financial and technical aspects of the proposed mining project. The operating expenditure is provided for as such in the Financial and Technical Competence Report attached as Appendix H to this report.

t) Specific Information required by the competent Authority

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

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

(Provide the results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an Appendix)

The following potential impacts were identified that may impact on socio-economic conditions of directly affected persons:

- **Visual intrusion associated with the proposed mining activities:**

  The viewshed analysis indicated that the proposed mining operation for silty sand and quartzitic sandstone pebbles will have a low visual impact. Although the mining area will be visible from the public road (R44), approximately 2.5 km away, the temporary nature and small scale of the excavation activities mean that the impact will be minimal. The mining will involve equipment similar to that used in farming operations, further blending into the agricultural landscape. Following successful rehabilitation of the site upon closure of the mine, no lasting visual impact is anticipated.

- **Dust nuisance caused as a result of the proposed mining activities:**

  The proposed activity will contribute the emissions mechanical mining equipment to the receiving environment for the duration of the operational phase. Should the permit holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use.

- **Noise nuisance as a result of mining activities:**

  The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the traffic of the surrounding area. The distance of the proposed mining area from residential infrastructure further lessens the potential noise impact.

- **Employment opportunities and socio-economic impact:**

  The proposed labour component of the activity will be five or six employees. The operation will contribute to the local economy in the area, both directly and through the multiplier effect that its continued presence will create.

  Equipment and supplies will be purchased locally, and wages are spent at local businesses, generating both jobs and income in the area. Although the employees are not resident on the site, they will be from the surrounding community.

- **Compliance Management:**

  Should the MP application be approved, compliance with the mitigation measures and conditions approved as part of the EMPR and the Environmental Authorisation (EA) will be compulsory to the Permit Holder as both the EMPR and EA are legally binding documents. In terms of Section 34 of the NEMA EIA Regulations, 2014 (as amended 2017) the holder of an EA must: “(a) ensure that the compliance with the conditions of the environmental authorisation and the EMPR, and where applicable the closure plan, I audited; and (b) submit an environmental audit report to the relevant competent authority”. The regulations further stipulate that the environmental audit report (EAR) must be prepared by an independent person with the relevant environmental auditing expertise; provide verifiable findings on the level of performance against and compliance

with the provisions of the requisite EA, EMP and Closure Plan, and the ability of the measures contained in the EMPR and Closure Plan to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking. Within 7 days of the date of submission of an EAR to the competent authority (DMRE) the holder of the EA must notify all potential and registered I&AP's of the submission of that report and make such report immediately available to anyone on request, and on a publicly accessible website.

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

(Provide the results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of the Act, attach the investigation report as Appendix 2.19.2 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6 and 2.12 herein).

The proposed mining and bulk sampling activities at Portion 2 of the farm Bonne Esperance 83, within the Tulbagh District of the Western Cape, have been evaluated under the National Heritage Resources Act (NHRA), Section 3(2). The site encompasses elements of the national estate, such as landscapes, archaeological, and palaeontological resources. Key findings indicate no significant impact on the historical core of Saron, located over 4 kilometres away, or on visually significant natural landscapes due to the temporary and small-scale nature of the project. Archaeological assessments revealed a sparse presence of Early Stone Age artifacts, with no significant density to warrant further mitigation. Palaeontological investigations confirmed the absence of fossil preservation potential in the targeted Quaternary sands and gravels. Based on these assessments, the proposed development is unlikely to adversely affect any national estate resources. Mitigation measures for minor impacts are incorporated into the Heritage Impact Assessment (HIA) attached as appendix M3 - Notice of Intent to Develop conducted by ASHA Consulting (Pty) Ltd.

u) Other matters required in terms of section 24(4)(a) and (b) of the Act.

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as Appendix 4)

The decision to pursue Site Alternative 1 (S1) on Portion 2 of the farm Bonne Esperance 83 as the preferred location for the proposed mining operation was driven by both environmental and practical considerations. S1's selection offers an optimal balance

between resource availability and minimal disruption to surrounding land uses, underscoring its status as the most suitable option. The area, located on a currently inactive portion of farmland in Tulbagh, Western Cape, has been chosen for its naturally concentrated deposits of high-quality silty sand and quartzitic sandstone pebbles, critical to the project's success.

Alternative sites on the farm were carefully evaluated, but environmental and agricultural factors made them less feasible. Specifically, these alternatives include areas supporting sensitive renosterveld vegetation or those with higher agricultural potential, making them ecologically and economically inappropriate for mining activities. Additionally, these areas lack the concentrated, high-quality mineral resources required, reaffirming S1 as the only viable option.

An alternative layout, Site Alternative 2 (S2), was also explored but found unsuitable. S2 posed increased environmental risks, with higher potential for disturbances and insufficient mineral quality and quantity to support the project's objectives. While technically feasible, the development of S2 would lead to significant ecological disruption without providing substantial benefits over S1, thus rendering it impractical.

The chosen mining method—utilizing earth-moving equipment to excavate, load, and transport materials—is compatible with S1's landscape and resource composition. Since S1 is already used for wheat farming and occasional cattle grazing, the proposed activity allows for minimal interference with these current land uses while effectively utilizing the site's natural resources. Alternative designs and layouts for the borrow pit were reviewed, but none proved as viable, either due to inadequate resource concentration or incompatibility with the project's requirements.

In conclusion, Site Alternative 1 was selected as the preferred location for its ability to provide the necessary materials while balancing environmental and agricultural concerns. This choice ensures a sustainable approach to mining on the property, meeting the project's needs with minimal impact on surrounding areas.

The silty sand and quartzitic sandstone pebbles to be removed from the borrow pit will be used for construction industry in the vicinity by providing material to the Berg and Zen Wind Farm projects and other related and non-related projects in the area. The proposed borrow pit will therefore contribute to the upgrading / maintenance of infrastructure and building contracts in and around the Gouda / Tulbagh area, if however, the no-go alternative is implemented the Applicant could not utilise the mineral resource on this property and the

construction industry of Gouda / Tulbagh area will not benefit from diversification of the mineral sources which will escalating product costs.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME.

a) Details of the EAP,

(Confirm that the requirements 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 Sonette Smit of Greenmined Environmental that acts as EAP on this project has been included in Part A Section 1(a) as well as Appendix K as required.

b) Description of the Aspects of the Activity

(Confirm that the requirements 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 aspects of the activity that are covered by the draft environmental management programme has been described and included in Part A, section (1)(h).

c) 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)

As mentioned under Part A, section (1)(l)(ii) this map has been compiled and is attached as Appendix C to this document.

d) 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 decommissioning phase will focus on restoring the 5-hectare borrow pit progressively, with rehabilitation occurring in sections of 1 to 1.5 hectares as mining proceeds. The primary closure objective is to render the site safe and suitable for agricultural use. With no buildings or infrastructure requiring demolition, rehabilitation will concentrate on stabilizing the landform and ensuring adequate drainage. The existing access road will be adapted as a drainage pathway to prevent water accumulation within the excavation area, guiding water flow naturally according to the surrounding topography.

In accordance with the DMRE's minimum closure objectives, the decommissioning will also involve clearing the processing area, removing stockpiled materials, site

infrastructure, and equipment, and landscaping the disturbed areas. Since restoring the borrow pit to its original topography with fill material is impractical, the rehabilitation plan is to create a modest landscape feature. Unlike quarry benching, which is unnecessary in a borrow pit, the area will be contoured to blend with the natural landscape. Due to the limited topsoil, rehabilitation will prioritize redistribution of any available soil material. (see Appendix L for the Closure Plan).

The decommissioning activities will therefore consist of the following:

- Sloping and landscaping the borrow pit;
- Removing all stockpiled material (which will not be further required by the landowner);
- Removing all mining machinery and equipment from site;
- Landscaping all disturbed areas and replacing the topsoil (available soil) and
- Controlling/monitoring the invasive plant species.

The future land use of the proposed area will revert back to its previous state. The current state of the area is inactive previously used for agriculture (wheat fields / cattle grazing).

The applicant will comply with the minimum closure objectives as prescribed by the DMRE and detailed below:

- Rehabilitation of the excavated area:

Rehabilitation of the proposed mining site will prioritize stabilizing and preparing disturbed areas for potential agricultural use or natural regrowth, considering the minimal topsoil available. Key elements of this plan are as follows:

Rehabilitation Process:

The operation will proceed in staged sections of approximately 1–1.5 hectares, with each section undergoing rehabilitation immediately after completion of mining activities in that area. Earthmoving equipment will handle in-situ material during operations, ensuring that disturbed areas are minimized. Given the rocky, low-topsoil nature of the site, topsoil recovery will be limited to stripping whatever minimal soil can be recovered from the rocky terrain. This soil will be stockpiled temporarily for later redistribution.

Topsoil Redistribution:

Although the site lacks substantial topsoil, any minimal amount of soil material recovered will be returned to its original depth after profiling the excavated areas with acceptable contours and erosion control measures. This redistribution will help stabilize the soil, reduce erosion, and foster natural regrowth or future agricultural use.

Erosion Control and Profiling:

Excavated areas will be contoured and graded to prevent erosion and promote natural water flow. These erosion control measures will also help prevent sediment runoff into nearby areas and support the overall stability of the rehabilitated sections.

Waste Management:

No waste material will be allowed to be deposited within the excavated areas. This will help maintain the integrity of the rehabilitated landscape and prevent any contamination that could hinder vegetation growth or future agricultural use.

Future Land Use Preparation:

This rehabilitation approach is tailored to prepare the land for either future agricultural use or natural regrowth, aligning with the site's existing land use and minimal soil resources. By focusing on stabilization and basic soil restoration, the site will be left in a condition that allows for flexible land use options post-rehabilitation.

This staged approach will ensure that each section is rehabilitated to acceptable standards before moving on to the next, facilitating a controlled, orderly rehabilitation process with ongoing oversight and soil management as required.

- Rehabilitation of plant, office, and service areas:

Stockpiles must be removed during the decommissioning phase, the area ripped, and the topsoil (available soil as described above) returned to its original depth to provide a growth medium.

On completion of operations, all structures or objects shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002):

  - Where sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
  - The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora (not applicable to this application).

Photographs of the plant, office and service areas, 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 DMRE Regional Manager.

On completion of mining operations, the surface of these areas, if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 200mm and graded to an even surface condition.

If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the DMRE Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a seed mix to his or her specification.

- Final rehabilitation:

Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation.

All mining equipment, and other items used during the mining period must be removed from the site (section 44 of the MPRDA).

Waste material of any description, including receptacles, scrap, rubble, and tyres, must be removed entirely from the mining area, and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.

The management of invasive plant species must be done in a sporadic manner during the life of the mining activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) will be eradicated from the site.

Final rehabilitation shall be completed within a period specified by the Regional Manager.

Once the mining area was rehabilitated the permit holder is required to submit a closure application to the Department of Mineral Resources and Energy in accordance with section 43(4) of the MPRDA, 2002 that states: *"An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated in subsection (3) and must be accompanied by the prescribed environmental risk report".* The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998 (as amended).

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ii) Volume and rate of water use required for the operation

As no washing is proposed for this project, the applicant will exclusively use water for dust suppression purposes on the access road when needed. Approximately 90 000 litre water/day will be needed during the dry months. The water will be sources from an authorised source and transported to the mining area in a water truck that will moisten the problem area.

iii) Has a water use licence has been applied for?

As previously stated, the proposed project does require a Water Use Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No 36 of 1998). As per the Risk Matrix Assessment (please see Appendix M1). The assessment process

indicated low-risk impacts, it's crucial to note that it was conducted without on-site verification. Given the potential for unforeseen ecological consequences, particularly regarding vegetation disturbance, water quality degradation, and sediment runoff, a cautious approach is necessary.

Although the project may qualify for General Authorisation, it is imperative to implement robust mitigation measures and consider additional on-site verification to minimize environmental impact and ensure sustainable development. A non-prioritised man-made wetland is located within 500m of the site. This wetland appears to be a small dam system considering the surrounding landscape characteristics, it is possible that the wetland system could extend into the site footprint. Although the extensive history of agricultural farming on the site would suggest that the wetland unit is likely to be highly degraded. Any water required for the implementation of the project will be sourced from an authorised source and transported to site. The use of potable water for dust suppression should be avoided.

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iv) Impacts to be mitigated in their respective phases

Table 25: Impact to be mitigated in their respective phases

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
(as listed in 2.11.1)	of operation in which activity will take place. State; Planning and design, Pre-Construction, Operational, Rehabilitation, Closure, Post closure	(volumes, tonnages and hectares or m^2)	(describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants)	(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either – Upon cessation of the individual activity or Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
Demarcation of site with visible beacons.	Site Establishment phase	5 ha	Demarcation of the site will ensure that all employees are aware of the boundaries of the mining area, and that work stay within the approved area.	Mining of silty sand and quartzitic sandstone pebbles is only allowed within the boundaries of the approved area. • MPRDA, 2008 • NEMA, 1998	Beacons need to be in place throughout the life of the activity.
Site establishment and infrastructure development.	Site Establishment & Operational Phase	5 ha	**Loss of agricultural land for duration of mining:** According to the landowner, the agricultural potential of the study area (S1) is of lower significance and therefore he supports the proposed mining operation. The proposed mining area will	Use of agricultural land must be managed in accordance with the: • CARA, 1983 Closure Plan (Appendix L)	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			revert back to its previous state upon closure. The mining area in its original state and again used for agricultural purposes.		
• Site establishment and stockpiling of topsoil and overburden	Site Establishment & Operational Phase	5 ha	**Visual Mitigation** • The site must have a neat appearance and be kept in good condition at all times. • Mining must be contained to the boundaries of the permitted area. • Mining equipment must be stored neatly in dedicated areas when not in use. • The permit holder must limit vegetation removal (if applicable), and stripping of topsoil may only be done immediately prior to the use of a specific area. • The excavation must be contained in within the approved footprint of the permitted area. • Upon closure the mining area must be rehabilitated and levelled to remove the visual impact on the aesthetic value of the area.	Management of the mining area must be in accordance with the: • MPRDA, 2008 • NEMA, 1998	Throughout the site establishment-, and operational phase.
• Site establishment and infrastructure development. • Cumulative Impacts	Site Establishment phase	5 ha	**Management of vegetation removal:** • The mining boundaries must be clearly demarcated, and all operations must be contained to the approved mining area. The area outside the mining boundaries must be declared a no-go area, and all staff must be educated accordingly. • Blanket clearing of vegetation must be limited to the proposed footprint and associated infrastructure. No clearing outside of the minimum required footprint to take place. • Clearing of vegetation should be minimized and avoided where possible.	Natural vegetated areas must be managed in accordance with the: • NEM:BA 2004 • Western Cape Biodiversity Plan	Throughout the site establishment phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further. • The appointed ECO must provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment, especially during the site establishment phase, when the majority of vegetation clearing is taking place. • All vehicles must remain on demarcated roads and no unnecessary driving in the veld outside these areas may be allowed. • No plant species, whether native or exotic, should be brought into, ore removed from, the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants. • No plants may be translocated or otherwise uprooted or disturbed for rehabilitation or other purposes without express permission from the ECO and without the relevant permits. • No fires must be allowed on-site.		
• Site establishment. • Sloping and landscaping upon closure of the mining area.	Site Establishment- and Decommissioning phase	±5 ha	**<u>Topsoil Management:</u>** The proposed mining site lacks significant topsoil, as it is characterized by a rocky terrain previously under cultivation for wheat. Due to the minimal natural topsoil layer, any rehabilitation efforts will not involve extensive topsoil replacement. Instead, rehabilitation will focus on redistributing whatever minimal soil material can be stripped during mining operations. This approach ensures that the disturbed areas are stabilized and prepared for future agricultural use or natural vegetation, while	Topsoil must be managed in accordance with the: • CARA, 1983 • NEM:BA, 2004 • MPRDA, 2008	Throughout the site establishment-, operational, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			adhering to the limited soil resources available on-site. Therefore, any available topsoil should be managed as follows if practically possible: • Topsoil is a valuable and essential resource for rehabilitation, and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes. • Topsoil stripping, stockpiling and re-spreading must be done in a systematic way. The mining plan must be such that topsoil is stockpiled for the minimum possible time. • The topsoil must be placed on a levelled area, within the mining footprint. No topsoil may be stockpiled in undisturbed and inactive areas. • Topsoil heaps may not exceed 1.5 m to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. • The temporary topsoil stockpiles must be kept free of invasive plant species. • Storm- and runoff water must be diverted around the mining area to prevent erosion. • The stockpiled topsoil must be evenly spread, over the rehabilitated area upon closure of the site. • The permit holder must strive to re-instate topsoil to its previous natural state and at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.		
• Site establishment. • Screening, stockpile, and transporting material from site. • Sloping and landscaping upon closure of the mining area.	Site Establishment-, Operational- and Decommissioning phase	±1 ha	**<u>Management of Invader Plant Species:</u>** • An invasive plant species management plan (Appendix I) must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the mining activities. • All stockpiles (topsoil) must be kept free of invasive plant species. • Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used: ▪ The plants can be uprooted, felled or cut off and can be destroyed completely. ▪ The plants can be treated chemically by a registered pest control officer (PCO) through the use of an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.	Invader plants must be managed in accordance with the: • CARA, 1983 • NEM:BA 2004 • Invasive Plant Species Management Plan (Appendix I)	Throughout the site establishment-, operational, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
• Site establishment. • Mining of silty sand and quartzitic sandstone pebbles	Site Establishment- and Operational phase	5 ha	**<u>Protection of fauna</u>** • Site access should be controlled, and no unauthorised persons should be allowed onto the site. • Any fauna directly threatened by the associated activities should be removed to a safe location by a site manager. • The collection/trapping, hunting, or poisoning of any animals at the site is strictly forbidden. Signs must be put up to enforce this. Personnel should not be allowed to wander off demarcated areas. • Fires must not be allowed on site. • All hazardous materials should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel, and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. • All construction and maintenance motor vehicle operators should undergo an environmental induction that includes instruction on the need to comply with speed limits, to respect all forms of wildlife. All vehicles should adhere to a low-speed limit (40 km/h) to avoid collisions with susceptible species. • Construction vehicles must be limited to a minimal footprint on site (no movement outside of the earmarked footprint). • All personnel must undergo environmental induction regarding fauna management and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. Workers must be instructed to	Fauna must be managed in accordance with the: • NEM:BA 2004	Throughout the site establishment-, and operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			report any animals that may be trapped in the working area. • Schedule activities and operations during least sensitive periods, to avoid migration, nesting, and breeding seasons. • Ensure that cables and connections are insulated successfully to reduce electrocution risk. • Use environmentally friendly chemical products. • No litter, food or other foreign material may be thrown or left around the site.		
• Site establishment and infrastructure development. • Excavation, loading and hauling to the processing plant.	Site Establishment, & Operational Phase.	5 ha	**Archaeological, Heritage and Palaeontological Aspects:** • All mining must be confined to the development footprint area. • If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. • It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. • The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify the HWC.	Cultural/heritage aspects on site must be managed in accordance with the: NHRA, 1999	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			Work may only continue once the go-ahead was issued by SAHRA.		
• Stripping and stockpiling of topsoil and/or overburden. • Excavation, loading and hauling to the processing plant. • Processing, stockpiling and transporting of material.	Site Establishment-, Operational Phase	±1 ha	**Fugitive Dust Emission Mitigation:** • The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). • The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. • Speed on the haul roads must be limited to 20 km/h and 40 km/h on the access road to prevent the generation of excess dust. • Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to mining. • The crusher plant must have operational water sprayers to alleviate dust generation from the transfer points. • Fines, blowing from the drop end of the crusher plant, can be minimized by attaching strips of used conveyor belts to the conveyor's end. • Compacted dust must weekly be removed from the crusher plant to eliminate the dust source. • Loads must be flattened to prevent spillage during transportation on public roads.	Dust generation must be managed in accordance with the: • NEM: AQA. 2004 Regulation 6(1) • National Dust Control Regulations, GN No R827 • ASTM D1739 (SANS 1137:2012)	Throughout the site establishment-, operational, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts. • All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM: AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012). • Best practice measures shall be implemented during the stripping of topsoil, excavation, and transporting of material from site to minimize potential dust impacts.		
• Site establishment. • Mining of silty sand and quartzitic sandstone pebbels • Crushing, screening, stockpiling and transporting material from site. • Sloping and landscaping upon closure of the mining area.	Site Establishment-, Operational-, and Decommissioning Phase	5 ha	**Noise Handling:** • The permit holder must ensure that employees and staff conduct themselves in an acceptable manner while on site. • No loud music may be permitted at the mining area. • All mining vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996). • Best practice measures shall be implemented in order to minimize potential noise impacts. • A qualified occupational hygienist must be contracted to quarterly monitor and report on the personal noise exposure of the employees working at the mine. The monitoring must be done in accordance with the SANS 10083:2004 (Edition 5) sampling method as well as NEM: AQA, 2004, SANS 10103:2008.	Noise generation must be managed in accordance with the: • NEM: AQA. 2004 Regulation 6(1) • NRTA, 1996	Throughout the site establishment-, operational-, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
• Stripping and stockpiling of topsoil and/or overburden. • Excavation, loading and hauling to the processing plant. • Processing, stockpiling and transporting of material. • Sloping and landscaping during rehabilitation phase.	Site Establishment-, Operational-, and Decommissioning Phase	5 ha	**Waste Management:** • Regular vehicle maintenance, repairs and services may only take place in a demarcated service area of the permit holder. If emergency repairs are needed on equipment not able to move to the workshop / service area, drip trays must be present. All waste products must be disposed of in a 200-litre closed container/bin to be removed from the emergency service area to the workshop in order to ensure proper disposal. • Ablution facilities must be provided in the form of chemical toilets. The chemical toilets must be placed outside the 1:100-year floodline of any open water resource and must be serviced at least once every two weeks for the duration of the mining activities. • The use of any temporary, chemical toilet facilities may not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the permit holder. • If a diesel bowser is used on site, it must be equipped with a drip tray at all times. Drip trays must be used during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling. • Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site. • A spill kit must be available on-site which can be operated by trained employees for the ad	Mining related waste must be managed in accordance with the: • NWA, 1998 • NEM: WA, 2008 • NEM: WA, 2008: National norms and standards for the storage of waste (GN 926) • NEMA, 1998 (Section 30)	Throughout the site establishment-, operational-, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			hoc remediation of minor chemical and hydrocarbon spillages. • Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. • Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. Proof must be filed. • A waste management plan must be compiled by site management and implemented on site. The plan must focus on the waste hierarchy of the NEM: WA. • General waste must be contained in marked, sealable, refuse bins placed at a designated area, to be removed when filled to a recognised general waste landfill site. • No waste may be buried or burned on the site. • No chemicals or hazardous materials may be stored at the mining area. • It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities is reported to the Department of Water and Sanitation and other relevant authorities.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
• Stripping and stockpiling of topsoil and overburden. • Excavation, loading and hauling to the processing plant. • Sloping and landscaping during rehabilitation.	Operational Phase	5 ha	**<u>Erosion Control and Storm Water Management:</u>** • Clearing of vegetation must be limited to the proposed mining footprint and associated infrastructure. No clearing outside of the minimum required footprint to take place. • Stormwater must be diverted around the stockpiles and mining areas to prevent erosion. • Stockpiles must be protected from erosion, stored on flat areas where possible, and be surrounded by appropriate berms. • When mining within steep slopes, it must be ensured that adequate slope protection is provided. • During mining, the outflow of run-off water from the mining excavation must be controlled to prevent down-slope erosion. This must be done by way of the construction of temporary banks and ditches that will direct run-off water (if needed). These must be in place at any points where overflow out of the excavation might occur. • Roads and other disturbed areas within the project area must be regularly monitored for erosion and problem areas must receive follow-up monitoring to assess the success of the remediation. • Any erosion problems within the mining area because of the mining activities observed must be rectified immediately (within 48 hours) and monitored thereafter to ensure that it does not re-occur. • Mining must be conducted only in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control	Storm water must be managed in accordance with the: • CARA, 1983 • NEMA, 1998 • NWA, 1998	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			and waste management, developed by the Department of Water and Sanitation (DWS), and any other conditions which that Department may impose: ▪ Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. You must prevent clean water from running or spilling into dirty water systems. ▪ Dirty water must be collected and contained in a system separate from the clean water system. ▪ Dirty water must be prevented from spilling or seeping into clean water systems. ▪ A storm water management plan must apply for the entire life cycle of the mining activity and over different hydrological cycles (rainfall patterns). ▪ The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into a storm water management plan. Polluting activities including storage of mining fleet, equipment wash down facilities and vehicle maintenance yards must be restricted to the workshop areas and must be undertaken on impermeable hard standing surfaces, which are formally drained to a dirty water drainage system at the site. ▪ All fuels and chemicals stored or used on site must be contained within fit for purpose containers and stored within designated storage areas. In order to prevent pollution of the surrounding		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			environment during an accidental spillage, the designated storage areas must be situated on an impermeable surface and must feature a perimeter bund and a drainage sump. The volume of the bund and sump must be sized to contain at least 110% of the total volume of the fuel and chemicals being stored within the designated storage area. The storage areas must feature a roof to prevent inflow of rainwater, which would require the sump to be emptied more frequently.		
• Crushing, screening, stockpiling and transporting material from site.	Operational Phase	±1 ha	**Access Road Mitigation:** • Storm water must be diverted around the access road to prevent erosion. • Vehicular movement must be restricted to the existing access road to prevent crisscrossing of tracks through undisturbed and inactive areas. • Rutting and erosion of the access road caused as a direct result of the mining activities must be repaired by the permit holder. • Overloading of the truck must be prevented, and proof of load weights must be filed for auditing purposes.	The access road must be managed in accordance with the: • NRTA, 1996	Throughout the operational phase.
• Excavation, loading and hauling to the processing plant. • Sloping and landscaping during rehabilitation phase.	Site Establishment-, Operational-, and Decommissioning phase	5 ha	**Management of health and safety risks:** • Workers must have access to the correct personal protection equipment (PPE) as required by law. • Sanitary facilities must be located within 100 m from any point of work. • All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996)	Health and safety aspects must be managed in accordance with the: • MHSA, 1996 • OHSA, 1993 • OHSAS, 18001	Throughout the site establishment-, operational and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
• Site establishment and infrastructure development.	Site Establishment, & Operational Phase.	±500 m²	**Storage/Handling of Hazardous Substances/Chemicals:** • Chemical storage areas must be placed on level ground to prevent offsite migration of any spilled product. • The floor of the storage area must be impermeable to prevent seepage of spilled products into the ground or ground water. • Access to the chemicals/substances must be controlled and require prior notification of an appropriate staff member. • A Hazardous Substances Register must be maintained, and Safety Data Sheets (SDS) must be kept current for all chemicals used on site. • Any fuel/used oil tanks must have secondary containment in the form of an impermeable bund wall and base within which the tanks sit, raised above the floor, on plinths. The bund capacity must be sufficient to contain 110% of the tank's maximum capacity. The distance and height of the bund wall relative to that of the tank must also be taken into consideration to ensure that any spillage does not result in hydrocarbons/other substances spouting beyond the confines of the bund. • The site manager must establish a formal inspection routine to check all equipment in the bund area, as well as the bund area itself for malfunctions or leakages. The bund area must be inspected at least weekly and any accumulated rainwater removed and handled as contaminated water. All valves and outlets must be checked to ensure that its intact and closed securely.	Chemicals/hazardous substances must be stored in accordance with the: • HSA,1973 • NWA, 1998 • NEM: WA, 2008	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• The bund base must slope towards an oil sump of sufficient size. Contaminated water may not be allowed to mix with clean water and must be contained until it is collected by a registered hazardous waste handling contractor or disposed of at a registered hazardous waste handling facility. • Drip trays must be used underneath all stationary equipment or vehicles. Used drip trays must be placed within a bunded area and are not stored on bare soil. The wastewater originating from the cleaning of drip trays must be discarded into the oil sump.		
• Sloping and landscaping during rehabilitation phase.	Decommissioning Phase	5 ha	**<u>Rehabilitation/landscaping of mining area:</u>** Rehabilitation of the proposed mining site will prioritize stabilizing and preparing disturbed areas for potential agricultural use or natural regrowth, considering the minimal topsoil available. Key elements of this plan are as follows: • Rehabilitation Process: The operation will proceed in staged sections of approximately 1–1.5 hectares, with each section undergoing rehabilitation immediately after completion of mining activities in that area. Earthmoving equipment will handle in-situ material during operations, ensuring that disturbed areas are minimized. Given the rocky, low-topsoil nature of the site, topsoil recovery will be limited to stripping whatever minimal soil can be recovered from the rocky terrain. This soil will be stockpiled temporarily for later redistribution. • Topsoil Redistribution: Although the site lacks substantial topsoil, any minimal amount of soil material recovered will	Rehabilitation of the mining area must be in accordance with the: ❖ CARA, 1983 ❖ NEM:BA, 2004 ❖ MPRDA, 2002 Closure Plan (Appendix L)	Throughout the decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			be returned to its original depth after profiling the excavated areas with acceptable contours and erosion control measures. This redistribution will help stabilize the soil, reduce erosion, and foster natural regrowth or future agricultural use. • Erosion Control and Profiling: Excavated areas will be contoured and graded to prevent erosion and promote natural water flow. These erosion control measures will also help prevent sediment runoff into nearby areas and support the overall stability of the rehabilitated sections. • Waste Management: No waste material will be allowed to be deposited within the excavated areas. This will help maintain the integrity of the rehabilitated landscape and prevent any contamination that could hinder vegetation growth or future agricultural use. • Future Land Use Preparation: This rehabilitation approach is tailored to prepare the land for either future agricultural use or natural regrowth, aligning with the site's existing land use and minimal soil resources. By focusing on stabilization and basic soil restoration, the site will be left in a condition that allows for flexible land use options post-rehabilitation. • This staged approach will ensure that each section is rehabilitated to acceptable standards before moving on to the next, facilitating a controlled, orderly rehabilitation process with ongoing oversight and soil management as required.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• Rehabilitation of plant, office, and service areas: • Stockpiles must be removed during the decommissioning phase, the area ripped, and the topsoil (available soil as described above) returned to its original depth to provide a growth medium. • On completion of operations, all structures or objects shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). • On completion of mining operations, the surface of all plant-, stockpiling-, and/or office areas, if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 200mm and graded to an even surface condition. Where applicable/possible topsoil needs to be returned to its original depth over the area.		

e) Impact Management Outcomes

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

Table 26: Impact Management Outcomes

ACTIVITY whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc..etc.)	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure))	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc..) E.g. • Modify through alternative method. • Control through noise control • Control through management and monitoring Remedy through rehabilitation.	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
• Demarcation of site with visible beacons.	• No impact could be identified other than the beacons being outside the boundaries of the approved mining area.	N/A	Site Establishment phase	Control through management and monitoring.	Mining of silty sand and quartzitic sandstone pebbles is only allowed within the boundaries of the approved area. • MPRDA, 2008 • NEMA, 1998
• Site establishment and infrastructure development. • Stripping and stockpiling of topsoil and overburden.	• Visual intrusion as a result of site establishment.	The visual impact may affect the aesthetics of the landscape.	Site Establishment & Operational Phase	<u>Control:</u> Implementing proper housekeeping.	Management of the mining area must be in accordance with the: • MPRDA, 2008 • NEMA, 1998
• Site establishment and infrastructure development**.**	• Loss of agricultural land for duration of mining.	The impact may affect the agricultural opportunities of the property.	Site Establishment & Operational Phase	Should the proposed project be approved, the operation will temporarily interrupt the agricultural activities of the footprint area, only to be reversed upon the closure of the mine. The impact could be controlled through progressive rehabilitation.	Use of agricultural land must be managed in accordance with the: • CARA, 1983 Closure Plan (Appendix L)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
• Stripping and stockpiling of topsoil and overburden. • Excavation, loading and hauling to the processing plant. • Sloping and landscaping during rehabilitation. • Construction of site access road	• Loss of stockpiled topsoil during mining and stockpiling. • Potential erosion of denuded areas. • Facilitation of erosion due to mining activities. • Erosion of returned topsoil after rehabilitation.	Loss of topsoil will affect the rehabilitation success upon closure of the mine.	Site Establishment-, Operational and Decommissioning Phase	Control & Remedy: Proper housekeeping and storm water management.	Topsoil must be managed in accordance with the: • CARA, 1983 • NEM:BA, 2004 • MPRDA, 2008
• Site establishment • Screening, stockpile, and transporting material from site. • Sloping and landscaping upon closure of the mining area.	• Infestation of denuded areas with invader plant species • Infestation of the reinstated area with invader plant species.	This will impact on the biodiversity of the receiving environment.	Site Establishment-, Operational- and Decommissioning phase	Control: Implementing soil- and storm water management.	Invader plants must be managed in accordance with the: • CARA, 1983 • NEM:BA 2004 • Invasive Plant Species Management Plan (Appendix I)
• Site establishment and infrastructure development. • Stripping and stockpiling of topsoil and overburden.	• Potential impact on fauna within the footprint area.	This will impact on the biodiversity of the receiving environment.	Site Establishment- and Operational phase	Control & Stop: Implementing good management practices.	Fauna must be managed in accordance with the: • NEM:BA 2004 Any water related matters must be managed in accordance with the: • NWA, 1998 • WUL conditions
• Stripping and stockpiling of topsoil and/or overburden. • Construction of site access road	• Dust nuisance as a result of the mining activities.	Increased dust generation will impact on the air quality of the	Site Establishment- and Operational Phase	Control: Dust suppression methods and proper housekeeping.	Dust generation must be managed in accordance with the: • NEM: AQA. 2004 Regulation 6(1) • National Dust Control Regulations, GN No R827

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
• Excavation, loading and hauling to the processing plant. • Processing, stockpiling and transporting of material.	• Dust nuisance as a result of the mining activities.	receiving environment.			• ASTM D1739 (SANS 1137:2012)
• Stripping and stockpiling of topsoil and/or overburden. • Construction of site access road • Excavation, loading and hauling to the processing plant. • Processing, stockpiling and transporting of material.	• Noise nuisance generated by earthmoving machinery. • Noise nuisance as a result of the mining activities. • Noise nuisance stemming from operation of the processing plant.	Should noise levels become excessive it may have an impact on the noise ambiance of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	<u>Control:</u> Noise suppression methods and proper housekeeping.	Noise generation on site must be managed in accordance with the: • NEM: AQA, 2004 Regulation 6(1) • NRTA, 1996
• Mining of silty sand and quartzitic sandstone pebbels . • Screening, stockpile, and transporting material from site. • Sloping and landscaping upon closure of the mining area.	• Soil contamination from hydrocarbon spills. • Potential impact assocaited with littering and hydrocarbon spills. • Potential impact associated with litter left at the mining area.	Contamination of the footprint area will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to the permit holder.	Site Establishment-, Operational-, and Decommissioning Phase	<u>Control & Remedy:</u> Proper housekeeping and implementation of an emergency response plan and waste management plan.	Mining related waste must be managed in accordance with the: • NWA, 1998 • NEM: WA, 2008 • NEM: WA, 2008: National norms and standards for the storage of waste (GN 926) • NEMA, 1998 (Section 30)
• Site establishment and infrastructure development.	• Potential impact on area/infrastructure of heritage or cultural concern.	This could impact on the cultural and heritage legacy of	Operational Phase	<u>Control & Stop:</u> Implementing good management practices, as well as the chance-find protocol.	Cultural/heritage aspects must be managed in accordance with the: • NHRA, 1999

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
• Excavation, loading and hauling to the processing plant.		the receiving environment.			
• Construction of site access road • Screening, stockpile, and transporting material from site.	• Deterioration of the access road to the mining area.	Collapse of the road infrastructure will affect the landowner.	Operational Phase	Control & Remedy: Maintaining the access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to mining.	The access road must be managed in accordance with the: • NRTA, 1996
• Excavation, loading and hauling to the processing plant. • Sloping and landscaping during rehabilitation phase.	• Unsafe working environment for employees. • Safety risk posed by un-sloped areas.	An unsafe working environment affects the labour force, as well as pose a threat to animals and humans that may enter the mining footprint.	Operational-, and Decommissioning Phase	Stop & Control: Adherance to the rules and regulations, demarcation of the mining area and proper housekeeping.	Health and safety aspects on site must be managed in accordance with the: • MHSA, 1996 • OHSA, 1993 • OHSAS 18001 USBM standards
• Screening, stockpile, and transporting material from site.	• Overloading of trucks having an impact on the public roads.	Overloading will negatively affect the roads in the vicinity of the mining area.	Operational Phase	Control: Proper site management.	Load weights must be managed in accordance with the: • NRTA, 1996

f) Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes in paragraph (c) and (d) will be achieved)

Table 27: Impact Management Actions

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc..etc.)	(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc... etc.) E.g. • Modify through alternative method. • Control through noise control • Control through management and monitoring Remedy through rehabilitation.	Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either: Upon cessation of the individual activity Or. Upon the cessation of mining bulk sampling or alluvial diamond prospecting as the case may be.	(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
• Demarcation of site with visible beacons.	• No impact could be identified other than the beacons being outside the boundaries of the approved mining area.	Demarcation of the site will ensure that all employees are aware of the boundaries of the mining area, and that work stay within the approved area.	Beacons need to be in place throughout the life of the activity.	Mining of silty sand and quartzitic sandstone pebbles is only allowed within the boundaries of the approved area. • MPRDA, 2008 • NEMA, 1998
• Site establishment	• Visual intrusion as a result of site establishment.	**<u>Visual Mitigation</u>** • Mining must be contained to the boundaries of the permitted area. • The site must have a neat appearance and be always kept in good condition.	Throughout the site establishment-, and operational phase.	Management of the mining area must be in accordance with the: • MPRDA, 2008 • NEMA, 1998

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• The permit holder must limit vegetation removal (if applicable), and stripping of topsoil may only be done immediately prior to the use of a specific area. • Upon closure the mining area must be rehabilitated and levelled to remove the visual impact on the aesthetic value of the area. **<u>Management of vegetation removal</u>** • The mining boundaries must be clearly demarcated, and all operations must be contained to the approved mining area. The area outside the mining boundaries must be declared a no-go area, and all staff must be educated accordingly. • Blanket clearing of vegetation must be limited to the proposed footprint and associated infrastructure. No clearing outside of the minimum required footprint to take place. • Clearing of vegetation should be minimized and avoided where possible. • Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further. • The appointed ECO must provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment, especially during the site establishment phase, when the majority of vegetation clearing is taking place. • All vehicles must remain on demarcated roads and no unnecessary driving in the veld outside these areas may be allowed.		

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• No plant species, whether native or exotic, should be brought into, ore removed from, the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants. • No plants may be translocated or otherwise uprooted or disturbed for rehabilitation or other purposes without express permission from the ECO and without the relevant permits. • No fires must be allowed on-site.		
• Site establishment • Crushing, screening, stockpiling and transporting material from site. • Sloping and landscaping upon closure of the mining area. • Construction of site access road	• Loss of topsoil and fertility during mining and stockpiling • Loss of stockpiled material due to ineffective storm water control. • Erosion of returned topsoil after rehabilitation	**<u>Topsoil Management:</u>** The proposed mining site lacks significant topsoil, as it is characterized by a rocky terrain previously under cultivation for wheat. Due to the minimal natural topsoil layer, any rehabilitation efforts will not involve extensive topsoil replacement. Instead, rehabilitation will focus on redistributing whatever minimal soil material can be stripped during mining operations. This approach ensures that the disturbed areas are stabilized and prepared for future agricultural use or natural vegetation, while adhering to the limited soil resources available on-site. Therefore, any available topsoil should be managed as follows if practically possible. • Topsoil is a valuable and essential resource for rehabilitation, and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes. • Topsoil stripping, stockpiling and re-spreading must be done in a systematic way. The mining plan must be such that topsoil is stockpiled for the minimum possible time.	Throughout the site establishment-, operational, and decommissioning phase.	Topsoil must be managed in accordance with the: • CARA, 1983 • NEM:BA, 2004 • MPRDA, 2008

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		▪ The topsoil must be placed on a levelled area, within the mining footprint. No topsoil may be stockpiled in undisturbed and inactive areas. ▪ Topsoil heaps may not exceed 1.5 m to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. ▪ The temporary topsoil stockpiles must be kept free of invasive plant species. ▪ Storm- and runoff water must be diverted around the mining area to prevent erosion. ▪ The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site. ▪ The permit holder must strive to re-instate topsoil to its previous natural state at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal. ▪ The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement. ▪ Control: Implementing the WUL conditions and specifications.		
▪ Site establishment	▪ Infestation of denuded areas with invader plant species	**<u>Management of Invader Plant Species:</u>** ▪ An invasive plant species management plan (Appendix I) must be implemented at the site to ensure the management and control of all	Throughout the site establishment-, operational, and decommissioning phase.	Invader plants must be managed in accordance with the: ▪ CARA, 1983 ▪ NEM:BA 2004

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
• Screening, stockpile, and transporting material from site. • Sloping and landscaping upon closure of the mining area. • Construction of site access road	• Infestation of the reinstated area with invader plant species.	species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the mining activities. • All stockpiles (topsoil) must be kept free of invasive plant species. • Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used: ▪ The plants can be uprooted, felled or cut off and can be destroyed completely. ▪ The plants can be treated chemically by a registered pest control officer (PCO) using an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.		• Invasive Plant Species Management Plan (Appendix I)
• Site establishment. • Mining of silty sand and quartzitic sandstone pebbles.	• Potential impact on fauna within the footprint area.	**<u>Protection of Fauna:</u>** • The site manager must ensure no fauna is caught, killed, harmed, sold or played with. • Workers must be instructed to report any animals that may be trapped in the working area. • No snares may be set or nests raided for eggs or young.	Throughout the site establishment-, and operational phase.	Fauna must be managed in accordance with the: • NEM:BA 2004
• Site establishment	• Dust nuisance as a result of the mining activities.	**<u>Fugitive Dust Emission Mitigation:</u>** • The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, straw, water	Throughout the site establishment-, operational, and decommissioning phase.	Dust generation must be managed in accordance with the: • NEM: AQA. 2004 Regulation 6(1)

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
• Screening, stockpile, and transporting material from site. • Construction of site access road	• Dust nuisance as a result of the mining activities.	spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). • The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. • Speed on the access road must be limited to 40 km/h to prevent the generation of excess dust. • Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to mining. • Loads must be flattened and covered to ensure that minimal spillage of material takes place during transportation, also preventing windblown dust. • Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts. • All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM: AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012). • Best practice measures shall be implemented during the stripping of topsoil, loading, and transporting of the silty sand and quartzitic sandstone pebbles from site to minimize potential dust impacts.		• National Dust Control Regulations, GN No R827 • ASTM D1739 (SANS 1137:2012)
• Site establishment	• Noise nuisance as a result of the mining activities.	**<u>Noise Handling:</u>**	Throughout the site establishment-, operational-, and decommissioning phase.	Noise generation must be managed in accordance with the:

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
• Mining of silty sand and quartzitic sandstone pebbels • Screening, stockpile, and transporting material from site. • Sloping and landscaping upon closure of the mining area. • Construction of site access road	• Noise nuisance as a result of the decomissiononig activities.	• The permit holder must ensure that employees and staff conduct themselves in an acceptable manner while on site. • No loud music may be permitted at the mining area. • All mining vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996). • Best practice measures shall be implemented in order to minimize potential noise impacts. • A qualified occupational hygienist must be contracted to quarterly monitor and report on the personal noise exposure of the employees working at the mine. The monitoring must be done in accordance with the SANS 10083:2004 (Edition 5) sampling method as well as NEM: AQA, 2004, SANS 10103:2008.		• NEM: AQA. 2004 Regulation 6(1) • NRTA, 1996
• Mining of silty sand and quartzitic sandstone pebbels . • Screening, stockpile, and transporting material from site. • Sloping and landscaping upon closure of the mining area.	• Soil contamination from hydrocarbon spills. • Potential impact assocaited with littering and hydrocarbon spills. • Potential impact associated with litter left at the mining area.	**<u>Waste Management:</u>** • Regular vehicle maintenance, repairs and services may only take place in a demarcated service area of the permit holder. If emergency repairs are needed on equipment not able to move to the workshop / service area, drip trays must be present. All waste products must be disposed of in a 200-litre closed container/bin to be removed from the emergency service area to the workshop in order to ensure proper disposal. • Ablution facilities must be provided in the form of a chemical toilets. The chemical toilets must be placed outside the 1:100-year floodline of any open water resource and must be serviced at least once every	Throughout the site establishment-, operational-, and decommissioning phase.	Mining related waste must be managed in accordance with the: • NWA, 1998 • NEM: WA, 2008 • NEM: WA, 2008: National norms and standards for the storage of waste (GN 926) • NEMA, 1998 (Section 30)

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		two weeks for the duration of the mining activities. • The use of any temporary, chemical toilet facilities may not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the permit holder. • If a diesel bowser is used on site, it must be equipped with a drip tray at all times. Drip trays must be used during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling. • Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site. • A spill kit must be available on-site which can be operated by trained employees for the ad hoc remediation of minor chemical and hydrocarbon spillages. • Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. • Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. Proof must be filed.		

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• A waste management plan must be compiled by site management and implemented on site. The plan must focus on the waste hierarchy of the NEM: WA. • General waste must be contained in marked, sealable, refuse bins placed at a designated area, to be removed when filled to capacity to a recognised general waste landfill site. • No waste may be buried or burned on the site. • No chemicals or hazardous materials may be stored at the mining area. • It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities is reported to the Department of Water and Sanitation and other relevant authorities.		
• Mining of silty sand and quartzitic sandstone pebbels	• Potential impact on area/infrastructure of heritage or cultural concern.	**Archaeological, Heritage and Palaeontological Aspects:** • All mining must be confined to the development footprint area. • If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.	Throughout the operational phase.	Cultural/heritage aspects must be managed in accordance with the: • NHRA, 1999

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. • The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify HWC. • Work may only continue once the go-ahead was issued by SAHRA.		
• Crushing, screening, stockpiling and transporting material from site. • Mining of silty sand and quartzitic sandstone pebbels • Construction of site access road.	• Loss of stockpiled material due to ineffective storm water control.	**<u>Storm Water Mitigation:</u>** • Storm water must be diverted around the topsoil heaps and mining area to prevent erosion. • Mining must be conducted only 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 Water and Sanitation (DWS), and any other conditions which that Department may impose: ▪ Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. You must prevent clean water from running or spilling into dirty water systems. ▪ Dirty water must be collected and contained in a system separate from the clean water system.	Throughout the operational phase.	Storm water must be managed in accordance with the: • CARA, 1983 • NEMA, 1998 • NWA, 1998

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		▪ Dirty water must be prevented from spilling or seeping into clean water systems.		
• Construction of site access road • Screening, stockpile, and transporting material from site.	• Deterioration of the access road to the mining area. • Overloading of trucks having an impact on the public roads.	**Access Road Mitigation:** • Storm water must be diverted around the access road to prevent erosion. • Vehicular movement must be restricted to the existing access road to prevent crisscrossing of tracks through undisturbed and inactive areas. • Rutting and erosion of the access road caused as a direct result of the mining activities must be repaired by the permit holder. • Overloading of the truck must be prevented, and proof of load weights must be filed for auditing purposes.	Throughout the operational phase.	The access road must be managed in accordance with the: • NRTA, 1996
• Site establishment. • Mining of silty sand and quartzitic sandstone pebbels. • Crushing, screening, stockpiling and transporting material from site. • Sloping and landscaping upon closure of the mining area.	• Potential health and safety risk to employees.	**Management of Health and Safety Risks:** • Adequate ablution facilities and water for human consumption must daily be available on site. • Workers must have access to the correct personal protection equipment (PPE) as required by law. • All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).	Throughout the site establishment-, operational and decommissioning phase.	Health and safety aspects must be managed in accordance with the: • MHSA, 1996 • OHSA, 1993 • OHSAS, 18001

i) Financial Provision

(1) Determination of the amount of Financial Provision.

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

The decommissioning phase will entail the reinstatement of the processing area by removing the mining machinery from the site. Removal of the crushing and screening plant, containers and chemical toilets from the mining area, removal/levelling of all stockpiled material and the landscaping of the mining area to allow the replacement of stockpiled topsoil.

The reinstated area will be vegetated, and invasive plant species will be controlled during a 12 months' aftercare period to address germination of problem plants in the area. The Applicant will comply with the minimum closure objectives as prescribed by DMRE.

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

This report, the Draft Basic Assessment Report, includes all the environmental objectives in relation to closure and will be made available for perusal by the landowner, registered I&AP's and stakeholders over a 30-days commenting period. Comments received during this period will be included in the FBAR.

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

The requested rehabilitation plan is attached as Appendix L.

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

The rehabilitation plan is confirmed as compatible with the closure objectives based on the following considerations and its alignment with the applicable legislation detailed in Appendix L:

Progressive Rehabilitation Ensures Compatibility

Rehabilitation is performed progressively in sections of 1 to 1.5 hectares, minimizing environmental disruption and allowing immediate stabilization of disturbed areas. This approach aligns with the closure objective of rendering the site safe and suitable for agricultural use, reducing the likelihood of long-term environmental degradation. Section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) requires phased rehabilitation to mitigate environmental harm during and after mining operations.

Landform Stabilization and Drainage

The plan involves contouring and sloping the land to ensure proper drainage and prevent water pooling. The adaptation of the access road as a drainage pathway facilitates natural water flow, crucial for long-term stability and agricultural potential. The DMRE’s minimum closure objectives mandate erosion control and land stabilization to ensure the site's safety and suitability for future use.

Topsoil Management

Despite limited topsoil, the plan emphasizes the redistribution of available soil to stabilize the land, promote vegetation, and reduce erosion. This effort ensures that the site can either support agriculture or revert to natural vegetation. Section 44 of the MPRDA, 2002 requires topsoil replacement and preparation of the area to support regrowth. The National Environmental Management: Biodiversity Act (NEM, 2004) regulations also emphasize soil preservation and invasive species control.

Restoration to Agricultural Potential

The plan aims to create a modest landscape feature, as restoring the site to its original topography is impractical. This approach supports its future use as low-potential agricultural land, aligning with the site's existing agricultural state and ensuring compatibility with closure objectives. The DMRE closure requirements focus on preparing land for post-mining use that aligns with its historical or intended future purpose.

Compliance with DMRE Standards

The plan meets the DMRE's minimum closure objectives, including removing stockpiles, equipment, and waste, along with restoring disturbed areas through landscaping, erosion control, and invasive species management. Section 43(4) of the MPRDA, 2002 and NEM (2004) mandate waste removal, invasive species control, and compliance with environmental rehabilitation standards.

Erosion and Invasive Species Control

The rehabilitation plan integrates erosion control through scarification and grading while monitoring and eradicating invasive species, particularly those categorized under NEM Regulations in terms of NEM (2004) requires the eradication of Category 1a and 1b invasive species, while the DMRE closure objectives emphasize maintaining ecological stability through erosion and invasive species management.

Final Rehabilitation

The plan includes final landscaping, levelling, removal of equipment, and waste disposal at recognized facilities. Compacted soil will be scarified, and vegetation will be reestablished where necessary using indigenous seed mixes. Monitoring will ensure vegetation regrowth aligns with closure goals as required in terms of Section 44 of the MPRDA, 2002 and Regulation 62 require comprehensive rehabilitation measures, including waste management and vegetation restoration.

The rehabilitation plan adheres to legislative requirements under the MPRDA, 2002 and NEM (2004) while fulfilling the DMRE's closure objectives. Its phased, environmentally conscious approach ensures the site's safety and agricultural potential, confirming its compatibility with the closure goals.

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

The calculation of the quantum for financial provision was according to Section B of the working manual.

Mine type and saleable mineral by-product

According to Tables B.12, B.13 and B.14

Mine type	Quartzite/Sandstone/Sand
Saleable mineral by-product	None

Risk ranking

According to Tables B.12, B.13 and B.14

Primary risk ranking (either Table B.12 or B.13)	C (Low risk).
Revised risk ranking (B.14)	N/A

Environmental sensitivity of the mine area

According to Table B.4

Environmental sensitivity of the mine area	Low

Level of information

According to Step 4.2:

Level of information available	Limited

Identify closure components.

According to Table B.5 and site-specific conditions

Component No.	Main description	Applicability of closure components (Circle Yes or No)	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	-	**NO**
2(A)	Demolition of steel buildings and structures	-	**NO**
2(B)	Demolition of reinforced concrete buildings and structures	-	**NO**
3	Rehabilitation of access roads	-	**NO**
4(A)	Demolition and rehabilitation of electrified railway lines	-	**NO**
4(B)	Demolition and rehabilitation of non-electrified railway lines	-	**NO**
5	Demolition of housing and facilities	-	**NO**
6	Opencast rehabilitation including final voids and ramps	**YES**	
7	Sealing of shafts, adits and inclines	-	**NO**

Component No.	Main description	Applicability of closure components (Circle Yes or No)	
8(A)	Rehabilitation of overburden and spoils	-	**NO**
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)	-	**NO**
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)	-	**NO**
9	Rehabilitation of subsided areas	-	**NO**
10	General surface rehabilitation, including grassing of all denuded areas	**YES**	-
11	River diversions	-	**NO**
12	Fencing	-	**NO**
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater)	-	**NO**
14	2 to 3 years of maintenance and aftercare	**YES**	

Unit rates for closure components

According to Table B.6 master rates and multiplication factors for applicable closure components.

Component No.	Main description	Master rate	Multiplication factor
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	-	-
2(A)	Demolition of steel buildings and structures	-	-
2(B)	Demolition of reinforced concrete buildings and structures	-	-
3	Rehabilitation of access roads	-	-
4(A)	Demolition and rehabilitation of electrified railway lines	-	-
4(B)	Demolition and rehabilitation of non-electrified railway lines	-	-
5	Demolition of housing and facilities	-	-
6	Opencast rehabilitation including final voids and ramps	319 431	0.04
7	Sealing of shafts, adits and inclines	-	-
8(A)	Rehabilitation of overburden and spoils	212 954	1.00
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)	-	-
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)	-	-
9	Rehabilitation of subsided areas	-	-
10	General surface rehabilitation, including grassing of all denuded areas	168 695	1.00
11	River diversions	-	-
12	Fencing	-	-
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater)	-	-
14	2 to 3 years of maintenance and aftercare	22 450	1.00

Determine weighting factors

According to Tables B.7 and B.8

Weighting factor 1: Nature of terrain/accessibility	1.1 (Undulating)
Weighting factor 2: Proximity to urban area where goods and services are to be supplied	1.05

Calculation of closure costs

Table B.10 Template for Level 2: "Rules-based" assessment of the quantum for financial provision

Table 28: Calculation of closure cost

CALCULATION OF THE QUANTUM							
Mine:	Power Construction (Pty) Ltd			**Location:**	Gouda		
Evaluators:	Sonette Smit			**Date:**	15 November 2024		
No	**Description**	**Unit**	**A Quantity**	**B Master rate**	**C Multiplication factor**	**D Weighting factor 1**	**E=A *B*C*D Amount (Rand)**
			Step 4.5	**Step 4.3**	**Step 4.3**	**Step 4.4**	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	m²	0	22	1.00	1.1	R 0,00
2(A)	Demolition of steel buildings and structures	m^2	0	305	1.00	1.1	R 0,00
2(B)	Demolition of reinforced concrete buildings and structures	m^2	0	449	1.00	1.1	R 0,00
3	Rehabilitation of access roads	m^2	0	55	1.00	1.1	R 0,00
4(A)	Demolition and rehabilitation of electrified railway lines	m	0	529	1.00	1.1	R 0,00
4(B)	Demolition and rehabilitations of non-electrified railway lines	m	0	289	1.00	1.1	R 0,00
5	Demolition of housing and/or administration facilities	m^2	0	609	1.00	1.1	R 0,00
6	Opencast rehabilitation including final voids and ramps	ha	1,5	319 431,00	0.04	1.1	R 19 165,86
7	Sealing of shaft, audits and inclines	m^3	0	164	1.00	1.1	R 0,00
8(A)	Rehabilitation of overburden and spoils	ha	0	212954	1.00	1.1	R 0,00
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	ha	0	265230	1.00	1.1	R 0,00
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	0	770354	0.51	1.1	R 0,00
9	Rehabilitation of subsided areas	ha	0	178317	1.00	1.1	R 0,00
10	General surface rehabilitation	ha	0,1	168695	1.00	1.1	R 21 295,40
11	River diversions	ha	0	168695	1.00	1.1	R 0,00

12	Fencing	m	0	192	1.00	1.1	R 0,00
13	Water Management	ha	0	64143	0.17	1.1	R 0,00
14	2 to 3 years of maintenance and aftercare	ha	1	22450	1.00	1.1	R 84 347,50
15(A)	Specialists study	Sum	0				R 0,00
15(B)	Specialists study	Sum	0				R 0,00
Sum of items 1 to 15 above							R 147 258,76
Multiply Sum of 1-15 by Weighting factor 2 (Step 4.4)			1,05			**Sub Total 1**	R 154 621,70

1	Preliminary and General	6% of Subtotal 1 if Subtotal 1 <R100 000 000.00	R 9 277,30
		12% of Subtotal 1 if Subtotal 1 >R100 000 000.00	-
2	Contingency	10.0% of Subtotal 1	R 15 462,17
		Sub Total 2 (Subtotal 1 plus management and contingency)	R 179 361,17
		Vat (15%)	R 26 904,18
		GRAND TOTAL (Subtotal 3 plus VAT)	**R 206 265,35**

The amount that will be necessary for the rehabilitation of damages caused by the operation, both sudden closures during the normal operation of the project and at final, planned closure gives a sum total of **R 206 265,35.**

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

Herewith I, the person, whose name is stated below confirm that I am the person authorised to act as representative of the Applicant in terms of the resolution submitted with the application. I herewith confirm that the company will provide the amount that will be determined by the Regional Manager in accordance with the prescribed guidelines.

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

g) Monitoring of Impact Management Actions

h) Monitoring and reporting frequency

i) Responsible persons

j) Time period for implementing impact management actions

k) Mechanisms for monitoring compliance

Table 29: Mechanisms for monitoring compliance with and performance assessment against the EMPR and reporting thereon.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
• Demarcation of site with visible beacons	Maintenance of beacons	• Visible beacons need to be placed at the corners of the mining area.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Ensure beacons are in place throughout the life of the mine.	Applicable throughout site establishment-, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.
• Site establishment	**Visual Characteristics:** • Visual intrusion as a result of site establishment.	• Minimize the visual impact of the activity on the surrounding environment through proper site management and implementing good housekeeping practices.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility:	Applicable throughout site establishment-, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			• Contain mining to the boundaries of the permitted area. • Ensure that the site have a neat appearance and is always kept in good condition. • Limit vegetation removal, and only strip topsoil immediately prior to the use of a specific area. • Rehabilitate and level the site upon closure to ensure that the visual impact on the aesthetic value of the area is kept to a minimum.	
• Site establishment • Crushing, screening, stockpiling and transporting material from site. • Sloping and landscaping upon closure of the mining area.	**Geology and Soil:** • Loss of topsoil and fertility during mining and stockpiling • Loss of stockpiled material due to ineffective storm water control. • Erosion of returned topsoil after rehabilitation .	• Earthmoving equipment to reinstate mined-out areas. • Erosion control infrastructure (if necessary)	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Strip and stockpile the available soil. • Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process. • Ensure topsoil stripping, stockpiling and re-spreading is done in a systematic way. Plan mining in such a way that topsoil is stockpiled for the minimum possible time. • Place topsoil heaps on a levelled area within the mining footprint area. Do not stockpile topsoil in undisturbed and inactive areas. • Protect topsoil stockpiles against losses by water and wind erosion. Position stockpiles so as not to be vulnerable to erosion by wind and water. Establishment of plants on the stockpiles will help prevent erosion. • Ensure that topsoil heaps do not exceed 1.5 m in order to preserve micro-organisms within the	Applicable throughout site establishment-, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			topsoil, which can be lost due to compaction and lack of oxygen. • Keep temporary stockpiles free of invasive plant species. • Divert storm- and runoff water around the mining area to prevent erosion. • Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season. • Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.	
• Site establishment • Screening, stockpile, and transporting material from site. • Sloping and landscaping upon closure of the mining area.	**Groundcover:** • Infestateion of denuded areas with invader plant species. • Infestation of the reinstated area with invader plant species.	• Designated team to cut or pull-out invasive plant species that germinated on site. • Herbicide application equipment.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Implement an invasive plant species management plan to control all invasive plant species on site in terms of NEM:BA, 2004 and CARA, 1983. • Keep all stockpiles (topsoil) free of invasive plant species. • Control declared invader or exotic species on the rehabilitated areas.	Applicable throughout site establishment-, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.
• Site establishment.	**Fauna:**	• Toolbox talks to educate employees how to handle fauna that enter the work areas.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.	Applicable throughout site establishment-, and operational phases. • Daily compliance monitoring by site management.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
• Mining of silty sand and quartzitic sandstone pebbles.	• Potential impact on fauna within the footprint area. • Disturbance to fauna within the footprint area.		• Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Ensure no fauna is caught, killed, harmed, sold or played with. • Instruct workers to report any animals that may be trapped in the working area. • Ensure no snares are set or nests raided for eggs or young.	• Annual compliance monitoring of site by an Environmental Control Officer.
• Site establishment • Screening, stockpile, and transporting material from site.	**Air Quality:** • Dust nuisance as a result of the mining activities.	• Dust suppression equipment such as a water car. • Signage that clearly reduce the speed on the access roads.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Control the liberation of dust into the surrounding environment by the use of; inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). • Ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. • Limit speed on the haul roads to 40 km/h to prevent the generation of excess dust. • Minimise areas devoid of vegetation. • Flatten and cover loads to prevent spillage and windblown dust during transportation. • Take weather conditions into consideration upon commencement of daily operations. Limit operations during very windy periods to reduce airborne dust and resulting impacts.	Applicable throughout site establishment-, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			• Ensure dust generating activities comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM: AQA, 2004 and ASTM D1739 (SANS 1137:2012). • Implement best practice measures during the stripping of topsoil, loading, and transporting of material from site to minimize potential dust impacts.	
• Site establishment • Mining of silty sand and quartzitic sandstone pebbels • Screening, stockpile, and transporting material from site. • Sloping and landscaping upon closure of the mining area.	**Noise Ambiance:** • Noise nuisance as a result of the mining activities. • Noise nuisance as a result of the decomissiononig activities.	• Silencers fitted to all project related vehicles, and the use of vehicles that are in road worthy condition in terms of the National Road Traffic Act, 1996.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Ensure that employees and staff conduct themselves in an acceptable manner while on site. • No loud music may be permitted at the mining area. • Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996. • Implement best practice measures to minimise potential noise impacts. • Contract a qualified occupational hygienist to quarterly monitor and report on the personal noise exposure of the employees working at the mine. Monitoring must be in accordance with SANS 10083:2004 (Edition 5) sampling method as well as NEM: AQA 2004, SANS 10103:2008.	Applicable throughout site establishment-, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
• Mining of silty sand and quartzitic sandstone pebbels • Screening, stockpile, and transporting material from site. • Sloping and landscaping upon closure of the mining area.	**Waste Management:** • Soil contamination from hydrocarbon spills. • Potential impact assocaited with littering and hydrocarbon spills. • Potential impact associated with litter left at the mining area.	• Oil spill kit. • Sealed drip trays. • Formal waste disposal system with waste registers.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Ensure regular vehicle maintenance, repairs and services take place in a demarcated service area of the permit holder. If emergency repairs are needed on equipment not able to move to the workshop / service area, drip trays must be present. All waste products must be disposed of in a 200-litre closed container/bin to be removed from the emergency service area to the workshop in order to ensure proper disposal. • Provide ablution facilities in the form of a chemical toilets that are placed outside the 1:100-year floodline of any open water resource. Ensure the toilets are serviced at least once every two weeks for the duration of the mining activities. • Ensure that the use of any temporary, chemical toilet facilities does not cause any pollution to water sources or pose a health hazard. In addition, ensure that no form of secondary pollution arise from the disposal of refuse or sewage from the temporary, chemical toilets. Address any pollution problems arising from the above immediately. • Equip the diesel bowser with a drip tray if used on site. The nozzle of the bowser must rest in a sleeve to prevent dripping after refuelling. • Clean drip trays after use. Do not use dirty drip trays.	Applicable throughout site establishment-, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			• Keep a spill kit on 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. • Collect the contaminated soil from spillage that occurred, such as oil or diesel leaking from a burst pipe, within the first hour of occurrence, in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. File proof. • Compile a waste management plan and implement it on site. The plan must focus on the waste hierarchy of the NEM: WA. • Contain general waste in marked, sealable, refuse bins placed at a designated area and remove waste from the mining area to a recognised general waste landfill site. • Prevent the burning or burying of waste on site. • Report any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities to the Department of Water and Sanitation and other relevant authorities. • Park the machinery at the mining area with drip trays placed underneath stationary vehicles.	
• Mining of silty sand and quartzitic sandstone pebbels	• Potential impact on areas/infrastructure of heritage or cultural concern.	• Contact number of an archaeologist that can be contacted when a discovery is made on site.	<u>Role:</u> • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Responsibility:</u> • Confine all mining to the development footprint area.	Applicable throughout site establishment-, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			• Implement the following change find procedure when discoveries are made on site: ▪ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. ▪ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. ▪ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify SAHRA. ▪ Work may only continue once the go-ahead was issued by SAHRA.	
• Crushing, screening, stockpiling and transporting material from site. • Mining of silty sand and quartzitic sandstone pebbels .	**<u>Hydrology:</u>** • Storm water management	• Storm water management structures such as berms to direct storm- and runoff water around the stockpiled topsoil area (when needed). • Water use licence issued by the DWS.	<u>Role:</u> • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. • Adhere to the specifications of the water use licence for the duration of the mining operation. <u>Responsibility:</u> • Divert storm water around stockpiles to prevent erosion.	Applicable throughout site establishment-, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			• Conduct activity in terms of the Best Practice Guidelines for small-scale mining as developed by DWS.	
• Screening, stockpile, and transporting material from site.	**Existing Infrastructure:** • Deterioration of the access road to the mining area. • Overloading of trucks having an impact on the public roads.	• Grader to restore the road surface when needed.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Divert storm water around the access road to prevent erosion. • Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed and inactive areas. • Repair rutting and erosion of the access road caused as a direct result of the mining activities. • Prevent the overloading of the truck, and file proof of load weights for auditing purposes.	Applicable throughout operational phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.
• Site establishment. • Mining of silty sand and quartzitic sandstone pebbels . • Crushing, screening, stockpiling and transporting material from site. • Sloping and landscaping upon	• Potential health and safety risks to employees.	• Stocked first aid box. • Level 1 certified first aider. • All appointments in terms of the Mine Health and Safety Act, 1996.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Ensure adequate ablution facilities and water for human consumption is daily available on site. • Ensure that workers have access to the correct PPE as required by law.	Applicable throughout operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
closure of the mining area.			• Manage all operations in compliance with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).	

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

The Environmental Audit Report in accordance with Appendix 7 as prescribed in Regulation 34 of the EIA Regulations, 2014 (as amended) will annually be submitted to DMRE for compliance monitoring purposes or in accordance with the time period stipulated by the Environmental Authorisation.

m) Environmental Awareness Plan

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

Once the Applicant received the mining permit and may commence with the proposed activity, a copy of the Environmental Management Programme will be handed to the site manager for his perusal. Issues such as the mining boundaries, fire principals and waste handling will be discussed.

An induction meeting will be held with all the site workers to inform them of the Basic Rules of Conduct regarding the environment.

ii) Manner in which risk will be dealt with in order to avoid pollution or the degradation of the environment.

The operations manager must ensure that he/she understands the EMPR document and its requirement and commitments before any mining takes place. An Environmental Control Officer needs to check compliance of the mining activity to the management programmes described in the EMPR.

The following list represents the basic steps towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks.

- **Site Management:**
  - Stay within boundaries of site – do not enter adjacent properties.
  - Keep tools and material properly stored.
  - Smoke only in designated areas.
  - Use toilets provided – report full or leaking toilets.

- **Water Management and Erosion:**
  - Check that rainwater flows around work areas and are not contaminated.
  - Report any erosion.
  - Check that dirty water is kept from clean water.

- **Waste Management:**
  - Take care of your own waste
  - Keep waste separate into labelled containers – report full bins.
  - Place waste in containers and always close lid.
  - Don't burn waste.
  - Pick-up any litter laying around.

- **Hazardous Waste Management (Petrol, Oil, Diesel, Grease)**
  - Never mix general waste with hazardous waste.
  - Use only sealed, non-leaking containers.
  - Keep all containers closed and store only in approved areas.
  - Always put drip trays under vehicles and machinery.
  - Empty drip trays after rain.
  - Stop leaks and spills, if safe:
    - ✓ Keep spilled liquids moving away.
    - ✓ Immediately report the spill to the site manager/supervision.
    - ✓ Locate spill kit/supplies and use to clean-up, if safe.
    - ✓ Place spill clean-up wastes in proper containers.
    - ✓ Label containers and move to approved storage area.

- **Discoveries:**
  - Stop work immediately.
  - Notify site manager/supervisor.
  - Includes – archaeological finds, cultural artefacts, contaminated water, pipes, containers, tanks and drums, any buried structures.

- **Air Quality:**
  - Wear protection when working in very dusty areas.
  - Implement dust control measures:
    - ✓ Water all roads and work areas.

- ✓ Minimize handling of material.
- ✓ Obey speed limit and cover trucks.

- **Driving and Noise:**

  - Use only approved access roads.
  - Respect speed limits.
  - Only use turn-around areas – no crisscrossing through undisturbed and inactive areas.
  - Avoid unnecessary loud noises.
  - Report or repair noisy vehicles.

- **Vegetation and Animal life:**

  - Do not remove any plants or trees without approval of the site manager.
  - Do not collect firewood.
  - Do not catch, kill, harm, sell or play with any animal, reptile, bird or amphibian on site.
  - Report any animal trapped in the work area.
  - Do not set snares or raid nests for eggs or young.

- **Fire Management:**

  - Do not light any fires on site, unless contained in a drum at demarcated area.
  - Put cigarette butts in a rubbish bin.
  - Do not smoke near gas, paints or petrol.
  - Know the position of firefighting equipment.
  - Report all fires.
  - Don't burn waste or vegetation.

n) Specific information required by the Competent Authority

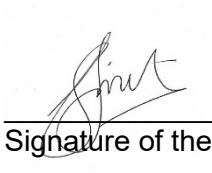
(Among others, confirm that the financial provision will be reviewed annually)

The Applicant undertakes to annually review and update the financial provision calculation, upon which it will be submitted to DMRE for review and approved as being sufficient to cover the environmental liability at the time and for closure of the mine at that time.

2. UNDERTAKING

The EAP herewith confirms

a) the correctness of the information provided in the reports [X]
b) the inclusion of comments and inputs from stakeholders and I&AP's [X]
c) the inclusion of inputs and recommendations from the specialist reports where relevant, and [X]
d) that the information provided by the EAP to interested and affected parties and any response by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein [X]



Signature of the environmental assessment practitioner:

Greenmined Environmental (Pty) Ltd

Name of Company:

15 November 2024

Date:

-END-

APPENDIX A

REGULATION 2(2) MINE MAP

APPENDIX B
LOCALITY MAP AND LAND USE MAP

APPENDIX C
SITE ACTIVITIES PLAN

APPENDIX D

SCREENING REPORT

APPENDIX E
REHABILITATION MAP

APPENDIX F
PROOF OF PUBLIC PARTICIPATION

APPENDIX G
SUPPORTING IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, herewith please receive an environmental impact statement that summarises the impact that the proposed activity may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

+

ENVIRONMENTAL IMPACT STATEMENT			
SITE ALTERNATIVE 1			
TYPE OF IMPACT	**DURATION**	**LIKELIHOOD**	**SIGNIFICANCE**
Site establishment & infrastructure development • Alteration of the agricultural sense of place; • Loss of agricultural land for duration of mining; • Visual intrusion as a result of site establishment; • Potential impact on fauna within the footprint area; • Potential impact on vegetation and listed and/or protected plant species • Dust nuisance due to site establishment • Potential impact on archaeological artefacts; • Work opportunities to 6 local residents **(Positive Impact)**	**Duration of site establishment phase (<1 month)**	**Possible** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Definite**	**Low-Medium Concern** **Low-Medium Concern** **Low-Medium Concern** **Low Concern** **Low Concern** **Low-Medium Concern** **Low Concern** **Medium-High (+)**
Construction of site access road: • Visual intrusion caused by construction of site access road • Loss of stockpiled topsoil during construction of access road • Dust nuisance as a result of the construction of access road • Noise nuisance generated by earthmoving machinery. • Potential erosion of denuded areas. • Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages.	**Duration of site establishment phase (<1 month)**	**Possible** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility**	**Low Medium Concern** **Low-Medium Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern**

ENVIRONMENTAL IMPACT STATEMENT			
SITE ALTERNATIVE 1			
Mining of silty sand and quartzitic sandstone pebbles: • Soil contamination from hydrocarbon spills. • Disturbance to fauna within the footprint area. • Noise nuisance as a result of the mining activities. • Potential impact on areas/infrastructure of heritage or cultural concern.	**Duration of operational phase (5 years maximum)**	**Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility**	**Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern**
Stripping and stockpiling of topsoil and/or overburden: • Visual intrusion caused by mining activities; • Loss of stockpiled topsoil during mining and stockpiling; • Dust nuisance as a result of the disturbance of soil; • Noise nuisance generated by earthmoving machinery; • Potential impact on local fauna due to disturbance and loss of available habitat; • Potential erosion of denuded areas; • Loss of stockpiled material due to ineffective storm water control • Potential contamination of footprint area and surface runoff as a result of hydrocarbon spillages;	**Duration of site establishment phase (<1 month)**	**Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Possible**	**Low Medium Concern** **Low Medium Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low Medium Concern** **Low Concern**
Excavation, loading and hauling to the processing plant: • Visual intrusion as a result of excavation and from loading and vehicles transporting the material • Dust nuisance due to excavation and from loading and vehicles transporting the material; • Noise nuisance as a result of the mining activities; • Unsafe working environment for employees;	**Duration of operational phase (5 years maximum)**	**Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility**	**Low Medium Concern** **Low Concern** **Low Concern** **Low Medium Concern**

ENVIRONMENTAL IMPACT STATEMENT			
SITE ALTERNATIVE 1			
• Soil contamination from hydrocarbon spills and/or littering; • Potential impact on areas of palaeontological concern; • Facilitation of erosion due to mining activities;		**Low Possibility** **Low Possibility** **Low Possibility**	**Low Medium Concern** **Low Concern** **Low Concern**
Processing, stockpiling and transporting of material: • Dust nuisance generated at the processing plant; • Noise nuisance stemming from operation of the processing plant; • Visual intrusion as a result of operation of the processing plant • Potential contamination of environment due to improper waste management; • Overloading of trucks impacting road infrastructure; • Degradation of the access road;	**Duration of operational phase (5 years maximum)**	**Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility**	**Low Concern** **Low Concern** **Low Medium Concern** **Low Concern** **Low Medium Concern** **Low Medium Concern**
Cumulative impacts: • Impact the broad-scale ecological processes; • Transformation of intact habitat would contribute to the fragmentation of the landscape and would potentially disrupt the connectivity of the landscape for fauna, avifauna, and flora and impair their ability to respond to environmental fluctuations • Impact on existing infrastructure as a direct result of the mining operation;	**Duration of all phases**	**LIKELIHOOD** **Low Possibility** **Low Possibility** **Low Possibility**	**SIGNIFICANCE** **Low Medium Concern** **Low Medium Concern** **Low Medium Concern**
Sloping and landscaping upon closure of the mining area: • Safety risk posed by un-sloped areas; • Erosion after rehabilitation;	**Duration of decommissioning phase (±2 months)**	**LIKELIHOOD** **Low Possibility** **Low Possibility**	**SIGNIFICANCE** **Low Medium Concern** **Low Medium Concern**

ENVIRONMENTAL IMPACT STATEMENT			
SITE ALTERNATIVE 1			
• Infestation of the reinstated areas by weeds and invader plant species; • Potential impact associated with litter/waste left at the mining area. • Return of the mining area to landscape feature upon closure **(Positive Impact)**.		**Low Possibility** **Low Possibility** **Definite**	**Low Medium Concern** **Low Medium Concern** **Medium-High (+)**

APPENDIX H
FINANCIAL AND TECHNICAL ABILITY

APPENDIX I

INVASIVE PLANT SPECIES MANAGEMENT PLAN

APPENDIX J

PHOTOGRAPHS OF THE PROPOSED SITE

APPENDIX K

CV AND EXPERIENCE RECORD OF EAP

APPENDIX L
CLOSURE - REHABILITATION PLAN

APPENDIX M
AGRICULTURE IMPACT ASSESSMENT

APPENDIX M1
RISK ASSESSMENT

APPENDIX M2
TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT

APPENDIX M3
NOTICE OF INTENT TO DEVELOP

APPENDIX M4
LAND USE APPLICATION

APPENDIX N
SITE SENSITIVITY REPORT