



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

DRAFT BASIC ASSESSMENT REPORT
(PART A)
for
BUILDING SAND AN GREYWACKE MINING PERMIT
On
PORTION 4 OF FARM DOORNFONTEIN 814
MALMESBURY, WESTERN CAPE

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

NAME OF APPLICANT: Dyck Advisory Pty (Ltd)

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DMR Ref NR: WC 30/5/1/3/2/12 MP

DATE OF REPORT: 17 September 2026

1. IMPORTANT NOTICE

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

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

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

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

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

2. Objective of the basic assessment process

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

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (b) identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) describe the need and desirability of the proposed alternatives,
- (d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage , and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects to determine:
 - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - (ii) the degree to which these impacts—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be managed, avoided or mitigated;
- (e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
 - (i) identify and motivate a preferred site, activity and technology alternative;
 - (ii) identify suitable measures to manage, avoid or mitigate identified impacts;
and
 - (iii) identify residual risks that need to be managed and monitored.

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PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

a) Details of the EAP

i) Name and Contact Details of the EAP

Name of The Practitioner: Johmandie Pienaar
Cell No.: 072 240 3092
Fax: 086 435 4691
e-mail address: johmandie@enviro-eap.co.za

ii) Expertise of the EAP.

The qualifications of the EAP (with evidence).

EAPASA Registration Nr. 2020/2326

EAP since March 2009

Johmandie Pienaar (Giliomee) holds a Baccalaureus Technologiae Degree (Cum Laude) in Nature Conservation from the Cape Peninsula University of Technology and has also completed the following short courses at the Centre for Environmental Management:

- Implementing Environmental Management Systems (ISO 14001)(2009);
- Occupational Health and Safety Law for Managers (2010);
- Implementing an OHS Management System based on OHSAS 18001 (2010) and;
- Occupational Health and Safety Management System OHSAS 18001 Audit: A Lead Auditor Course Based on ISO 19011 and ISO 17021 (2011).

And presented by Executive Coaching & Facilitation:

- Conduct Outcome Based Assessments (May 2015).

Summary of the EAP's past experience.

(In carrying out the Environmental Impact Assessment Procedure)

Johmandie has been involved in environmental management and assessment aspects since 2005 having worked for South African National Parks and then as a private Environmental Manager for an estate in the Swartland.

Since March 2009 Johmandie has been practicing as an Environmental Assessment Practitioner, as part of an environmental consultancy company, on several projects throughout South-Africa and mainly within the Western Cape.

Johmandie has also been involved in successfully compiling, coordinating and managing Basic Assessment Reports, Environmental Impact Assessments, Section 24G Applications, NEMA EIA Checklists, Environmental Management Programmes, Waste License Applications, Water Use License Applications, Mining Right and Mining Right Applications, Environmental Rehabilitation Plans, Baseline Biodiversity Surveys for numerous clients.

Johmandie has also conducted and completed numerous Environmental Control Officer jobs, and since 2011 been involved in Occupational Health and Safety Auditing, Managing and Training specializing in the auditing of construction sites and implementing and auditing

Occupational Health and Safety Management Systems, and providing training on the implementation of Occupational Health and Safety Management System OHSAS 18001.
(Refer to **Appendix A** for EAP CV)

b) Location of the overall Activity.

Farm Name:	Portion 4 of Farm Doornfontein 814																																
Application area (Ha)	5Ha																																
Magisterial district:	Malmesbury – Swartland Municipality																																
Middle Point (GPS Co-ordinates) of Property	Mine area coordinates: <table><tr><th colspan="4">COORDINATES</th></tr><tr><td rowspan="2">C1</td><td>Lat</td><td>33°32'4.51"S</td><td>-33.534585°</td></tr><tr><td>Long</td><td>18°43'48.76"E</td><td>18.730212°</td></tr><tr><td rowspan="2">C2</td><td>Lat</td><td>33°32'4.49"S</td><td>-33.534582°</td></tr><tr><td>Long</td><td>18°43'56.83"E</td><td>18.732454°</td></tr><tr><td rowspan="2">C3</td><td>Lat</td><td>33°32'12.33"S</td><td>-33.536758°</td></tr><tr><td>Long</td><td>18°43'56.92"E</td><td>18.732478°</td></tr><tr><td rowspan="2">C4</td><td>Lat</td><td>33°32'12.20"S</td><td>-33.536724°</td></tr><tr><td>Long</td><td>18°43'48.81"E</td><td>18.730224°</td></tr></table>	COORDINATES				C1	Lat	33°32'4.51"S	-33.534585°	Long	18°43'48.76"E	18.730212°	C2	Lat	33°32'4.49"S	-33.534582°	Long	18°43'56.83"E	18.732454°	C3	Lat	33°32'12.33"S	-33.536758°	Long	18°43'56.92"E	18.732478°	C4	Lat	33°32'12.20"S	-33.536724°	Long	18°43'48.81"E	18.730224°
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Distance and direction from nearest town	The property is accessed off the R302 road ±7km south of Malmesbury.																																
21 digit Surveyor General Code for each farm portion	C04600000000081400004																																

c) Locality map
(show nearest town, scale not smaller than 1:250000)

See locality maps as attached under **Appendix B**.

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 the aforesaid main and listed activities, and infrastructure to be placed on site

The proposed property, Farm Doornfontein RE/4/814 size 200.82ha is located approximately ±7km to the south of Malmesbury, within the municipal jurisdiction of Swartland Municipality. The property can be accessed via Main Road 174 (R302) which connects to the N1.

The predominant land use in the surrounding area is agriculture and includes cultivated land used for grain production and vineyards.

The property is used as an agricultural unit and is developed with infrastructure such as a farmhouse or labourer cottages. The site of the proposed 5ha sand mine has significantly been impacted upon by agricultural activities. The site has previously been ploughed and is currently used for production of oats. The soils down the slope have previously been mined and are now utilised for oats in the same way as the rest of the land. The nearest non-perennial watercourse is located approximately 250m to the west of the proposed mine.

The applicant, Dyck Advisory Group (Pty) Ltd, seeks permission to establish a dry-pit sand and gravel mine on the property. The proposed mining area in total is 5ha in extent.

Mine area coordinates:

COORDINATES			
C1	Lat	33°32'4.51"S	-33.534585°
	Long	18°43'48.76"E	18.730212°
C2	Lat	33°32'4.49"S	-33.534582°
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	Long	18°43'48.81"E	18.730224°

The average depth of mine-able sand spread over the mine area (5ha) is ± 30 cm deep and the average depth of gravel, ± 50 cm (this excludes the 50cm topsoil proposed to be removed for rehabilitation purposes). The total volume of mine-able sand on the mining area is conservatively estimated to be $\pm 15\,000\text{m}^3$ and gravel $\pm 25\,000\text{m}^3$ with an expected maximum depth of 2.5m to be mined. The mine will be operated in such a way that once sand and gravel resources are removed and the mine is closed, the site can be used for agricultural activities as currently the case.

The mining operator will first remove the topsoil layer (50cm) from block 1 and stockpile it on the to be mined block 2. The mineable sand and gravel will then be removed from block 1 by a front-end loader and loaded onto tip-trucks. When all mineable sand and gravel is removed from block 1, the stockpiled topsoil on block 2 is removed and immediately placed on block 1, leaving 500mm topsoil above the gravel / clay layer. Removal of topsoil from block 2 commences and is stockpiled on block 3, where after mining on block 3 commence. Concurrent mining and rehabilitation continue until the sand resource on the 6 mining blocks is removed. The mining process reduced the depth of the sand but, following the recommended rehabilitation measures, will leave a minimum of 500 mm of topsoil. After mining the area will be used for ongoing cultivation and livestock grazing as per previous status quo.

(i) Listed and specified activities

NAME OF/DESCRIBE THE ACTIVITY	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
(E.g. For prospecting - drill site, site camp,		(Mark with an X	(GNR 544, GNR 545 or GNR 546)

ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc E.g. for mining , - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)		where applicable or affected).	
Proposed mining permit for sand and gravel on Farm Doornfontein RE/4/814 Proposed mining as referred to include all activities associated with the proposed sand and gravel mining such as any explorations required, site establishment, demarcations, any excavations, any vehicular movements and hauling, any access and internal roads used and processing of excavated materials, topsoil and overburden storage and implementation of rehabilitation and monitoring measures as described in the proposed project description.	5Ha	X	Listing Notice 1. Listed 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, 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.

(ii) Description of the activities to be undertaken

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

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Rehabilitation

Main closure/rehabilitation objective is to rehabilitate the proposed 5Ha mining activities area to its previous status quo of successful agricultural cropping land.

This will be achieved by implementing the following progressive rehabilitation measures:

- During mining, the outflow of run-off water from the mining excavation must be controlled to prevent any down-slope erosion. This must be done by way of the construction of temporary banks and ditches that will safely disperse run-off water. These should be in place above the mining area, to minimise run-off into the excavation and at any points where overflow out of the excavation might occur.
- The upper 50 cm of soil, even if it contains gravel, must first be stripped and stockpiled before mining.
- Topsoil is a valuable and essential resource for rehabilitation, and it should 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 should be such that topsoil is stockpiled for the minimum possible time by rehabilitating different mining blocks progressively as the mining process continues.

- Topsoil stockpiles should be protected against losses by water and wind erosion. Stockpiles should be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants on the stockpiles will help to prevent erosion. Stockpiles should be no more than 2 metres high.
- To ensure that soil drainage is sufficiently maintained, it is important that the mining excavation, including along its bottom edge, remains free draining after rehabilitation and does not form a depression.
- After mining, any steep slopes, along the edges of the mining excavation or within it, must be reduced to a minimum and profiled to blend with the surrounding topography.
- The stockpiled topsoil must then be evenly spread across the entire mining area. The depth should be monitored during spreading to ensure that coverage is adequate and even. A slope must be maintained so that ponding of water does not occur on the surface.
- A cover crop must be planted and established immediately after spreading of topsoil, to stabilise the soil and protect it from erosion. The cover crop should be fertilized for optimum growth, and any soil chemical deficiencies should be corrected, based on a chemical analysis of the re-spread soil. It is important that rehabilitation is taken up to the point of cover crop stabilisation. Rehabilitation cannot be considered to be complete until the first cover crop is well established.
- The rehabilitated area must be monitored for erosion, and appropriately stabilised if any erosion occurs.
- On-going alien vegetation control must keep the area free of alien vegetation after mining.
- All waste, structures, stockpiles, fuel and water tanks, machinery, equipment, signs, demarcations and vehicles forming part of the mining activities must be removed from the site and these impacted areas must also be rehabilitated.
- Should any additional topsoil be required for rehabilitation purposes, it must be from neighbouring properties or alternatively sterilized accordingly. This is to ensure that any imported topsoil is free from soil pathogens, to prevent introduction of new pathogens to the region.

The site must be monitored regularly (at least 6 monthly and after heavy rains) for at least two years after rehabilitation and all signs of erosion immediately rectified and alien vegetation removed to prevent potential siltation, erosion and alien encroachment.

When no evidence of erosion and alien vegetation encroachment are visible and successful establishment of the cover crop is observed the rehabilitated areas can be considered as successfully rehabilitated. If successful rehabilitation of the site is not achieved the appointed Environmental Control Officer must provide recommendations on additional rehabilitation methods to be implemented.

The mine permit holder must commit to post-closure maintenance during rehabilitation of the site until the time of receipt of a closure certificate for all or parts of the impacted mining areas.

e) Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.
(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies,		

plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process		(E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)
Minerals and Petroleum Resources Development Act (No 28 of 2002) and National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA] and relevant regulations	Sections 38 to 47 of MPRDA S24(1) of NEMA S28(1) of NEMA	An application for a Mining Permit and Environmental Authorisation submitted to the DMR. Draft BAR submitted to the DEA&DP: Land Management for comments.
Land Use Planning Ordinance (15 of 1985)	Local municipality	Temporary wayleave application for Agricultural Zoning to Mining to be applied for at the local municipality once/if EA is obtained.
National Heritage Resources Act 25 of 1999 [NHRA]	-	Notice of Intent to Develop submitted to Heritage Western Cape - HWC confirmed no heritage impact assessment required.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [NEMWA] and relevant regulations	-	Draft BAR submitted to the DEA&DP: Waste Management and DEA&DP: Pollution and Chemical Management for comments.
National Environmental Management: Biodiversity Act 10 of 2004 [NEMBA] and relevant regulations	-	Terrestrial, plant and animal impact compliance statements conducted and specialist findings have informed the preferred layout and mitigation measures have been incorporated into the EMPr requirements. Draft BAR submitted to CapeNature for comments.
National Environmental Management: Air Quality Act, 39 of 2004 [NEMAQA] and Relevant Regulations	-	No air emissions license is required for this project. The legislation has been considered and potential dust impacts mitigation measures have been incorporated into the EMPr requirements.
National Water Act, 1998 (Act No. 36 of 1998) [NWA] and relevant regulations	Section 21 – Water Use Activities	Draft BAR submitted to the BGCMA to determine applicability of Section 21 of the NWA
Conservation of Agricultural Resources Act, 43 of 1983 [CARA]	-	Draft BAR submitted to the Western Cape Department of Agriculture for comments. All impacted areas to be rehabilitated to previous status of cultivated agricultural land.
National Health Act, 61 of 2003; Constitution of the Republic of South Africa, 1996	-	All potential health impacts identified and assessed in the impact assessment – associated

		mitigation measures incorporated in the EMPr.
Fencing Act, 31 of 1963	-	NA
National Veld and Forest Fire Act 101 of 1998 [NVFFA]	-	NA
Environment Conservation Act, 73 of 1989, Western Cape Noise Control Regulations	-	All potential noise impacts identified and assessed in the impact assessment – associated mitigation measures incorporated in the EMPr.
National Forests Act, 84 of 1998	-	NA
Hazardous Substances Act, 15 of 1973	-	All potential hazardous substances impacts identified and assessed in the impact assessment – associated mitigation measures incorporated in the EMPr.
National Environmental Management: Protected Areas Act 57 of 2003	-	NA
Mine Health and Safety Act, 1996 (Act No. 29 of 1996)	-	All mining activities to adhered to Mine Health and Safety Act requirements at all times – as per EMPr requirements.
Compensation for Occupational Injuries and Diseases Act 130 of 1993	-	All mining activities to adhered to Compensation for Occupational Injuries and Diseases Act requirements at all times – as per EMPr requirements.
Basic Conditions of Employment Act 75 of 1997	-	All requirements to be adhered to during mining activities – as per EMPr requirements.
Labour Relations Act 66 of 1995	-	All requirements to be adhered to during mining activities – as per EMPr requirements.

POLICY/ GUIDELINES	ADMINISTERING AUTHORITY
Swartland Municipality SDF	Swartland Municipality
Swartland Municipality Town planning regulations	Swartland Municipality
Guideline on Public Participation	Department of Mineral Resources and Environmental Affairs
Guidelines on Alternatives	Department of Mineral Resources and Environmental Affairs
Guideline on Need and desirability	Department of Mineral Resources and Environmental Affairs
Guideline for Environmental Management Plans (EMP's)	Department of Mineral Resources and Environmental Affairs
PGWC Urban Edge Guidelines	Western Cape Department of Environmental Affairs and Development Planning
PGWC SDF	Western Cape Department of Environmental Affairs and Development Planning

f) **Need and desirability of the proposed activities.**

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

The concept of need and desirability relates to the type of development being proposed in any specific area. According to the DEA&DP guidelines on the consideration of need and desirability, the concept of need and desirability can be explained in terms of the general meaning of its two components in which need refers to time and desirability to place. In other words, one must ask “is this the right time and is it the right place for locating the type of land use or activity being proposed?” Need and desirability can be equated to wise use of land to ensure that the activity proposed is the most sustainable use of land.

The proposed activity entails the mining of building sand and gravel for use in the building industry and for civil infrastructure development. The enterprise will supply in the demand for sand from construction companies operating in the Swartland area. The mine will provide employment on site and contributes to the job opportunities generated by the construction industry for mostly previously disadvantaged individuals.

The mining for sand and gravel within the 5ha area as identified on Farm Doornfontein 4/814 is deemed to be the best practical and economical practice, as it will result in insignificant biophysical impacts as determined by the specialist reports conducted. The mining of the area for the purposes of extracting gravel and sand activities is thus deemed to be the most suitable land use at this point in time as it is sited next to areas where such materials was mined successfully in the past. The proposed position of the mining is consistent with its surrounding context which is not falling under CBA's or ESA's and the open cast method is the most practical option. The transformed nature of the proposed site favours the proposed mining and any other land use (residential, conservation) cannot be considered as viable alternatives in this context. The ecological impact assessment conducted concluded that if the proposed mining activities is conducted on the proposed 5ha area and the specialist recommendations as listed in the reports are incorporated into the EMPr are adhered to that the proposed mining activities will not have any significant detrimental environmental impacts on any sensitive environmental and landscape features identified on the site or surrounds.

The proposed mining will not result in additional opportunity costs and does not require any service infrastructure and as such will not put additional pressure on municipal infrastructure. This project will not require any upgrades to bulk municipal infrastructure.

The project is not intended to address an issue of national concern or importance. The project will be consistent with the existing built environment, i.e. proposed in an area that has similar land uses. Because of its consistency with surrounding land use, it can be stated with a high level of confidence that this project will not have a significant negative impact on the natural landscapes and rehabilitation upon mining completion by infilling of overburden and topsoil will be practiced to restore the land use to its previous status quo (before any mining activities commenced) which cultivated agricultural land.

The execution of this proposed project at the preferred location will not cause the loss or potential gain from another alternative industry. This proposal will ensure long term availability of raw material for nearby construction activities within the Swartland area. This project will not likely result in any significant cumulative impacts directly to the surrounding area or the region as a whole. This proposal is consistent with the existing and surrounding land use and as such is deemed to be the best practicable environmental option for the site with proper rehabilitation when operations ceased. This proposal will result in medium term employment opportunities during the lifespan of the mining operation (two to five years).

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

The aim of considering alternatives was to identify, predict and evaluate the actual and potential impact on the environment (including socio-economic and cultural environments), to assess alternatives and propose mitigation options which will contribute to minimizing detrimental impact. Therefore, as need and desirability of the proposed activities are stated above it is very crucial to motivate for the mining/excavating of the farm under application which will create job opportunities and provide further economic opportunities for the Swartland areas in terms of providing much needed gravel and sand materials within the area. For this application, actual and potential impacts on the various environments have been considered and assessed. The nature of the preferred alternative must result in minimal impacts on the environment.

- **Preferred site alternative**

Farm Doornfontein RE/4/814 is the preferred site alternative for the proposed sand and gravel mining because this is where viable sand and gravel deposits are known to occur as proven from previous mining operations conducted on the property and surrounds.

- **Preferred activity alternative**

The proposed sand and gravel mining activities are the only feasible and reasonable activity considered for the specific area as proposed, because it is consistent with previous successful sand mining that has taken place on the property and surrounds.

- **Preferred technology alternative**

Technological alternatives for the proposed sand and gravel mining operations on the specific site is limited. The reasons why the company will be making use of open-cast mining with bulldozer/excavator is due to the specific terrain and materials present at the site and because this has been proven as an effective mining method on the specific site in the past. Therefore it is not necessary to consider any other technology alternatives.

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.**

(a) Location alternatives – When a mineral is in demand, scouting of viable resources are required. It is important to note that in contrast to most other development, viable mineral locations are literally and figuratively “set in stone” based on the geology, mineral

composition and geological and climatic processes such as those responsible for mineralization. Farm Doornfontein RE/4/814 is the preferred site alternative for the proposed sand and gravel mining because this is where viable sand and gravel deposits are known to occur as proven from previous mining operations conducted on the property and surrounds.

(b)Activity alternatives- The transformed nature of the proposed site favours the proposed mining and any other activities (development, residential, conservation) cannot be considered as viable alternatives in this context. The proposed temporary sand and gravel mining activities are the only feasible and reasonable activity considered for the specific area as proposed, because it is consistent with the nearby successful sand and gravel mining activities conducted and will allow for optimal economical use of the land during mining and restoring the land for agricultural cultivation to continue after mining has been completed. Therefore, no other feasible or reasonable activity alternatives exists and as such none was assessed. No activity alternatives other than the no go option were considered or assessed. The applicant identified this area for sand and gravel mining purposes. The method of mining is singular.

(c)Layout alternatives – Layout alternatives were considered and assessed. The buffer areas and sensitive environmental features such as sensitive indigenous vegetation, watercourses, agricultural infrastructure and sand/gravel mineral resources were taken into consideration when the mining area blocks and phases were developed for the mine operation plan. The proposed 5ha mining area as placed on the property avoids sensitive environmental features while ensuring it is located within an area with viable sand and gravel deposits for mining.

(d)Technology alternatives – The consideration of technological alternative is very limited in this application. Technological alternatives are limited to different mining techniques and equipment used. No technology alternatives exist. The method of mining is singular. Plant equipment (excavator and dump trucks) is used to remove and transport the minerals from the mine area. From the mine area the mined mineral resources will directly be transported off site to the buyer or it will be temporarily stockpiled within the mining area where it will be screened and mix to ensure an aggregate material that meets the buyers needs.

(e)Operational alternatives – The method of mining is singular and is described in the mine operations plan (EMP). Operational alternatives in terms of mining phase block sizes and layout and speed limit restrictions with maintenance actions prescribed on the gravel access road were assessed and included as mitigation measures. The operational alternatives, e.g. small mine blocks or phases inside the mine area will reduce the visual impact. The speed limit will ensure the safety of other road users and pedestrians and weekly grading and maintenance of the access road from the R302 will reduce dust impacts and will ensure that the gravel road is maintained during mining operations to at least its current state before mining activities commenced. The mining operator will first remove the topsoil layer (50cm) from block 1 and stockpile it on the to be mined block 2. The mineable sand and gravel will then be removed from block 1 by a front-end loader and loaded onto tip-trucks. When all mineable sand and gravel is removed from block 1, the stockpiled topsoil on block 2 is removed and immediately placed on block 1, leaving 500mm topsoil above the gravel / clay layer. Removal of topsoil from block 2 commences and is stockpiled on block 3, where after mining on block 3 commence. Concurrent mining and rehabilitation continue until the sand resource on the 6 mining blocks is removed. The mining process reduced the depth of the sand but, following the recommended rehabilitation measures, will leave a minimum of 500 mm of topsoil.

(f)The No-Go/No-Mining Option- The No-Go option will result in the site remaining as it is presently, cultivated agricultural land used for oats planing. As much as the no-go option will result in the protection of the current already transformed environment it will result in the

sterilization of the available gravel and sand material should no other company mine the area. This would reduce gravel and sand resources available for i.e. road construction in the area. The no-go option would also result in no new employment opportunities. Mining activities will have negative environmental impacts and is not sustainable but upon completion of excavations with proper rehabilitation previous land uses like outcrops can be continued on the property. The overall potential impacts of the proposed gravel and sand mining activities on the environment and specifically on the agricultural potential of the affected areas has been assessed as low negative with the implementation of the proposed EMP requirements.

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.)

Also Refer to **Appendix C for proof of PPP conducted.**

This section of the report is included in compliance with the Regulations. Public participation is an integral part of the EIA process and affords potentially interested and potentially affected parties (I&APs) an opportunity to participate in the EIA process, or to comment on any aspect of the development proposals.

Other relevant considerations regarding the public participation process being undertaken for this project are that:

- The public participation process being undertaken for this project complies with the requirements of the Regulations.
- The description of the public participation process included in sections below itemises the steps and actions undertaken.

THE FOLLOWING PUBLIC PARTICIPATION PROCESS WAS AND WILL BE CONDUCTED:

Notification to I&APs

Potential I&AP's are notified about the project in the following manner (this is in compliance with Regulation 41 of GN R982):

- Fixing notice boards at the boundary of the property in compliance with Regulation 41 of GN R982.
- Written notifications are sent via registered post to potential I&APs (i.e. landowner, direct neighbours etc.) inviting them to register and give comments on the proposed development within 30 days from the date which appears on the notice. These notifications are in line with the requirements of the Regulations. E-mail notices will be sent to all direct bordering property owners.
- Placing an advertisement in a local newspaper of the notice in compliance with the Regulations.

All potential I&APs will be afforded the opportunity (within a 30 day period) to register for the project and provide comments on the Draft BAR.

Public Meetings and Workshops

If deemed necessary or requested by any members of the public or registered interested and affected parties a public meeting will be held.

Availability of the Draft Basic Assessment Report

As per the requirements of Regulation 43 of GN R982, the Draft Basic Assessment Report (BAR) will be made available to all relevant state departments and all potential and registered I&APs for a 30 day commenting period.

The Draft Basic Assessment Report will be sent to the following Key Departments for consideration/comments:

- Department: Mineral Resources
- Breede-Gouritz Catchment Management Agency
- CapeNature Scientific Services
- DEA&DP: Development Facilitation
- DEA&DP: Land Management
- DEA&DP: Pollution & Chemical Management
- DEA&DP: Waste Management
- DEA&DP: Planning
- DEA&DP: Air Quality Management
- Department of Agriculture -Western Cape
- National Department of Agriculture, Forestry and Fisheries
- West Coast District Municipality
- Heritage Western Cape: A Notice of Intent to Develop was also submitted to HWC
- Swartland Municipality
- National Nuclear Regulator
- Transnet
- SANRAL
- Department of Land Affairs: Land Claims
- Department of Roads and Transport
- Eskom
- Western Cape Department of Health

Proof of delivery and document placement will be attached to the final BAR under Appendix C. Comments received will be responded to as per the requirements of regulations within the Final BAR. Proof of all comments received will be attached to the final BAR under Appendix C.

The Final BAR Phase

Once all comments have been received, the BAR will be finalised taking into account the comments and submitted to the competent authority for a decision.

Decision and Appeal Period

Once the DMR have reviewed the Final BAR and are satisfied that it contains sufficient information to make an informed decision, the DMR will use the information contained within the BAR to determine the environmental acceptability of the proposed development/activities. A decision on the applications and associated reports will be made by the DMR based on the findings of the BAR.

Following the issuing of the decision, all key department and registered I&APS will be notified and afforded the opportunity to appeal the decision to the MEC of the DMR in terms of the NEMA.

iii) Summary of issues raised by I&APs

Appendix C of the BAR will contain all Proof of Public Participation Process conducted and comments and response reports for issues raised by I&APs.

iv) The Environmental attributes associated with the alternatives.

(The environmental attributed 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).

Geographical, Physical and Biological Characteristics

The proposed property, Farm Doornfontein RE/4/814 size 200.82ha is located approximately ± 7 km to the south of Malmesbury, within the municipal jurisdiction of Swartland Municipality. The property can be accessed via Main Road 174 (R302) which connects to the N1.

The predominant land use in the surrounding area is agriculture and includes cultivated land used for grain production and vineyards.

The property is used as an agricultural unit and is developed with infrastructure such as a farmhouse or labourer cottages. The site of the proposed 5ha sand mine has significantly been impacted upon by agricultural activities. The site has previously been ploughed and is currently used for production of oats. The soils down the slope have previously been mined and are now utilised for oats in the same way as the rest of the land. The nearest non-perennial watercourse is located approximately 250m to the west of the proposed mine.

The applicant, Dyck Advisory Group (Pty) Ltd, seeks permission to establish a dry-pit sand and gravel mine on the property. The proposed mining area in total is 5ha in extent.

Mine area coordinates:

COORDINATES			
C1	Lat	33°32'4.51"S	-33.534585°
	Long	18°43'48.76"E	18.730212°
C2	Lat	33°32'4.49"S	-33.534582°
	Long	18°43'56.83"E	18.732454°
C3	Lat	33°32'12.33"S	-33.536758°
	Long	18°43'56.92"E	18.732478°
C4	Lat	33°32'12.20"S	-33.536724°
	Long	18°43'48.81"E	18.730224°

The average depth of mine-able sand spread over the mine area (5ha) is ± 30 cm deep and the average depth of gravel, ± 50 cm (this excludes the 50cm topsoil proposed to be

removed for rehabilitation purposes). The total volume of mine-able sand on the mining area is conservatively estimated to be $\pm 15\,000\text{m}^3$ and gravel $\pm 25\,000\text{m}^3$ with an expected maximum depth of 2.5m to be mined. The mine will be operated in such a way that once sand and gravel resources are removed and the mine is closed, the site can be used for agricultural activities as currently the case.

The mining operator will first remove the topsoil layer (50cm) from block 1 and stockpile it on the to be mined block 2. The mineable sand and gravel will then be removed from block 1 by a front-end loader and loaded onto tip-trucks. When all mineable sand and gravel is removed from block 1, the stockpiled topsoil on block 2 is removed and immediately placed on block 1, leaving 500mm topsoil above the gravel / clay layer. Removal of topsoil from block 2 commences and is stockpiled on block 3, where after mining on block 3 commence. Concurrent mining and rehabilitation continue until the sand resource on the 6 mining blocks is removed. The mining process reduced the depth of the sand but, following the recommended rehabilitation measures, will leave a minimum of 500 mm of topsoil.

The proposed 5ha mining permit site is not located on nor adjacent to any mapped Terrestrial Critical Biodiversity area or NFEPA wetland areas or watercourses and has no remaining indigenous vegetation.

It is therefore not expected that if mining is to take place within the 5ha of annually cultivated lands as surveyed by the EAP that it will have any significant detrimental ecological or heritage impacts should rehabilitation of the site be conducted in a successful manner by restoring the area to cultivated agricultural land through consecutive rehabilitation and operational activities and all mining related activities stay outside of the remaining indigenous vegetation and untransformed drainage line areas and access to and from the mining site is gained via existing farm access roads.

Also refer to aquatic, terrestrial, plant and animal impact compliance statements conducted and available under Appendix D.

Socio-Economic Characteristics

In 2020, Swartland area's economy was valued at R8.983 billion (current prices) and employed 43 200 people. Historical trends between 2016 and 2020 indicates that the municipal economy grew marginally at an average annual growth rate of 0.1 per cent. Although the secondary sector contracted, the primary and tertiary sectors continued to grow at 2.1 and 0.3 per cent respectively.

The growth can be attributed to the good growth in the agriculture, forestry & fishing sector (2.1 per cent) as well as relatively strong growth in the finance, insurance, real estate & business services (2.0 per cent) and general government (2.3 per cent) sectors. The 2020 recession made a substantial dent in the average growth rate over the period, but load shedding and the drought within the Province also played a major role in prior years. Estimates for 2021 however indicate a marked recovery in growth (6.6 per cent) from the effects of the COVID-19 related restrictions to economic activity in 2020. This growth was driven by recovery growth in a number of sectors, including manufacturing (9.5 per cent) wholesale & retail trade, catering & accommodation (8.1 per cent); finance, insurance, real estate & business services (4.2 per cent); agriculture, forestry and fishing (8.5 per cent) and community, social and personal services (8.2 per cent) sectors. The mining & quarrying (-13.5 per cent) and construction (-3.4 per cent) sectors were the only sectors that experienced further economic decline after the easing of restrictions. Despite the economic recovery experienced in 2021, the economy continued to shed jobs, with an estimated 739 net jobs lost. This was largely driven by job losses in the agriculture, forestry & fishing (-313), wholesale & retail trade, catering & accommodation (-306 jobs) and construction (-108)

sectors, reflecting that employment creation is lagging the improved GDP. Only the community, social & personal services (122) and general government (58) sectors were able to create jobs during the year.

There will be no negative socio-economic impacts associated with the temporary sand and gravel mine on Doornfontein farm as there are no communities in the immediate surrounding areas which could be negatively affected by proposed temporary mining activities.

Cultural Characteristics

As per the Record of Decision received from Heritage Western Cape and dated 15/09/2026 - *You are hereby notified that, since there is no reason to believe that the proposed establishment of a dry-pit sand and gravel mine of 5ha in extent on Portion 4 of Farm Doornfontein 814, off the R302, Malmesbury, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.*

HWC chance finds procedure to be included in the environmental authorization. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay.

Recommendation as made by HWC as per above has been included in the EMP requirements.

(b) Description of the current land uses.

LAND USE OF THE SITE

Untransformed area	Low density residential	Medium density residential	High density residential
Informal residential	Heavy industrial	Tourism & Hospitality facility	Dam or reservoir
Old age home	Airport	Filling station	Nature conservation area
Retail	Commercial & warehousing	Light industrial	Medium industrial
Power station	Office/consulting room	Military or police base/station/compound	Casino/entertainment complex
Open cast mine	Underground mine	Spoil heap or slimes dam	Quarry, sand or borrow pit
Hospital/medical center	School	Tertiary education facility	Church
Sewage treatment plant	Train station or shunting yard	Railway line	Major road (4 lanes or more)
Harbour	Sport facilities	Golf course	Polo fields
Landfill or waste treatment site	Plantation	Agriculture	River, stream or wetland
Mountain, koppie or ridge	Museum	Historical building	Graveyard
Archaeological site			
Other land uses (describe):			

Provide a description:

The proposed 5Ha mining area is located on an existing cultivated agricultural land used for the planting of oats.

LAND USE CHARACTER OF SURROUNDING AREA

Highlight the current land uses and/or prominent features that occur within +/- 500m radius of the site and neighbouring properties if these are located beyond 500m of the site.

Untransformed area	Low density residential (Farm Houses)	Medium density residential	High density residential
Informal residential	Heavy industrial	Tourism & Hospitality facility	Man-made Farm Dam or reservoir
Old age home	Airport	Filling station	Nature conservation area
Retail	Commercial & warehousing	Light industrial	Medium industrial
Power station	Office/consulting room	Military or police base/station/compound	Casino/entertainment complex
Open cast mine	Underground mine	Spoil heap or slimes dam	Quarry, sand or borrow pit
Hospital/medical center	School	Tertiary education facility	Church
Sewage treatment plant	Train station or shunting yard	Railway line	Major road (4 lanes or more)
Harbour	Sport facilities	Golf course	Polo fields
Landfill or waste treatment site	Plantation	Agriculture	River, stream, wetland or drainage line
Mountain, koppie or ridge	Museum	Historical building	Graveyard
Archaeological site			
Other land uses (describe):			

Provide a description:

Within a 500m radius of the proposed mining areas lies farm houses, R302 road, cultivated and grazing agricultural land and a non-perennial watercourse (+/- 250m away).

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

Existing infrastructure present on the site includes gravel access roads, farm fencing and cultivated agricultural land.

All indigenous vegetation has been previously cleared on the proposed 5ha site either during establishment of cultivated agricultural land more than 50 years ago.

The proposed mining areas is not mapped as an ESA or CBA according to Western Cape Biodiversity Spatial Plan, nor is there any watercourses, wetland or mapped NFEPA's on or immediately adjacent to the proposed mining site

GRADIENT OF THE SITE

Indicate the general gradient of the sites (highlight the appropriate box).

Flat	Flatter than 1:10	1:10—1:4	Steeper than 1:4
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LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (highlight the appropriate box(es)).

Ridgeline	Plateau	Side-slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on or near any of the following (highlight the appropriate boxes)?

Shallow water table (less than 1.5m deep)	YES	NO	UNSURE
Seasonally wet soils (often close to water bodies)	YES	NO	UNSURE
Unstable rocky slopes or steep slopes with loose soil	YES	NO	UNSURE
Dispersive soils (soils that dissolve in water)	YES	NO	UNSURE
Soils with high clay content	YES	NO	UNSURE
Any other unstable soil or geological feature	YES	NO	UNSURE
An area sensitive to erosion	YES	NO	UNSURE
An area adjacent to or above an aquifer.	YES	NO	UNSURE
An area within 100m of the source of surface water	YES	NO	UNSURE

Please indicate the type of geological formation underlying the site.

Granite	Shale	Sandstone	Quartzite	Dolomite	Dolorite	Other (describe)
Please provide a description.						

Source; CapeFarmMapper 17/09/2026

Soil Types

Symbol: EA
Class: Soils with limited pedological development
Description: Soils with minimal development, usually shallow on hard or weathering rock, with or without intermittent diverse soils. Lime rare or absent in the landscape
Depth: ≥ 450 mm and < 750 mm
Clay: $< 15\%$

Broad Soils Classification (ENPAT)

Soil Type: Glenrosa and/or Mispah forms (other soils may occur), lime rare or absent in the entire landscape
Geology: Mainly greywacke and phyllite of the Moorreesburg Formation, Malmesbury Group, and granite of the Paardeberg Pluton, Cape Granite Suite; also Quaternary quartz sand of the Springfontein Formation.

Geology Classification (1:1M)

Code: CRe
Lithostratigraphic: MOORREESBURG FORMATION
Lithology: Greywacke, phyllite, schist, limestone
UQ Geology: 1155
UQ SACS NO: 488

SURFACE WATER AND GROUNDWATER

Indicate the surface water present on and or adjacent to the site and alternative sites (highlight the appropriate boxes)?

Perennial River	YES	NO	UNSURE
Non-Perennial River	YES	NO	UNSURE
Permanent Wetland	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE
Estuarine / Lagoonal wetland	YES	NO	UNSURE

Please provide a description.

No Freshwater Ecosystem Priority Area (FEPA) and no freshwater ecological features is present on the proposed mining area. The mining area is not located within 32m of any natural drainage lines/water courses or wetlands. A non-perennial watercourse lies ± 250 m west of the proposed site.

Source: CapeFarmMapper 17/09/2026

Aquifer Type and Yield

Classification: Fractured 0.1 - 0.5 l/s

Aquifer Classification

Classification: Minor

Depth to Groundwater

Depth (mbgl): 10.93

BIODIVERSITY

Highlight the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category).

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	The proposed mining area is not mapped as an ESA or CBA according to Western Cape Biodiversity Spatial Plan. The site has been completely transformed by historical and ongoing agricultural cultivation.

Highlight and describe the habitat condition on site.

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing/harvesting regimes etc.)
Natural	0%	The site has been completely transformed by historical and ongoing agricultural cultivation.
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	
Degraded (includes areas heavily invaded by alien plants)	0%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc.)	100%	

Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems		
Ecosystem threat status as per the	Critical	Wetland (including rivers, depressions, channelled	Estuary	Coastline
	Endangered			

National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Vulnerable	and unchannelled wetlands, flats, seeps pans, and artificial wetlands)						
	Least/Not Threatened							
		YES	NO	UNSURE	YES	NO	YES	NO

Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The site has been completely transformed by historical and ongoing agricultural cultivation with no remaining indigenous or natural vegetation or aquatic features.

(a) Environmental and current land use map.

(Show all environmental, and current land use features)

Refer to 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).

Impacts that may result from mining activities proposed operational phase (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the remaining proposed mining operational phase.

POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS

Nature of impact: Increased dust levels
Discussion: Excavation activities and material hauling may create an increase in dust levels. When the topsoil is removed there may be an increase in windblown dust due to un-stabilised soil.
Cumulative impacts: The potential for dust nuisance due to vegetation clearing and mining activities such as truck movements and the crushing plant is not expected to be more significant than the potential dust nuisance that is created during the ploughing of agricultural land; and it is not anticipated that the impact will be high if mitigation measures are implemented.

Mitigation:

- Reduce drop height of material to a minimum.
- Area will be mined in phases to reduce the barren areas.
- Temporarily halt material handling in extreme windy conditions.
- Use non-potable water to dampen bare soil areas if required to mitigate windblown dust.
- A speed limit of 30km/hour will be displayed and enforced through a fining system.
- All vehicle drivers entering the site will be informed of the speed limit.
- Materials are crushed with water at the crushing plant to avoid excessive dust produced at crushing plant.
- The requirement of additional dust suppression measures to be implemented must be determined through a dust monitoring programme or fugitive dust control plan to limit the emission of particulate matter.
- The proposed mining operation will practice dust fall out monitoring and management programme to ensure that potential health issues as a result of dust fall out are detected and immediately corrected.

	Alternative 1		No Go option
	Without Mitigation	With Mitigation	
Extent	2	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	5	2	
Magnitude	2	2	
Probability	4	2	
Significance	36-Medium	10-Low	
Status	Medium negative significance if not mitigated	Low negative significance if mitigated	
Reversibility	100%		
Irreplaceable loss of resources	2- Partly Replaceable		
Can impacts be mitigated?	2-Partly		

Nature of potential impact:

Potential erosion of agricultural land due to proposed mining activities

Discussion:

Proposed mining activities may cause erosion on the site and surrounds due to excavations causing steep slopes, which in turn may lead to increase in surface water runoff speed. Therefore site storm water management measures must be implemented, to direct storm water runoff away from the proposed quarry but still draining into lower lying areas as per current status quo.

Cumulative impacts:

Erosion of the excavation areas, topsoil and overburden storage areas, roads and surrounding environments.

Mitigation:

- Visually inspect mining area boundaries, exposed surfaces, overburden and topsoil stockpiles for signs of erosion.
- If erosion channels are discovered the mine must determine the cause of erosion and implement erosion rectification and prevention measures to rehabilitate eroded areas and prevent future erosion.
- Rehabilitate and reinstate engineered constructed contours as soon as a phase is complete.
- Undertake mining activities only in identified and specifically demarcated areas as proposed and in phases. Rehabilitating/filling excavations as soon as possible to prevent accumulation of stormwater.
- Spoil (top soil and overburden) should be stockpiled in a manner that it does not cause erosion or drain to a water resource or water course in times of high precipitation.
- Runoff from upland areas will be mitigated through the creation of drainage channels and placement of overburden materials along the southern borders of the site to divert stormwater runoff around the quarry areas and into its natural flow path.

- Implement erosion and storm water runoff management measures as according to EMP requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds; and any storm water runoff from the mining areas and topsoil and overburden storage areas.
- Mine area must be rehabilitated and planted with agricultural crop after mine is completed to stabilise the soil.
- Monitor the area for signs of erosion during rehabilitation and rectify immediately if detected.

Alternative 1			No Go option
	Without Mitigation	With Mitigation	
Extent	2	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	3	1	
Magnitude	6	2	
Probability	4	2	
Significance	44 – Medium	8 - Low	
Status	Medium Negative Significance without Mitigation	Low negative significance if mitigated	
Reversibility	100% Reversible		
Irreplaceable loss of resources	2-Partial loss of resources but can be rehabilitated		
Can impacts be mitigated?	1 – Can be completely mitigated		

Nature of impact:

Emissions

Discussion:

Vehicles and machinery on the site will produce tailpipe emissions.

Cumulative impacts:

This will contribute to atmospheric pollution.

Mitigation:

- Vehicles and machinery will be maintained to minimize emissions. A log book will be filled in to keep a record of all maintenance problems encountered and mitigation measures implemented to resolve the problem.
- Vehicles and machinery emitting excessive emissions will be stopped immediately and not allowed to operate until the necessary repairs have been made.

Alternative 1			No Go option
	Without Mitigation	With Mitigation	
Extent	2	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	2	2	
Magnitude	6	2	
Probability	2	2	
Significance	20 – Low	10 - Low	
Status	Low negative significance if not mitigated	Low negative significance if mitigated	
Reversibility	0%		
Irreplaceable loss of resources	1-No		
Can impacts be mitigated?	2-Partly		

Nature of impact:

Mining activities can result in increased sediment loads in water resources.

Discussion:

Mining activities can impact negatively upon the surface and groundwater resources on or adjacent to

the sites.			
Cumulative impacts: Loss or pollution of surface and ground water resources. This will lead to higher sediment and solute content of water leaving the area, thus lowering water quality in the area.			
Mitigation: - Restrict mining areas only to approved footprint and demarcate the area before mining commences, maintain demarcation throughout operational phase. - Demarcation method to be approved by an Environmental Control Officer (ECO). - Minimize sediment load in the water by stripping a maximum of 10 meters ahead of the mining face and only moving the material once it needs to be processed or onto the intended topsoil stockpiles on the edge of all current and future mining areas. - Monitor for erosion. Should erosion be present, undertake mitigation measures to rectify and prevent further erosion. - All roads need to be maintained and monitored. Visible signs of possible erosion must be immediately rehabilitated. - All storm water falling outside the mine property must be diverted around the mine. This forms part of the Storm Water Management Plan as part of the EMPr			
Alternative 1		No Go option	
	Without Mitigation	With Mitigation	
Extent	2	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	2	1	
Magnitude	6	2	
Probability	4	2	
Significance	40 - Medium	8 - Low	
Status	Medium negative significance if not mitigated	Low negative significance if mitigated	
Reversibility	100%		
Irreplaceable loss of resources	1-Will not be lost if mitigation measures are implemented		
Can impacts be mitigated?	1 – Can be completely mitigated		

Nature of potential impact: Impact on water resources i.e. groundwater, secondary drainage lines etc.	
Discussion: No significant water resources i.e. low groundwater table, rivers, wetland etc. has been identified on the site or immediate surround potentially to be impacted upon by the proposed mining activities.	
Cumulative impacts: Disturbance and transformation of adjacent drainage lines and or degradations of groundwater resources during mining activities.	
Mitigation: - Undertake mining activities only in identified and specifically demarcated areas as proposed. - Storm water and erosion control as per an Environmental Management Programme (EMP) must be conducted. - No disturbance should be allowed within any natural wetlands or drainage lines. This includes no dumping of fill, no roads, and all forms of temporary disturbance. - No drainage line or wetland areas edges may be disturbed or impacted upon by the proposed activities. - If any groundwater is reached during the proposed mining activities on site, mining of that area must immediately be ceased, the Environmental Control Officer must be informed and the area must be rehabilitated to prevent any potential detrimental impact on the groundwater resource. - All measures should be put in place to ensure proper post-mining rehabilitation of affected areas, to as close to the original condition as possible. - No pollution of surface water or ground water resources may occur due to activities on the property. Oil spillages from vehicles on site must be controlled to prevent pollution of water	

resources.			
Alternative 1			No Go option
	Without Mitigation	With Mitigation	
Extent	2	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	5	1	
Magnitude	10	2	
Probability	5	2	
Significance	85 - High	8 - Low	
Status	High Negative Significance without Mitigation	Low negative significance if mitigated	
Reversibility	100% Reversible		
Irreplaceable loss of resources	1-Will not be lost if mitigation measures are implemented		
Can impacts be mitigated?	1 – Can be completely mitigated		

Nature of impact: The trapping of all storm water within excavations on the mine area			
Discussion: The trapping of all storm water within excavations on the property for process purposes may reduce the amount of water available to downstream users. The possible impacts of lack of storm water management include the reduction in available catchment water for downstream users; and the possible mingling of clean water with muddy mine water.			
Cumulative impacts: The reduction in available catchment water for downstream users.			
Mitigation: • All storm water falling outside the mine property must be diverted around the mine into its natural flow course. • No stormwater may be trapped/dammed on the mining site. • If damming of water occurs within the quarry areas this water must be pumped out to the lower lying areas along its natural flow course, without causing erosion.			
Alternative 1			No Go option
	Without Mitigation	With Mitigation	
Extent	2	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	2	2	
Magnitude	6	2	
Probability	4	2	
Significance	40 - Medium	10 - Low	
Status	Medium negative significance if not mitigated	Low negative significance if mitigated	
Reversibility	100%		
Irreplaceable loss of resources	1-Will not be lost if mitigation measures are implemented		
Can impacts be mitigated?	1 – Can be completely mitigated		

Nature of impact: Effluent from toilets and litter			
Discussion: The possible negative impacts associated with toilets are due to accidents. A leaking toilet or overflowing sewage tank could cause soil pollution, as well as ground and surface water pollution in storm events. Litter/waste produced on site must also be managed in a appropriated manner.			

Cumulative impacts:

Only in extreme cases where effluent leaks occur will environmental pollution occur. Litter will cause nuisance and pollution if not removed daily.

Mitigation:

- The toilets are serviced when needed and emptied when almost full.
- If a leak occurs the correct emergency procedure is to be followed (see EMP).
- Litter will be collected and removed from site by the operator on a daily basis.
- Chemical toilets must be placed within previously disturbed mining areas and not within indigenous vegetation areas not to be mined.).
- Domestic litter will be collected and removed from site by the operator on a weekly basis.
- Proper secured waste bins must be provided on site for the staff and emptied before full.

Alternative 1		No Go option
	Without Mitigation	With Mitigation
Extent	2	1
Duration	2	1
Magnitude	6	0
Probability	3	0
Significance	30-Medium	-
Status	Medium negative significance if not mitigated	Low negative significance if mitigated
Reversibility	100%	
Irreplaceable loss of resources	1-Will not be lost if mitigation measures are implemented	
Can impacts be mitigated?	1 – Can be completely mitigated	

Not Applicable (No mining activities to take place during the No-Go Alternative)

Nature of impact:

Hydrocarbon spill

Discussion:

There is the potential for hydrocarbon to spill or leak from the following sources: Haul vehicles, excavator, front end loader, pickup trucks and during minor service activities undertaken on the site.

Cumulative impacts:

Pollution of soil, potential pollution of surface water run-off, potential pollution of ground water if the spill is not cleaned up. The significance of the associated impacts will be dependent on the scale of the spill.

Mitigation:

- Any mine vehicle which is leaking hydrocarbons (e.g. petrol, diesel or oil) will be serviced in a concreted workshop to repair the leak. If it is not possible to repair the leak immediately, a drip tray will be placed under the leak to trap any spillages. The content of the drip trays will be decanted into an old oil drum for removal from the site to a hazardous waste handling facility.
- Hydrocarbon spillages are to be cleaned up immediately.
- The mine will also maintain a store of suitable absorbent material, suitable bioremediation substance and a spill kit. All incidences/ spillages are to be recorded in an incident log book. Contaminated soil must go to Vissershok Hazardous Landfill site.

Alternative 1		No Go option
	Without Mitigation	With Mitigation
Extent	2	1
Duration	2	1
Magnitude	6	2
Probability	3	2
Significance	30-Medium	8-Low
Status	Medium negative significance if not mitigated	Low negative significance if mitigated
Reversibility	100% Reversible	
Irreplaceable	1-Will not be lost if mitigated	

Not Applicable (No mining activities to take place during the No-Go Alternative)

loss of resources		
Can impacts be mitigated?	1 – Can be completely mitigated	

Nature of impact: Fire			
Discussion: There is the potential for fire to occur on the site. Veld fires can occur across the vegetated areas of the property.			
Cumulative impacts: Negative impacts associated with fires include: smoke emission, loss of flora and fauna, loss of crops, hazard to human life and health, damage to infrastructure			
Mitigation: - All employees will be trained on fire safety and on how to reduce the probability of a fire spreading out of control. - Anyone who observes a fire must report it immediately to the fire protection agency/ fire brigade and their supervisor/ mine manager. - Vehicles must be parked in an area with no vegetation if a fire occurs. - Firefighting equipment i.e. extinguishers must be readily available at the site, clearly visible and in a good working order. - No smoking will be allowed on site.			
Alternative 1		No Go option	
	Without Mitigation	With Mitigation	
Extent	3	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	1	1	
Magnitude	8	2	
Probability	3	2	
Significance	36- Medium	8 - Low	
Status	Medium negative significance if not mitigated	Low negative significance if mitigated	
Reversibility	100%		
Irreplaceable loss of resources	1-Will not be lost if mitigation measures are implemented		
Can impacts be mitigated?	1 – Can be completely mitigated		

POTENTIAL IMPACTS ON BIOLOGICAL ASPECTS

Nature of impact: Introduction and spread of declared alien vegetation	
Discussion: Declared weeds may be transported onto the site and spread to surrounding areas. Disturbance to existing alien vegetation may also lead to additional alien vegetation on the site and surrounds. This may have management and cost impacts on the property. Without monitoring and control this could become problematic.	
Cumulative impacts: Loss of potential biodiversity and ecosystems due to the spread of invader plants.	
Mitigation: Alien invasive and weed vegetation monitoring and removal must be undertaken annually during mining and for at least a year after mining activities have ceased on disturbed areas or until the landowner starts with the annual cultivation activities on the affected land. This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology depending on the contract agreement that the applicant has with the landowner. All invasive alien	

species as listed by the Conservation of Agricultural Resources Act (CARA) must be removed during these surveys. Declared weeds and aliens must be removed before annual seeding.

- Only use topsoil as derived and conserved from the proposed mining area to be rehabilitated after mining activities have ceased on the property.
- Every landowner has a legal obligation in terms of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) and the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) to control and eradicate alien invasive vegetation on his/her property

Alternative 1			No Go option
	Without Mitigation	With Mitigation	
Extent	2	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	5	1	
Magnitude	6	2	
Probability	4	2	
Significance	52- Medium	8-Low	
Status	Medium negative significance if not mitigated	Low negative significance if mitigated	
Reversibility	100%		
Irreplaceable loss of resources	1-Will not be lost		
Can impacts be mitigated?	1-Yes, by implementing an alien eradication plan and continuing monitoring of alien regrowth		

Nature of impact: Impact on the naturally occurring fauna and avifauna present in the area
Discussion: Vegetation will be removed if the proposed development is approved. This will result in potential loss of habitats and possible impact on animal species No animal species of conservation concern were recorded or observed at the time of the survey and is not likely to occur on proposed site. No dynamic ecological processes were identified on the proposed site and within the broader landscape the ecological processes occurring on the higher lying area is not expected to be significantly impacted upon by the proposed mining activities if proposed mitigation measures are adhered to.
Cumulative impacts: Loss of indigenous fauna species habitat.

Mitigation:

- No clearance of any indigenous vegetation to take place.
- Clearly demarcated proposed mining areas before mining commences and maintain demarcation throughout active operational and rehabilitation phases.
- Where necessary steep slope stairs (terracing) must be created along the quarry edges to slow down water runoff and prevent erosion.
- Rehabilitation must take place on an ongoing basis as mining proceeds. As the quarry advances along strike, the overburden is progressively replaced to backfill the excavation. The backfilled area will be contoured and sloped according to existing surrounding contours and slopes to prevent erosion and damming of stormwater. Prior to replacing topsoil the surface area must be scarified (if necessary). After contouring has been completed the stored topsoil material must be spread over the backfilled area, leaving no depressions in the landscape. The topsoil must not be compacted after spreading. Only topsoil as derived and conserved from the proposed mining area must be used to rehabilitate the impacted mining areas.
- Each 1ha phased mining area may not remain open for more than a year before rehabilitation must commence. In other words topsoil may not be stored for longer than a year before it is used for rehabilitation of the completed 1ha mining phase.
- Should any additional topsoil be required for rehabilitation purposes, it must be from neighbouring properties or alternatively sterilized accordingly. This is to ensure that any imported topsoil is free from soil pathogens, to prevent introduction of new pathogens to the region.
- No waste pollution may occur due to the mining activities and all waste must be contained and disposed of at the municipal landfill site on a weekly basis.
- Mining activities must be limited to identified and specifically demarcated 5ha area.
- No trapping, poisoning or removal of any indigenous fauna or avifauna species may be conducted on the property.
- Remove and conserve topsoil layer and overburden material for rehabilitation after mining activities have ceased
- Invasive vegetation to be removed during mining activities to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation.
- No disturbance should be allowed within the remaining indigenous vegetation areas outside of the proposed 5ha area. This includes no dumping of fill, no new roads, and all forms of temporary disturbance.
- No natural vegetation areas edges may be cleared or impacted upon by the proposed mining activities.
- Implement erosion and storm water runoff management measures to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds.
- Backfill mined areas as soon as possible after mining completion with onsite excavated material.
- Only use topsoil and excavated material as derived and conserved from the proposed mining site to backfill and rehabilitate impacted areas.
- Monitor rehabilitated areas for signs of erosion for at least a year after rehabilitation and implement erosion rectification and prevention measures as and if required.
- Alien invasive and weed vegetation monitoring and removal must be undertaken for at least a year after mining activities have ceased and the site has been rehabilitated This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology.

	Alternative 1		No Go option
	Without Mitigation	With Mitigation	
Extent	2	2	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	3	3	
Magnitude	1	1	
Probability	4	2	
Significance	24 - Low	12- Low	
Status	Low negative significance if not mitigated	Low negative significance if mitigated	
Reversibility	100%		
Irreplaceable loss of resources	1-Will not be lost		
Can impacts be	2-Yes, partly		

mitigated?		
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Nature of impact: Impact of proposed mining activities on indigenous vegetation			
Discussion: No indigenous vegetation remains within the proposed mining area nor its immediate surrounds.			
Cumulative impacts: Loss of indigenous plant species and associated indigenous habitats if mining is not confined to proposed cultivated agricultural lands.			
Mitigation: • Mining activities must be limited to identified and specifically demarcated 5ha area. • Remove and conserve topsoil layer and overburden material for rehabilitation after mining activities have ceased. • Invasive vegetation to be removed during mining activities to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation. • No disturbance should be allowed within the remaining indigenous vegetation areas outside of the proposed 5ha area. This includes no dumping of fill, no new roads, and all forms of temporary disturbance. • No natural vegetation areas edges may be cleared or impacted upon by the proposed mining activities. • Implement erosion and storm water runoff management measures to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds. • Backfill mined areas as soon as possible after mining completion with onsite excavated material. • Only use topsoil and excavated material as derived and conserved from the proposed mining site to backfill and rehabilitate impacted areas. • Monitor rehabilitated areas for signs of erosion for at least a year after rehabilitation and implement erosion rectification and prevention measures as and if required. • Alien invasive and weed vegetation monitoring and removal must be undertaken for at least a year after mining activities have ceased and the site has been rehabilitated This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology.			
Alternative 1		No Go option	
	Without Mitigation	With Mitigation	
Extent	2	2	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	3	3	
Magnitude	1	1	
Probability	4	4	
Significance	24 - Low	24 - Low	
Status	Low negative significance if mitigated	Low negative significance if mitigated	
Reversibility	100%		
Irreplaceable loss of resources	2 - Resource may be partly destroyed (PR)		
Can impacts be mitigated?	2 – Partly mitigatable		

POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS

Nature of impact: Increased and sustained job opportunities	
Discussion: Employment of local labour will be ensured if the mining permit is approved.	
Cumulative impacts: Employment of local labour will be ensured if the mining permit is approved	
Mitigation: Implement proposed mining activities	
Alternative 1	No Go option

	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	High Positive – Jobs for local communities		High Negative – Not authorising proposed mining expansion will lead to no additional job opportunities created during mining activities,	
Duration				
Magnitude				
Probability				
Significance				
Status				
Reversibility				
Irreplaceable loss of resources				
Can impacts be mitigated?				

Nature of impact:

Increased traffic due to the mining activities requiring various vehicles to come onto and leave the site.

Discussion:

The existing farm road access intersecting with Main Road 174 (R302) will be used as a haul road for the proposed sand and gravel mine.

The estimated volume of sand to be mined, based on an average depth of 1.0 meter, is approximately 40 000 cubic meters. The trucks designated for this operation will on average have a capacity of 15 cubic meters (equivalent to 30 tonnes). This mining activity is expected to generate around 6,660 truck trips, with an even distribution of 50% inbound and 50% outbound trips. Assuming that the materials are mined out within three and a half years, it would generate 3 truckloads of material daily (3 inbound and 3 outbound trips)

Cumulative impacts:

The existing farm operations as well as the proposed sand and gravel mine have insignificant trip generation. Main Road 174 background traffic flow is moderate and the cumulative farm and mining traffic impact is negligible..

Mitigation:

- A speed limit of 30km/hour will be displayed and enforced through a fining system on site. All vehicle drivers entering the site will be informed of the speed limit.
- All drivers to adhere to road safety regulations and have valid drivers' licenses.
- Hard surfaced the last 30 m of the farm road/proposed haul road approach to Main Road 174 (R302) , to reduce materials carry onto Main Road 174 (R302).
- Locate the farm/haul road access gate 30 m from Main Road 174 (R302) road edge or ensure that the gate remains open during mining operations.

	Alternative 1		No Go option
	Without Mitigation	With Mitigation	
Extent	3	3	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	2	2	
Magnitude	2	2	
Probability	3	3	
Significance	21- Low	21- Low	
Status	Low negative significance if mitigated	Low negative significance if mitigated	
Reversibility	100%		
Irreplaceable loss of resources	1-Will not be lost		
Can impacts be mitigated?	2- Can be partly mitigated		

Nature of impact:

Mining of agricultural land

Discussion:

The proposed mining will not significantly reduce the future agricultural production potential of the site, if effective rehabilitation is implemented. The proposed mine is therefore acceptable, and, from an agricultural impact point of view, it is recommended that it be approved.

Cumulative impacts:

Temporary loss of agricultural land for cultivation and livestock grazing use.

Mitigation:

The following is the sequence of recommended rehabilitation steps:

- During mining, the outflow of run-off water from the mining excavation must be controlled to prevent any down-slope erosion. This must be done by way of the construction of temporary banks and ditches that will safely disperse run-off water. These should be in place above the mining area, to minimise run-off into the excavation and at any points where overflow out of the excavation might occur.
- The upper 50 cm of soil, even if it contains gravel, must first be stripped and stockpiled before mining.
- Topsoil is a valuable and essential resource for rehabilitation, and it should 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 should be such that topsoil is stockpiled for the minimum possible time by rehabilitating different mining blocks progressively as the mining process continues.
- Topsoil stockpiles should be protected against losses by water and wind erosion. Stockpiles should be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants on the stockpiles will help to prevent erosion. Stockpiles should be no more than 2 metres high.
- To ensure that soil drainage is sufficiently maintained, it is important that the mining excavation, including along its bottom edge, remains free draining after rehabilitation and does not form a depression.
- After mining, any steep slopes, along the edges of the mining excavation or within it, must be reduced to a minimum and profiled to blend with the surrounding topography.
- The stockpiled topsoil must then be evenly spread across the entire mining area. The depth should be monitored during spreading to ensure that coverage is adequate and even. A slope must be maintained so that ponding of water does not occur on the surface.
- A cover crop must be planted and established immediately after spreading of topsoil, to stabilise the soil and protect it from erosion. The cover crop should be fertilized for optimum growth, and any soil chemical deficiencies should be corrected, based on a chemical analysis of the re-spread soil. It is important that rehabilitation is taken up to the point of cover crop stabilisation. Rehabilitation cannot be considered to be complete until the first cover crop is well established.
- The rehabilitated area must be monitored for erosion, and appropriately stabilised if any erosion occurs.
- On-going alien vegetation control must keep the area free of alien vegetation after mining.

Mine management must be held accountable for well managed and effective implementation of all the recommended rehabilitation steps above. The specific, measurable rehabilitation outcomes against which the effectiveness of completed rehabilitation must be measured are:

- that the topography and surface has been sufficiently smoothed without steep excavation edges to allow for cultivation;
- that topsoil has been spread on the surface;
- that there is a potential rooting depth of at least 50 cm of soil that is suitable for root growth above any existing depth limitation, across the entire mining area;
- that there are no non free-draining depressions across the surface and that the depth of mining has not created an effective sub-surface dam, that is lower than the low point for drainage out of the mining area, and therefore, that no ponding of water occurs on the surface of the mined area;
- that there is no visible erosion across the area, or down-slope of it as a result of mining, and that no part of the area has been left unacceptably vulnerable to erosion;
- that a successful cover crop has been established across the entire area.
- that there is no invasive alien vegetation within the mining area.

	Alternative 1		No Go option
	Without Mitigation	With Mitigation	
Extent	1	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	2	2	
Magnitude	2	2	

Probability	5	5	
Significance	25 - Low	25 - Low	
Status	Low Negative significance if mitigated	Low Negative significance if mitigated	
Reversibility	100% Reversible		
Irreplaceable loss of resources	1-Will not be lost if mitigated		
Can impacts be mitigated?	2 – Can be partly mitigated		

POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS

Nature of impact: The potential impact of the proposed development on archaeological, paleontological and heritage remains			
Discussion: No heritage characteristic on site. Notice of Intent to Develop has been submitted to Heritage Western Cape who has confirmed no HIA required. If burials, fossils or other historical material are on site then potentially these could be lost.			
Cumulative impacts: Loss of burials, fossils or other historical material.			
Mitigation: Should any burials, fossils or other historical material be encountered during excavations, work must cease immediately and HWC must be contacted.			
Alternative 1			No Go option
	Without Mitigation	With Mitigation	
Extent	1	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	5	1	
Magnitude	2	2	
Probability	2	2	
Significance	16-Low	8 - Low	
Status	Low negative significance if not mitigated	Low negative significance if mitigated	
Reversibility	0% reversibility – once the historical features are destroyed, it cannot be recovered.		
Irreplaceable loss of resources	3- Yes, completely irreplaceable		
Can impacts be mitigated?	1- Can be completely mitigated		

POTENTIAL IMPACTS OF NOISE

Nature of impact: Noise due to mining machinery, trucks and people on site.
Discussion: No activities that may generate noise levels above the legal rural limit in terms of the Environmental Conservation Act, Western Cape Noise regulations will be conducted.
Cumulative impacts: Noise due to mining activities may cause a nuisance to adjacent landowners.

Mitigation:

- No activities that may generate noise levels above the legal limit in terms of the Environmental Conservation Act, Western Cape Noise regulations will be conducted.
- Machinery and vehicles should be regularly maintained to prevent excessive noise.
- All machinery and work activities must adhere to the requirements of the noise regulations.

Alternative 1		No Go option
	Without Mitigation	With Mitigation
Extent	2	2
Duration	2	2
Magnitude	2	2
Probability	1	1
Significance	6- Low	6-Low
Status	Low negative significance if not mitigated	Low negative significance if mitigated
Reversibility	This will not be a long term impact nor will it have an impact on the natural processes. It is thus 100% reversible.	
Irreplaceable loss of resources	1- No resources will be lost.	
Can impacts be mitigated?	1- Can be completely mitigated	

Not Applicable (No mining activities to take place during the No-Go Alternative)

POTENTIAL VISUAL IMPACTS

Nature of impact:

A negative visual impact due to the creation of excavation pits.

Discussion:

Mining activities will be conducted in phases with ongoing rehabilitation, mining activities will also be temporary hence it is not expected that mining activities will have a significant visual impact.

Cumulative impacts:

Unightly mine site.

Mitigation:

- Proposed mining activities must be limited to development footprint site.
- Rehabilitate the site concurrent with operational mining process.

Alternative 1		No Go option
	Without Mitigation	With Mitigation
Extent	2	1
Duration	2	1
Magnitude	6	4
Probability	5	4
Significance	50- Medium	24 - Low
Status	Medium negative significance if not mitigated	Low negative significance if mitigated
Reversibility	This will not be a long term impact nor will it have an impact on the natural processes. It is thus 100% reversible.	
Irreplaceable loss of resources	1- No resources will be lost.	
Can impacts be mitigated?	1- Can be partially mitigated during operational phase and completely during rehabilitation phase	

Not Applicable (No mining activities to take place during the No-Go Alternative)

Impacts that may result from the decommissioning/closure/rehabilitation phase (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning/closure/rehabilitation phase.

Nature of impact: Soil erosion.			
Discussion: Decommissioning (i.e. the spreading of topsoil back over the site) could lead to soil erosion can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should rains fall.			
Cumulative impacts: Exposing soil may lead to erosion if not mitigated.			
Mitigation: • Mine area must be rehabilitated and immediately after mining is completed. • A cover crop must be planted before the on set of the first rainy season to promote stabilisation of the soil. • Contours and slopes must reinstate and maintained as according to surrounding topography. • The site must be monitored regularly (at least 6 monthly and after heavy rains) for at least two years after rehabilitation and all signs of erosion immediately rectified and alien vegetation removed to prevent potential siltation, erosion and alien encroachment. • When no evidence of erosion and alien vegetation encroachment are visible and successful natural succession/rehabilitation of indigenous vegetation is observed the rehabilitated areas can be considered as successfully rehabilitated.			
Alternative 1			No Go option
	Without Mitigation	With Mitigation	
Extent	3	1	Not Applicable (No mining activities to take place during the No-Go Alternative)
Duration	5	1	
Magnitude	6	2	
Probability	4	2	
Significance	56 – Medium	8 – Low	
Status	Medium negative significance if not mitigated	Low negative significance if mitigated	
Reversibility	100% Partly Reversible		
Irreplaceable loss of resources	2-Partial loss of resources but can be rehabilitated		
Can impacts be mitigated?	1 – Can be completely mitigated		

Nature of impact: Introduction of alien plant species during rehabilitation.	
Discussion: Indirect impacts occur mostly during the rehabilitation phase and in this case the nature would vary from the introduction of alien vegetation, to partial disruption of ecological processes due to the effects of the alien species. The extent of the indirect impact in this case is local	
Cumulative impacts: Is this case the introduction of alien vegetation during rehabilitation may lead to infestation of surrounding remaining natural areas resulting in disruption and destruction of ecological processes.	

Mitigation:

- Only use topsoil as derived and conserved from the proposed mining area to be rehabilitated after mining activities have ceased on the property.
- Alien invasive and weed vegetation monitoring and removal must be undertaken for at least two years after mining activities have ceased on disturbed and rehabilitated areas. This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology. All invasive alien species as listed by the Conservation of Agricultural Resources Act (CARA) must be removed during these surveys. Declared weeds and aliens must be removed before annual seeding.
- Note that the landowner will be responsible for ongoing CARA listed alien vegetation management/removal on the rehabilitated mining site after closure certificate has been obtained and is in any case responsible for alien vegetation management on the whole property as per legislation requirements.

Alternative 1		No Go option
	Without Mitigation	With Mitigation
Extent	3	1
Duration	5	1
Magnitude	6	2
Probability	4	2
Significance	56- Medium	8-Low
Status	Medium negative significance if not mitigated	Low negative significance if mitigated
Reversibility	100%	
Irreplaceable loss of resources	1-Will not be lost	
Can impacts be mitigated?	1-Yes, by implementing an alien eradication plan and continuing monitoring of alien regrowth	

Not Applicable (No mining activities to take place during the No-Go Alternative)

Nature of impact:

Loss of socio-economic benefits to the mine employees and local economy when mine closes.

Discussion:

With the decommissioning and closure of the mine the mine employees may potentially loose their jobs and economic opportunities presented by the mine will also be lost i.e. source of sand and gravel within the Swartland areas.

Cumulative impacts:

Loss of socio-economic benefits to the mine employees and local economy when mine closes

Mitigation:

The mining company must assist any employees who may potentially loose their job once mining is completed to find a new job as far as possible.

Alternative 1		No Go option
	Without Mitigation	With Mitigation
Extent	3	-
Duration	5	-
Magnitude	10	1
Probability	5	1
Significance	90-High	1-Low
Status	High significance if not mitigated	No significance if mitigated
Reversibility	100% reversibility	
Irreplaceable loss of resources	-	
Can impacts be mitigated?	1 – Can be completely mitigated	

Not Applicable (No mining activities to take place during the No-Go Alternative)

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).

ASSESSMENT METHODOLOGY

This section outlines the methodology used to assess the significance of the potential environmental impacts. For each impact, the EXTENT (spatial scale), MAGNITUDE (size or degree scale) and DURATION (time scale) are used to ascertain the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the EMP represents the full range of plausible and pragmatic measures *but does not necessarily imply that they should or will all be implemented*.

Assessment criteria for the evaluation of impacts

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial influence of impact	Regional	Beyond a 20 km radius of the site
	Local	Within a 20 km radius of the centre of the site
	Site specific	On site or within 100 m of the site
Magnitude of impact (at the indicated spatial scale)	High	Natural and/ or social functions and/ or processes are <i>severely</i> altered
	Medium	Natural and/ or social functions and/ or processes are <i>notably</i> altered
	Low	Natural and/ or social functions and/ or processes are <i>slightly</i> altered
	Very Low	Natural and/ or social functions and/ or processes are <i>negligibly</i> altered
	Zero	Natural and/ or social functions and/ or processes remain <i>unaltered</i>
Duration of impact	Mining period Medium Term	Up to 60 months Up to 10 years after mining
	Long Term	More than 10 years after mining

The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. The means of arriving at the different significance ratings is explained in the following table.

Definition of significance ratings

SIGNIFICANCE RATINGS	LEVEL OF CRITERIA REQUIRED
High	- High magnitude with a regional extent and long term duration - High magnitude with either a regional extent and medium term duration or a local extent and long term duration - Medium magnitude with a regional extent and long term duration

Medium	• High magnitude with a local extent and medium term duration • High magnitude with a regional extent and mining period or a site specific extent and long term duration • High magnitude with either a local extent and mining period duration or a site specific extent and medium term duration • Medium magnitude with any combination of extent and duration except site specific and mining period or regional and long term • Low magnitude with a regional extent and long term duration
Low	• High magnitude with a site specific extent and mining period duration • Medium magnitude with a site specific extent and mining period duration • Low magnitude with any combination of extent and duration except site specific and mining period or regional and long term • Very low magnitude with a regional extent and long term duration
Very low	• Low magnitude with a site specific extent and mining period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	• Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the PROBABILITY of this impact occurring as well as the CONFIDENCE in the assessment of the impact would be determined using the rating systems outlined in below respectively. It is important to note that the significance of an impact should always be considered in concert with the probability of that impact occurring.

Probability ratings		Criteria	
Definite		>95% chance of impact occurring.	
Probable		5 – 95% chance of impact occurring.	
Unlikely		<5% chance of impact occurring.	
Confidence ratings	Criteria		
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.		
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.		
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.		
Criteria	Description		
Nature	a description of what causes the effect, what will be affected, and how it will be affected.		
	Type	Score	Description
Extent (E)	None (No)	1	Footprint
	Site (S)	2	On site or within 100 m of the site
	Local (L)	3	Within a 20 km radius of the centre of the site
	Regional (R)	4	Beyond a 20 km radius of the site
	National (Na)	5	Crossing provincial boundaries or on a national / land wide scale
Duration (D)	Short term (S)	1	0 – 1 years
	Short to	2	2 – 5 years

	medium (S-M)		
	Medium term (M)	3	5 – 15 years
	Long term (L)	4	> 15 years
	Permanent(P)	5	Will not cease
Magnitude (M)	Small (S)	0	will have no effect on the environment
	Minor (Mi)	2	will not result in an impact on processes
	Low (L)	4	will cause a slight impact on processes
	Moderate (Mo)	6	processes continuing but in a modified way
	High (H)	8	processes are altered to the extent that they temporarily cease
	Very high (VH)	10	results in complete destruction of patterns and permanent cessation of processes.
Probability (P) the likelihood of the impact actually occurring. Probability is estimated on a scale, and a score assigned	Very improbable (VP)	1	probably will not happen
	Improbable (I)	2	some possibility, but low likelihood
	Probable (P)	3	distinct possibility
	Highly probable (HP)	4	most likely
	Definite (D)	5	impact will occur regardless of any prevention measures
Significance (S)	Determined through a synthesis of the characteristics described above: S = (E+D+M) x P Significance can be assessed as low, medium or high		
Low: < 30 points:	The impact would not have a direct influence on the decision to develop in the area		
Medium: 30 – 60 points:	The impact could influence the decision to develop in the area unless it is effectively mitigated		
High: > 60 points:	The impact must have an influence on the decision process to develop in the area		
No significance	When no impact will occur or the impact will not affect the environment		
Status	Positive (+)		Negative (-)
The degree to which the impact can be reversed	Completely reversible (R)	90-100%	The impact can be mostly to completely reversed with the implementation of the correct mitigation and rehabilitation measures.
	Partly reversible (PR)	6-89%	The impact can be partly reversed providing that mitigation measures as stipulated in the EMP are implemented and rehabilitation measures are undertaken
	Irreversible (IR)	0-5%	The impact cannot be reversed, regardless of the mitigation or rehabilitation measures taking place
The degree to which the impact may cause irreplaceable loss of resources	Resource will not be lost (R)	1	The resource will not be lost or destroyed provided that mitigation and rehabilitation measures as stipulated in the EMP are implemented
	Resource may be partly destroyed (PR)	2	Partial loss or destruction of the resources will occur even though all management and mitigation measures as stipulated in the EMP are implemented
	Resource cannot be	3	The resource cannot be replaced no matter which management or mitigation measures are implemented.

	replaced (IR)		
The degree to which the impact can be mitigated	Completely mitigatable (CM)	1	The impact can be completely mitigated providing that all management and mitigation measures as stipulated in the EMP are implemented
	Partly mitigatable (PM)	2	The impact cannot be completely mitigated even though all management and mitigation measures as stipulated in the EMP are implemented. Implementation of these measures will provide a measure of mitigatibility
	Un-mitigatable (UM)	3	The impact cannot be mitigated no matter which management or mitigation measures are implemented.

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)

Refer to Motivation for Alternative as per ix) below..

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 mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

Refer to Part A h) v) above for risk and impact assessments and associated mitigation measures proposed.

ix) Motivation where no alternative sites were considered.

Alternatives have been considered:

- **Location alternatives** – When a mineral is in demand, scouting of viable resources are required. It is important to note that in contrast to most other development, viable mineral locations are literally and figuratively “set in stone” based on the geology, mineral composition and geological and climatic processes such as those responsible for mineralization. Farm Doornfontein RE/4/814 is the preferred site alternative for the proposed sand and gravel mining because this is where viable sand and gravel deposits are known to occur as proven from previous mining operations conducted on the property and surrounds.
- **Activity alternatives**- The transformed nature of the proposed site favours the proposed mining and any other activities (development, residential, conservation) cannot be considered as viable alternatives in this context. The proposed temporary sand and gravel mining activities are the only feasible and reasonable activity considered for the specific area as proposed, because it is consistent with the nearby successful sand and gravel mining activities conducted and will allow for optimal economical use of the land during mining and restoring the land for agricultural cultivation to continue after mining has been completed. Therefore, no other feasible of reasonable activity alternatives exists and as such none was assessed. No activity alternatives other than the no go option were considered or assessed. The applicant identified this area for sand and gravel mining purposes. The method of mining is singular.

- **Layout alternatives** – Layout alternatives were considered and assessed. The buffer areas and sensitive environmental features such as sensitive indigenous vegetation, watercourses, agricultural infrastructure and sand/gravel mineral resources were taken into consideration when the mining area blocks and phases were developed for the mine operation plan. The proposed 5ha mining area as placed on the property avoids sensitive environmental features while ensuring it is located within an area with viable sand and gravel deposits for mining.
- **Technology alternatives** – The consideration of technological alternative is very limited in this application. Technological alternatives are limited to different mining techniques and equipment used. No technology alternatives exist. The method of mining is singular. Plant equipment (excavator and dump trucks) is used to remove and transport the minerals from the mine area. From the mine area the mined mineral resources will directly be transported off site to the buyer or it will be temporarily stockpiled within the mining area where it will be screened and mix to ensure an aggregate material that meets the buyers needs.
- **Operational alternatives** – The method of mining is singular and is described in the mine operations plan (EMP). Operational alternatives in terms of mining phase block sizes and layout and speed limit restrictions with maintenance actions prescribed on the gravel access road were assessed and included as mitigation measures. The operational alternatives, e.g. small mine blocks or phases inside the mine area will reduce the visual impact. The speed limit will ensure the safety of other road users and pedestrians and weekly grading and maintenance of the access road from the R302 will reduce dust impacts and will ensure that the gravel road is maintained during mining operations to at least its current state before mining activities commenced. The mining operator will first remove the topsoil layer (50cm) from block 1 and stockpile it on the to be mined block 2. The mineable sand and gravel will then be removed from block 1 by a front-end loader and loaded onto tip-trucks. When all mineable sand and gravel is removed from block 1, the stockpiled topsoil on block 2 is removed and immediately placed on block 1, leaving 500mm topsoil above the gravel / clay layer. Removal of topsoil from block 2 commences and is stockpiled on block 3, where after mining on block 3 commence. Concurrent mining and rehabilitation continue until the sand resource on the 6 mining blocks is removed. The mining process reduced the depth of the sand but, following the recommended rehabilitation measures, will leave a minimum of 500 mm of topsoil.
- **The No-Go/No-Mining Option-** The No-Go option will result in the site remaining as it is presently, cultivated agricultural land used for oats planing. As much as the no-go option will result in the protection of the current already transformed environment it will result in the sterilization of the available gravel and sand material should no other company mine the area. This would reduce gravel and sand resources available for i.e. road construction in the area. The no-go option would also result in no new employment opportunities. Mining activities will have negative environmental impacts and is not sustainable but upon completion of excavations with proper rehabilitation previous land uses like outs planting can be continued on the property. The overall potential impacts of the proposed gravel and sand mining activities on the environment and specifically on the agricultural potential of the affected areas has been assessed as low negative with the implementation of the proposed EMP requirements.

x) **Statement motivating the alternative development location within the overall site.**

The proposed preferred mining area is informed by the specialist's recommendations i.e. avoiding indigenous vegetation areas, freshwater ecological features, known gravel and sand resources, have existing access and avoid sensitive farming infrastructure.

The potential impacts identified will be adequately managed and effectively mitigated through the implementation of the recommendations outlined in the specialists studies as well as an site specific Environmental Management Programme (EMP).

- 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.)**

The impact assessment stage comprises a number of steps that collectively assess the manner in which the proposed activity will interact with elements of the physical, biological, cultural or human environment to produce impacts to resources/receptors. Enviro-EAP has developed a clearly defined impact assessment methodology. It is our belief that the impact assessment methodology is sound and adequate to assess the potential impacts and opportunities associated with the proposed mining operations. The methodology used to assess the potential impacts is outlined below.

1. Collect and assess site specific baseline environment information of the site and activity proposed. The description of the baseline environmental and socio-economic conditions provides information on receptors and resources that have been identified as having the potential to be significantly affected by the proposed project.
2. Identify potential alternatives.
3. Identify, assess and mitigate all potential impacts that the proposed activity alternatives may have on the site specific environmental and socio-economic conditions identified.
4. Conduct a public participation process throughout the impact assessment process to ensure that all public and key departments concerns are taken into consideration during the assessment process.

Refer to the table j) below which lists all the potential impacts identified, indicates each impact significance rating and proposed mitigation measures.

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).

NAME OF ACTIVITY 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.)	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts) (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc....)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Mining, 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
Excavations, loading, hauling, transport, roads and stockpiles	Increased dust levels	Natural environment, road users and nearby residents	Operational, Decommissioning/Closure/ Rehabilitation	36-Medium	• Reduce drop height of material to a minimum. • Area will be mined in phases to reduce the barren areas. • Temporarily halt material handling in extreme windy conditions. • Use non-potable water to dampen bare soil areas if required to mitigate windblown dust. • A speed limit of 30km/hour will be displayed and enforced through a fining system. • All vehicle drivers entering the site will be informed of the speed limit.	10-Low

					• Materials are crushed with water at the crushing plant to avoid excessive dust produced at crushing plant. • The requirement of additional dust suppression measures to be implemented must be determined through a dust monitoring programme or fugitive dust control plan to limit the emission of particulate matter. • The proposed mining operation will practice dust fall out monitoring and management programme to ensure that potential health issues as a result of dust fall out are detected and immediately corrected.	
Excavations, loading, hauling, transport and crushing plant.	Noise impacts	Noise due to mining machinery, trucks and people on site	Operational, Decommissioning/Closure/ Rehabilitation	6 - Low	• No activities that may generate noise levels above the legal limit in terms of the Environmental Conservation Act, Western Cape Noise regulations will be conducted. • Machinery and vehicles should be regularly maintained to prevent excessive noise. • All machinery and work	6 - Low

					activities must adhere to the requirements of the noise regulations.	
Removal of topsoil, excavations and road use.	Soil erosion can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should rains fall during mining. Loss of stockpiled topsoil and overburden material.	Natural and agricultural resources	Operational, Decommissioning/Closure/ Rehabilitation	44-Medium	• Visually inspect mining area boundaries, exposed surfaces, overburden and topsoil stockpiles for signs of erosion. • If erosion channels are discovered the mine must determine the cause of erosion and implement erosion rectification and prevention measures to rehabilitate eroded areas and prevent future erosion. • Rehabilitate and reinstate engineered constructed contours as soon as a phase is complete. • Undertake mining activities only in identified and specifically demarcated areas as proposed and in phases. Rehabilitating/filling excavations as soon as possible to prevent accumulation of stormwater. • Spoil (top soil and overburden) should be stockpiled in a manner that it does not cause erosion or drain to a water resource or water	8-Low

					course in times of high precipitation. • Runoff from upland areas will be mitigated through the creation of drainage channels and placement of overburden materials along the southern borders of the site to divert stormwater runoff around the quarry areas and into its natural flow path. • Implement erosion and storm water runoff management measures as according to EMP requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds; and any storm water runoff from the mining areas and topsoil and overburden storage areas. • Mine area must be rehabilitated and planted with agricultural crop immediately after mine is completed to stabilise the soil. • Monitor the area for signs of erosion during rehabilitation and rectify immediately if detected.	
Mine vehicles/machinery	Vehicles and	Natural	Operational,	20 -Low	• Vehicles and machinery	10 - Low

	machinery on the site will produce tailpipe emissions leading to air pollution	resources	Decommissioning/Closure/ Rehabilitation		will be maintained to minimize emissions. A log book will be filled in to keep a record of all maintenance problems encountered and mitigation measures implemented to resolve the problem. • Vehicles and machinery emitting excessive emissions will be stopped immediately and not allowed to operate until the necessary repairs have been done.	
Removal of topsoil and excavated areas.	Mining activities can result in increased sediment loads in water resources	Natural and agricultural resources	Operational, Decommissioning/Closure/ Rehabilitation	40 - Medium	• Restrict mining areas only to approved footprint and demarcate the area before mining commences, maintain demarcation throughout operational phase. • Demarcation method to be approved by an Environmental Control Officer (ECO). • Minimize sediment load in the water by stripping a maximum of 10 meters ahead of the mining face and only moving the material once it needs to be processed or onto the intended topsoil stockpiles on the edge of all current and future mining areas.	8 - Low

					• Monitor for erosion. Should erosion be present, undertake mitigation measures to rectify and prevent further erosion. • All roads need to be maintained and monitored. Visible signs of possible erosion must be immediately rehabilitated. • All storm water falling outside the mine property must be diverted around the mine. This forms part of the Storm Water Management Plan as part of the EMPr.	
All activities associated with proposed mining	Mining activities can impact on water resources i.e. groundwater, secondary drainage lines and dams.	Natural and agricultural resources	Operational, Decommissioning/Closure/Rehabilitation	85-High	• Undertake mining activities only in identified and specifically demarcated areas as proposed. • Storm water and erosion control as per an Environmental Management Programme (EMP) must be conducted. • No disturbance should be allowed within any natural wetlands or drainage lines. This includes no dumping of fill, no roads, and all forms of temporary disturbance. • No drainage line or wetland areas edges may	8-Low

					be disturbed or impacted upon by the proposed activities. • If any groundwater is reached during the proposed mining activities on site, mining of that area must immediately be ceased, the Environmental Control Officer must be informed and the area must be rehabilitated to prevent any potential detrimental impact on the groundwater resource. • All measures should be put in place to ensure proper post-mining rehabilitation of affected areas, to as close to the original condition as possible. • No pollution of surface water or ground water resources may occur due to activities on the property. Oil spillages from vehicles on site must be controlled to prevent pollution of water resources.	
Excavations	The trapping of storm water within excavations on the mine area	Natural and agricultural resources	Operational, Decommissioning/Closure/Rehabilitation	40 - Medium	• All storm water falling outside the mine property must be diverted around the mine into its natural flow course towards the N2 national road. • No stormwater may be trapped/dammed on the	10 - Low

					mining site. • If damming of water occurs within the quarry areas this water must be pumped out to the lower lying areas along its natural flow course, without causing erosion.	
Toilets and litter	Pollution and nuisance due to leakage etc.	Natural and agricultural resources	Operational, Decommissioning/Closure/Rehabilitation	30-Medium	• The toilets are serviced when needed and emptied when almost full. • If a leak occurs the correct emergency procedure is to be followed (see EMP). • Litter will be collected and removed from site by the operator on a daily basis. • Chemical toilets must be placed within previously disturbed mining areas and not within indigenous vegetation areas not to be mined.). • Domestic litter will be collected and removed from site by the operator on a weekly basis. • Proper secured waste bins must be provided on site for the staff and emptied before full.	0-No significance
Mine vehicles/machinery	Ground and/or water pollution and loss of natural and	Natural and agricultural resources	Operational, Decommissioning/Closure/Rehabilitation	30-Medium	• Any mine vehicle which is leaking hydrocarbons (e.g. petrol, diesel or oil) must be repaired	8 - Low

	agricultural resources due to a hydrocarbon spillage				immediately on an impermeable surface not allowing any fuel or oil to spill unto soil. If it is not possible to repair the leak immediately, a drip tray will be placed under the leak to trap any spillages. The content of the drip trays will be decanted into an old oil drum for removal from the site to a hazardous waste handling facility. • Hydrocarbon spillages are to be cleaned up immediately. • The mine will also maintain a store of suitable absorbent material, suitable bioremediation substance and a spill kit. All incidences/ spillages are to be recorded in an incident log book. Contaminated soil must go to Vissershok Hazardous Landfill site.	
Fuel storage areas, mining vehicles, staff smoking	Fire can cause habitat or crop destruction	Natural and agricultural resources	Operational, Decommissioning/Closure/ Rehabilitation	36- Medium	• All employees will be trained on fire safety and on how to reduce the probability of a fire spreading out of control. • Anyone who observes a fire must report it immediately to the fire protection agency/ fire brigade and their supervisor/ mine manager.	8 - Low

					• Vehicles must be parked in an area with no vegetation if a fire occurs. • Firefighting equipment i.e. extinguishers must be readily available at the site, clearly visible and in a good working order. • No smoking will be allowed on site.	
Topsoil and vegetation disturbance during excavations and transport of materials.	Alien vegetation encroachment	Natural and agricultural resources	Operational, Decommissioning/Closure/ Rehabilitation	52 - Medium	• Alien invasive and weed vegetation monitoring and removal must be undertaken annually during mining and for at least a year after mining activities have ceased on disturbed areas or until the landowner starts with the annual cultivation activities on the affected land. This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology depending on the contract agreement that the applicant has with the landowner. All invasive alien species as listed by the Conservation of Agricultural Resources Act (CARA) must be removed during these surveys. Declared weeds and aliens must	8 - Low

					be removed before annual seeding. • Only use topsoil as derived and conserved from the proposed mining area to be rehabilitated after mining activities have ceased on the property. • Every landowner has a legal obligation in terms of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) and the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) to control and eradicate alien invasive vegetation on his/her property	
Vegetation removal during excavations.	Natural fauna and avifauna habitat destruction	Natural resources	Operational, Decommissioning/Closure/Rehabilitation	24- Low	• No clearance of any indigenous vegetation to take place. • Clearly demarcated proposed mining areas before mining commences and maintain demarcation throughout active operational and rehabilitation phases. • Where necessary steep slope stairs (terracing) must be created along the quarry edges to slow down water runoff and prevent erosion. • Rehabilitation must take	12-Low

					place on an ongoing basis as mining proceeds. As the quarry advances along strike, the overburden is progressively replaced to backfill the excavation. The backfilled area will be contoured and sloped according to existing surrounding contours and slopes to prevent erosion and damming of stormwater. Prior to replacing topsoil the surface area must be scarified (if necessary). After contouring has been completed the stored topsoil material must be spread over the backfilled area, leaving no depressions in the landscape. The topsoil must not be compacted after spreading. Only topsoil as derived and conserved from the proposed mining area must be used to rehabilitate the impacted mining areas. • Each 1ha phased mining area may not remain open for more than a year before rehabilitation must commence. In other words topsoil may not be stored for longer than a year before it is used for rehabilitation of the completed 1ha mining phase. • Should any additional topsoil be required for	
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					rehabilitation purposes, it must be from neighbouring properties or alternatively sterilized accordingly. This is to ensure that any imported topsoil is free from soil pathogens, to prevent introduction of new pathogens to the region. • No waste pollution may occur due to the mining activities and all waste must be contained and disposed of at the municipal landfill site on a weekly basis. • Mining activities must be limited to identified and specifically demarcated 5ha area. • No trapping, poisoning or removal of any indigenous fauna or avifauna species may be conducted on the property. • Remove and conserve topsoil layer and overburden material for rehabilitation after mining activities have ceased • Invasive vegetation to be removed during mining activities to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation. • No disturbance should be	
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					allowed within the remaining indigenous vegetation areas outside of the proposed 5ha area. This includes no dumping of fill, no new roads, and all forms of temporary disturbance. • No natural vegetation areas edges may be cleared or impacted upon by the proposed mining activities. • Implement erosion and storm water runoff management measures to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds. • Backfill mined areas as soon as possible after mining completion with onsite excavated material. • Only use topsoil and excavated material as derived and conserved from the proposed mining site to backfill and rehabilitate impacted areas. • Monitor rehabilitated areas for signs of erosion for at least a year after rehabilitation and implement erosion rectification and prevention measures as and if required. • Alien invasive and weed vegetation monitoring and	
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					removal must be undertaken for at least a year after mining activities have ceased and the site has been rehabilitated This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology	
Vegetation removal during excavations.	Removal and disturbance of indigenous vegetation	Natural resources	Operational, Decommissioning/Closure/ Rehabilitation	24 - Low	• Mining activities must be limited to identified and specifically demarcated 5ha area. • Remove and conserve topsoil layer and overburden material for rehabilitation after mining activities have ceased • Invasive vegetation to be removed during mining activities to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation. • No disturbance should be allowed within the remaining indigenous vegetation areas outside of the proposed 5ha area. This includes no dumping of fill, no new roads, and all forms of temporary disturbance. • No natural vegetation areas edges may be	24 - Low

					cleared or impacted upon by the proposed mining activities. • Implement erosion and storm water runoff management measures to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds. • Backfill mined areas as soon as possible after mining completion with onsite excavated material. • Only use topsoil and excavated material as derived and conserved from the proposed mining site to backfill and rehabilitate impacted areas. • Monitor rehabilitated areas for signs of erosion for at least a year after rehabilitation and implement erosion rectification and prevention measures as and if required. • Alien invasive and weed vegetation monitoring and removal must be undertaken for at least a year after mining activities have ceased and the site has been rehabilitated This must be done by the	
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					applicant, landowner or their appointed contractor, using CapeNature approved methodology.	
Employment provided by mine	Job opportunities provided by mine to the local community	Socio Economic Impacts	Operational phase	High Positive – No mitigation required		
Loading, hauling and transport	Increased traffic due to the mining activities requiring various vehicles to come onto and leave the site.	Socio Economic and traffic Impacts	Operational, Decommissioning/Closure/ Rehabilitation	21-Low	- A speed limit of 30km/hour will be displayed and enforced through a fining system on site. All vehicle drivers entering the site will be informed of the speed limit. - All drivers to adhere to road safety regulations and have valid drivers' licenses. - Hard surfaced the last 30 m of the farm road/proposed haul road approach to Main Road 174 (R302) , to reduce materials carry onto Main Road 174 (R302). - Locate the farm/haul road access gate 30 m from Main Road 174 (R302) road edge or ensure that the gate remains open during mining operations.	21- Low
All activities associated with proposed mining	Mining on agricultural	Socio Economic	Operational Phase	25 - Low	During mining, the outflow of run-off water	25 - Low

	land	Impacts and agricultural resources impacts			from the mining excavation must be controlled to prevent any down-slope erosion. This must be done by way of the construction of temporary banks and ditches that will safely disperse run-off water. These should be in place above the mining area, to minimise run-off into the excavation and at any points where overflow out of the excavation might occur. • The upper 50 cm of soil, even if it contains gravel, must first be stripped and stockpiled before mining. • Topsoil is a valuable and essential resource for rehabilitation, and it should 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 should be such that topsoil is stockpiled for the minimum possible time	
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					by rehabilitating different mining blocks progressively as the mining process continues. • Topsoil stockpiles should be protected against losses by water and wind erosion. Stockpiles should be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants on the stockpiles will help to prevent erosion. Stockpiles should be no more than 2 metres high. • To ensure that soil drainage is sufficiently maintained, it is important that the mining excavation, including along its bottom edge, remains free draining after rehabilitation and does not form a depression. • After mining, any steep slopes, along the edges of the mining excavation or within it, must be reduced to a minimum and profiled to blend with the surrounding topography. • The stockpiled topsoil must then be evenly	
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					spread across the entire mining area. The depth should be monitored during spreading to ensure that coverage is adequate and even. A slope must be maintained so that ponding of water does not occur on the surface. • A cover crop must be planted and established immediately after spreading of topsoil, to stabilise the soil and protect it from erosion. The cover crop should be fertilized for optimum growth, and any soil chemical deficiencies should be corrected, based on a chemical analysis of the re-spread soil. It is important that rehabilitation is taken up to the point of cover crop stabilisation. Rehabilitation cannot be considered to be complete until the first cover crop is well established. • The rehabilitated area must be monitored for erosion, and appropriately stabilised if any erosion occurs. • On-going alien	
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					vegetation control must keep the area free of alien vegetation after mining.	
Excavations	Heritage Resources Impacts	The potential impact of the proposed development on archaeological, paleontological and heritage remains	Operational Phase	16 - Low	Should any burials, fossils or other historical material be encountered during mining, work must cease immediately and HWC must be contacted.	8 - Low
Excavations	Visual impact	A negative visual impact due to the creation of excavation pits.	Operational Phase	50 – Medium	- Proposed mining activities must be limited to development footprint site. - Rehabilitate the site concurrent with operational mining process.	24 - Low
Decommissioning of mine	Soil erosion	Natural and agricultural resources	Decommissioning Phase	56-Medium	- Mine area must be rehabilitated and immediately after mining is completed. - A cover crop must be planted before the on set of the first rainy season to promote stabilisation of the soil. - Contours and slopes must reinstate and maintained as according to surrounding topography. - The site must be monitored regularly (at least 6 monthly and after heavy rains) for at least two years after rehabilitation and all signs	8-Low

					of erosion immediately rectified and alien vegetation removed to prevent potential siltation, erosion and alien encroachment. When no evidence of erosion and alien vegetation encroachment are visible and successful natural succession/rehabilitation of indigenous vegetation is observed the rehabilitated areas can be considered as successfully rehabilitated.	
Decommissioning of mine	Introduction of alien plant species during rehabilitation.	Natural and agricultural resources	Decommissioning Phase	56-Medium	- Only use topsoil as derived and conserved from the proposed mining area to be rehabilitated after mining activities have ceased on the property. - Alien invasive and weed vegetation monitoring and removal must be undertaken for at least two years after mining activities have ceased on disturbed and rehabilitated areas. This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology. All invasive alien species as listed by the	8-Low

					Conservation of Agricultural Resources Act (CARA) must be removed during these surveys. Declared weeds and aliens must be removed before annual seeding. Note that the landowner will be responsible for ongoing CARA listed alien vegetation management/removal on the rehabilitated mining site after closure certificate has been obtained and is in any case responsible for alien vegetation management on the whole property as per legislation requirements.	
Decommissioning of mine	Socio Economic impacts	Loss of socio-economic benefits to the mine employees and local economy when mine closes.	Decommissioning Phase	90-High	The mining company must assist any employees who may potentially lose their job once mining is completed to find a new job as far as possible.	1-Low

Refer to section v) above for the supporting impact assessment conducted by the EAP

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):-

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN	REFERENCE TO APPLICABLE SECTION OF REPORT
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		INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
SITE SENSITIVITY VERIFICATION AND AGRICULTURAL AGRO- ECOSYSTEM SPECIALIST ASSESSMENT FOR A SAND MINING PERMIT ON FARM NUMBER 4/814 DOORNFONTEIN NEAR MALMESBURY, WESTERN CAPE JOHANN LANZ MAY 2026	SITE SENSITIVITY VERIFICATION A specialist agricultural assessment is required to include a verification of the agricultural sensitivity of the development site as per the sensitivity categories used by the web-based environmental screening tool of the Department of Forestry, Fisheries and the Environment (DFFE). The screening tool's classification of sensitivity is merely an initial indication of what the sensitivity of a piece of land might be, as indicated by the only data that is available. What the screening tool attempts to indicate is whether the land is suitable for crop production (high and very high sensitivity) or unsuitable for crop production (low and medium sensitivity) The screening tool classifies the assessed site as being entirely very high agricultural sensitivity due to its PAA status. As has been shown in the previous section, the site is suitable for rain fed crop production and is therefore verified as high sensitivity according to its cropping potential. This assessment therefore disputes the very high agricultural sensitivity classification of the site by the screening tool and verifies it as being of high agricultural sensitivity because of its assessed cropping potential. THE IMPACTS OF MINING ON AGRICULTURAL RESOURCES AND PRODUCTION Mining can have both direct and indirect impacts on agricultural potential. Direct impacts are those that change the soil potential on site in terms of growing agricultural crops. Indirect impacts are those that do not directly affect plant growth, but that might impact the ability of farmers in the area to successfully run their agricultural enterprises. In this case, the alteration of agricultural sense of place is not considered likely to affect surrounding agricultural revenue generation. There are also other mining activities in the surrounding area.	X (All specialist recommendations have been included in potential impact mitigation measures and EMP requirements)	Part A – i) and j) Part B – Environmental Management Programme Report Also refer to Appendix D for a copy of the specialist report.

	Mining can result in dust on surrounding crops. There are not dust sensitive agricultural crops that could be impacted in close proximity, but dust should still be mitigated by means of damping down surfaces when required. The significance of this impact is low. There is ultimately only ever a single direct agricultural impact of mining and that is a change to the future agricultural production potential of the land. This impact can occur by way of different mechanisms. There will be a temporary cessation of agricultural production for the duration of mining activity on the site, but the potential impact of major concern is a reduction in the long term agricultural production potential of the site. In this case, this assessment finds that there may be a minor but not significant reduction in long-term agricultural production potential of the site provided that effective rehabilitation is implemented. This is because the site has fairly low pre mining cropping potential, unsuitable for permanent crops, and retention of sufficient topsoil will retain the existing agricultural potential of the site. Mining with well managed and effectively implemented rehabilitation will therefore have an impact of low significance on agricultural resources. However, without effective mitigation, there may well be some long-term reduction in soil and production potential and the impact on agricultural resources will therefore be higher. The agricultural protocol requires an indication of the potential losses in production and employment from the change of the agricultural use of the land as a result of the proposed development. Because the mining represents a small and temporary part of the farming enterprise the expected losses in production and employment will be insignificant. There are no additional environmental impacts of the proposed development that are relevant to this agricultural assessment. RECOMMENDED MITIGATION AND REHABILITATION PLAN A very important factor affecting the success of rehabilitation, and consequently the significance of all direct impacts, is the level of care that is taken to rehabilitate effectively. This is dependent on the level of environmental management of all mining activities that can impact on rehabilitation, both during the mining process and during the rehabilitation		
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	phase. The following is the sequence of recommended rehabilitation steps: 1. During mining, the outflow of run-off water from the mining excavation must be controlled to prevent any down-slope erosion. This must be done by way of the construction of temporary banks and ditches that will safely disperse run-off water. These should be in place above the mining area, to minimise run-off into the excavation and at any points where overflow out of the excavation might occur. 2. The upper 50 cm of soil, even if it contains gravel, must first be stripped and stockpiled before mining. 3. Topsoil is a valuable and essential resource for rehabilitation, and it should therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes. 4. Topsoil stripping, stockpiling and re-spreading must be done in a systematic way. The mining plan should be such that topsoil is stockpiled for the minimum possible time by rehabilitating different mining blocks progressively as the mining process continues. 5. Topsoil stockpiles should be protected against losses by water and wind erosion. Stockpiles should be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants on the stockpiles will help to prevent erosion. Stockpiles should be no more than 2 metres high. 6. To ensure that soil drainage is sufficiently maintained, it is important that the mining excavation, including along its bottom edge, remains free draining after rehabilitation and does not form a depression. 7. After mining, any steep slopes, along the edges of the mining excavation or within it, must be reduced to a minimum and profiled to blend with the surrounding topography. 8. The stockpiled topsoil must then be evenly spread across the entire mining area. The depth should be monitored during spreading to ensure that coverage is adequate and even. A slope must be maintained so that ponding of water does not occur on the surface. 9. A cover crop must be planted and established immediately after spreading of topsoil, to stabilise the soil and protect it from erosion. The cover crop should be fertilized for optimum growth, and any soil chemical deficiencies should be corrected, based on a chemical analysis of the re-spread soil. It is important that rehabilitation is taken up to the point of cover crop stabilisation. Rehabilitation cannot be considered to be complete until		
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	the first cover crop is well established. 10. The rehabilitated area must be monitored for erosion, and appropriately stabilised if any erosion occurs. 11. On-going alien vegetation control must keep the area free of alien vegetation after mining. CONCLUSIONS The conclusion of this assessment is that there are adequate reserves of sand and gravel within the proposed mining area. The proposed mining will not significantly reduce the future agricultural production potential of the site, if effective rehabilitation is implemented. <u>The proposed mine is therefore acceptable, and, from an agricultural impact point of view, it is recommended that it be approved.</u> The agricultural protocol requires confirmation that all reasonable measures have been taken through micro-siting to minimize fragmentation and disturbance of agricultural activities. The mining area will not cause unacceptable fragmentation and disturbance of agricultural activities. The conclusion of this assessment on the acceptability of the proposed development and the recommendation for its approval is subject to the following conditions: Mine management must be held accountable for well managed and effective implementation of all the recommended rehabilitation steps above. The specific, measurable rehabilitation outcomes against which the effectiveness of completed rehabilitation must be measured are: 1. that the topography and surface has been sufficiently smoothed without steep excavation edges to allow for cultivation; 2. that topsoil has been spread on the surface; 3. that there is a potential rooting depth of at least 50 cm of soil that is suitable for root growth above any existing depth limitation, across the entire mining area; 4. that there are no non free-draining depressions across the surface and that the depth of mining has not created an effective sub-surface dam, that is lower than the low point for drainage out of the mining area, and therefore, that no ponding of water occurs on the surface of the mined area; 5. that there is no visible erosion across the area, or down-slope of it as a		
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	result of mining, and that no part of the area has been left unacceptably vulnerable to erosion; 6. that a successful cover crop has been established across the entire area. 7. that there is no invasive alien vegetation within the mining area.		
TRAFFIC IMPACT STATEMENT FOR PROPOSED CONSENT USE APPLICATION TO ESTABLISH A SAND MIN ON PTN 4 DOORNFONTEIN NO 814, MALMESBURY TECHSO SMART SOLUTIONS AUGUST 2026	TRIP GENERATION Sand Mining Volume and Transport Analysis: The estimated volume of sand to be mined, based on an average depth of 1.0 meter, is approximately 40 000 cubic meters. The trucks designated for this operation will on average have a capacity of 15 cubic meters (equivalent to 30 tonnes). This mining activity is expected to generate around 6,660 truck trips, with an even distribution of 50% inbound and 50% outbound trips. Assuming that the materials are mined out within three and a half years, it would generate 3 truckloads of material daily (3 inbound and 3 outbound trips) Rough Calculation: 3 truckloads x 15 m3 = 45 m3 per day 45 m3 x 22 working days per month = 990 m3 per month 990 m3 x 12 months = 11 880 m3 per year 11 880 m3 per year x 3,5 years = 41 580m3 (i.e. >40 000m3) in 3.5 years Cumulative Trips: The existing farm operations as well as the proposed sand and gravel mine have insignificant trip generation. Main Road 174 background traffic flow is moderate and the cumulative farm and mining traffic impact is negligible. The sand mine is expected to generate some 6 trips per day, with negligible peak hour trips and therefore does not warrant intersection capacity analysis. The site is located in a rural area, some 6,5 km south of Malmesbury, where there are negligible to nil cyclists or pedestrians. The moderate traffic flows present passing opportunities, and slow-moving vehicles are not expected to be travelling in the road shoulder. Also, Main Road 174 approaches to the farm/haul road access are level and straight with good visibility of approaching vehicles. Truck drivers serving the sand mine would	X (All specialist recommendations have been included in potential impact mitigation measures and EMP requirements)	Part A – i) and j) Part B – Environmental Management Programme Report Also refer to Appendix D for a copy of the specialist report.

	be familiar with the sand mine haul road access and advance signage informing motorists of the access is not required to prevent sudden slowing down, stopping manoeuvres to turn into the access. The proposed sand mine will not add significant trips to the existing farm access on Main Road 174. CONCLUSIONS It is concluded that: 1. The site has access on Main Road 174, a Primary Arterial (Class 2) road located in a rural roadside environment. 2. Main Road 174 is a two-lane undivided carriageway road with a 120 km/h speed limit and is in good condition. 3. The existing agricultural land use has a low trip generation rate. 4. The proposed sand mine will generate a low number of truck trips (average of approximately 6 trips per day) over a period of 3.5 years and will have a negligible impact on traffic. 5. The road environment, background traffic flow and low number of development trips do not warrant turning-lanes at the farm road / proposed sand mine access on Main Road 174. 6. The farm access on Main Road 174 has adequate shoulder sight distance to the south and north. 7. Stopping sight distance on Main Road 174 approaches to the farm access / proposed haul road access exceeds the minimum 210m. 8. The haul road access on Main Road 174 has a concrete edge beam that is on good condition. 9. The farm/haul access gate should be set back to achieve 30 m stacking space to the roadway, or the gate must be left open during operations. 10. Ideally, the last 30 m of the farm road/proposed haul road leading to Main Road 174 should be hard surfaced, to reduce materials carry onto Main Road 174. 11. The safety of the general road user should not be unduly affected by the proposed development. RECOMMENDATIONS It is recommended that the application for consent to establish a sand mine on the subject property be favourably considered with the following		
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	recommendations: 1. Hard surfaced the last 30 m of the farm road/proposed haul road approach to Main Road 174, to reduce materials carry onto Main Road 174. 2. Locate the farm/haul road access gate 30 m from Main Road 174 road edge or ensure that the gate remains open during mining operations.		
TERRESTRIAL ANIMAL SPECIES COMPLIANCE STATEMENT PROPOSED SAND AND GRAVEL MINING PERMIT ON FARM DOORNFONTEIN RE/4/814, MALMESBURY WESTERN CAPE NICOLAAS HANEKOM AUGUST 2026	BASLINE PROFILE DESCRIPTION OF BIODIVERSITY AND ECOSYSTEMS, INCLUDING A STATEMENT ON THE DURATION, DATE AND SEASON OF THE SITE INSPECTION AND THE RELEVANCE OF THE SEASON TO THE OUTCOME OF THE ASSESSMENT The proposed property, Farm Doornfontein RE/4/814 size 200.82ha is located approximately ±7km to the south of Malmesbury, within the municipal jurisdiction of Swartland Municipality. The property can be accessed via Main Road 174 (R302) which connects to the N1. The predominant land use in the surrounding area is agriculture and includes cultivated land used for grain production and vineyards. The property is used as an agricultural unit and is developed with infrastructure such as a farmhouse or labourer cottages. The site of the proposed 5ha sand mine has significantly been impacted upon by agricultural activities. The nearest non-perennial watercourse is located approximately 230m to the west of the proposed mine. A dry-pit sand and gravel mine of 5ha is assessed in this report. The average depth of mine-able sand spread over the mine area (5ha) is ±30 cm deep and the average depth of gravel, ±50 cm. The mining operator will first remove the topsoil layer (250mm) from block 1 and stockpile it on the to be mined block 2. The mineable sand and gravel will then be removed from block 1 by a front-end loader and loaded onto tip-trucks. When all mineable sand and gravel is removed from block 1, the stockpiled topsoil on block 2 is removed and immediately placed on block 1, leaving 500mm topsoil above the gravel / clay layer. Removal of topsoil from block 2 commences and is stockpiled on block 3, where after mining on block 3 commence. Concurrent mining and rehabilitation continue until the sand resource on the 6 mining blocks is removed. The mining process reduced the depth of the sand but, following the recommended rehabilitation measures, will leave a minimum of 500 mm of topsoil. No new roads would have to be constructed to provide access to the proposed mining areas. The mine area is accessed directly off existing farm roads to remain as is throughout the mining process.	X (All specialist recommendations have been included in potential impact mitigation measures and EMP requirements)	Part A – i) and j) Part B – Environmental Management Programme Report Also refer to Appendix D for a copy of the specialist report.

	The site was visited by the specialist on 24 August 2026 to confirm current land use, animal sensitivity of the site and potential animal species impacts of proposed mining activities. Seeing that all proposed mining activities are located on completely transformed annually cultivated agricultural land with no sensitive terrestrial or aquatic habitat features i.e. wetlands or indigenous vegetation areas the survey can be conducted any time of the year. It was observed that the proposed mining activities areas falls within agricultural land currently being used for annual crop cultivation and livestock grazing. No indigenous animal or bird species of conservation concern (SCC) were recorded at the time of the site survey on the proposed mining areas nor its immediate surrounds. The proposed mining areas are not located on any mapped terrestrial CBA or ESA areas. The access roads are existing farm roads which will remain and used as is during the proposed mining activities and maintained as per current farming practices. The screen tool report Identified <i>Eremitalpa granti granti</i>, <i>Pachysoma Aesculapius</i>, <i>Conocephalus peringueyi</i> and <i>Aneuryphymus montanus</i> as possibly being present on site. None of them are however present due to transformed habitat and their habitat or host plants not present on site or in close proximity to the site. The animal species habitat is totally destroyed, and the site consist of ploughed and cultivated agricultural fields. The development will have a Negligible Sensitivity SEI on the PAOI. In accordance with the Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Animal Species (GN 1150, GG 43855), the determination of the Site Ecological Importance (SEI) for the recorded habitat types is only required where the Terrestrial Animal Species Theme has been assigned a High or Very High sensitivity. As demonstrate, the study area was confirmed to have a negligible terrestrial animal species sensitivity. Consequently, a formal SEI assessment for the different habitat types is not required in terms of the protocol.		
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	One habitat type was identified, namely ploughed and cultivated areas. SCC-specific buffers were considered, but no SCC breeding sites, roosting sites, confirmed populations or other buffer-triggering features were recorded within the development footprint or PAOI. No SCC-specific buffers are required. No SCC breeding sites, roosting sites, confirmed populations or key habitat features were recorded, and that the degraded condition of the site limits its importance for SCC. WHERE REQUIRED, PROPOSED IMPACT MANAGEMENT ACTIONS AND OUTCOMES OR ANY MONITORING REQUIREMENTS FOR INCLUSION IN THE EMPR Mining can have both direct and indirect impacts on animal species of the development sites and surrounds. Direct impacts are those that destroys indigenous animal species habitats. Indirect impacts are those that may overtime lead to degradation or transformation of indigenous animal species habitats such as erosion. The proposed mining activities can have the following potential impacts on indigenous animal species of the site and surrounds: • Habitat destruction or degradation • Disturbance during breeding season • Physical death of species The following impact management measures must be implemented and included in the EMPr, and should they be implemented the proposed mining activities should not have any significant negative impacts on any indigenous animal present on the site or surrounds: • Mining activities must be limited to identified and demarcated annually cultivated agricultural land and only existing roads may be used. • Remove and conserve topsoil layer and overburden material for rehabilitation after mining activities have ceased • Invasive vegetation to be removed during mining activities to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation. • No trapping or hunting of any fauna or avifauna species may take		
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	place on the property. • Any tortoises or fauna or avifauna species present on the site when excavations are taking place must be safely moved to adjacent areas not to be impacted by the mining activities. • No disturbance should be allowed within the remaining indigenous vegetation areas outside of the proposed mining activity areas and existing access roads. This includes no excavations; no storage of topsoil, overburden or bentonite stockpiles, no new or widened roads, and all forms of temporary disturbance. If indigenous vegetation areas are disturbed they must be immediately rehabilitated with indigenous vegetation areas under guidance of suitably qualified rehabilitation specialist. • No natural vegetation areas edges may be cleared or impacted upon by the proposed mining activities. • Implement erosion and storm water runoff management measures to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds. • Backfill mined areas as soon as possible after mining completion with onsite excavated material. • Only use topsoil and excavated material as derived and conserved from the proposed mining site to backfill and rehabilitate impacted areas. • Monitor rehabilitated areas for signs of erosion for at least a year after rehabilitation and implement erosion rectification and prevention measures as and if required. • Alien invasive and weed vegetation monitoring and removal must be undertaken for at least a year after mining activities have ceased and the site has been rehabilitated This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology. • Should any faunal SCC be encountered during construction, these must be recorded (i.e. be photographed, GPS co-ordinates taken) and photographs placed on iNaturalist • Any faunal species that may die as a result of construction activities must be recorded (i.e. be photographed, GPS co-ordinates taken) and these records placed on iNaturalist. • In addition to all mitigations listed above a clause must be included in contracts for ALL personnel working on site stating that: "no wild		
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	animals will be hunted, killed, poisoned or captured. No wild animals will be imported into, exported from or transported in or through the province. No wild animals will be sold, bought, donated and no person associated with the development will be in possession of any live wild animal, carcass or anything manufactured from the carcass." A clause relating to fines, possible dismissal and legal prosecution must be included should any of the above transgressions occur, especially for SCC. Fauna chance-find protocol, restrictions on night lighting, pet control during construction, and alien-plant clearing must be included in EMPr		
AQUATIC BIODIVERSITY COMPLIANCE STATEMENT PROPOSED SAND AND GRAVEL MINING PERMIT ON FARM DOORNFONTEIN RE/4/814, MALMESBURY WESTERN CAPE NICOLAAS HANEKOM AUGUST 2026	A STATEMENT ON THE DURATION, DATE AND SEASON OF THE SITE INSPECTION AND THE RELEVANCE OF THE SEASON TO THE OUTCOME OF THE ASSESSMENT AND BASELINE PROFILE DESCRIPTION OF BIODIVERSITY AND ECOSYSTEMS OF THE SITE The proposed property, Farm Doornfontein RE/4/814 size 200.82ha is located approximately ±7km to the south of Malmesbury, within the municipal jurisdiction of Swartland Municipality. The property can be accessed via Main Road 174 (R302). The predominant land use in the surrounding area is agriculture and includes cultivated land used for grain production and vineyards. The property is used as an agricultural unit and is developed with infrastructure such as a farmhouse or labourer cottages. The site of the proposed 5ha sand mine has significantly been impacted upon by agricultural activities. The nearest non-perennial watercourse is located approximately 230m to the west of the proposed mine. A proposed dry-pit sand and gravel mine of 5ha is assessed in this report. The average depth of mine-able sand spread over the mine area (5ha) is ±30 cm deep and the average depth of gravel, ±50 cm. The mining operator will first remove the topsoil layer (250mm) from block 1 and stockpile it on the to be mined block 2. The mineable sand and gravel will then be removed from block 1 by a front-end loader and loaded onto tip-trucks. When all mineable sand and gravel is removed from block 1, the stockpiled topsoil on block 2 is removed and immediately placed on block 1, leaving 500mm topsoil above the gravel / clay layer. Removal of topsoil from block 2	X (All specialist recommendations have been included in potential impact mitigation measures and EMPr requirements)	Part A – i) and j) Part B – Environmental Management Programme Report Also refer to Appendix D for a copy of the specialist report.

	commences and is stockpiled on block 3, where after mining on block 3 commence. Concurrent mining and rehabilitation will continue until the sand resource on the 6 mining blocks is removed. The mining process reduces the depth of the sand but, following the recommended rehabilitation measures, will leave a minimum of 500 mm of topsoil. No new roads would have to be constructed to provide access to the proposed mining areas. The mine area is accessed directly off existing farm roads to remain as is throughout the mining process. Site was visited by the specialist on 24 June and 24 August 2026 to confirm current land use, aquatic sensitivity of the site and potential aquatic impacts of proposed mining activities. Seeing that all proposed mining n activities are located on completely transformed annually cultivated agricultural land with no sensitive aquatic features i.e. drainage lines or wetlands the survey can be conducted any time of the year. It was observed that the proposed mining activities areas falls within agricultural land currently being used for annual crop cultivation and livestock grazing. The specialist agrees with the Low Aquatic Sensitivity rating given to the proposed mining areas by the DEA Screening Tool in terms of the current land use. The proposed mining expansion areas does not fall within any mapped non-perennial drainage lines nor within any mapped NFEPA wetland areas. The nearest watercourse is a non-perennial river and its catchment was mapped originating in the north-western corner approximately 230m west of the northwest corner of the proposed mine area. No natural aquatic features were observed on the site during the time of the survey, and the site consist of cultivated lands. The non-perennial river has a very poor Present Ecological State as a result of the farming and ploughing activities. Due to the general >10m depth groundwater table average and low yields in the region groundwater is mainly an unused resource in the region. The proposed mining activities at a depth of 2.5m deep is therefore not expected to have any significant detrimental impacts on the geohydrological dynamics and/or groundwater quality/table of the site. WHERE REQUIRED, PROPOSED IMPACT MANAGEMENT ACTIONS		
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	AND OUTCOMES OR ANY MONITORING REQUIREMENTS FOR INCLUSION IN THE EMPR Mining can have both direct and indirect impacts on aquatic features of the site and surrounds. Direct impacts are those that pollute or transform groundwater or surface water resources. Indirect impacts are those that may overtime lead to degradation or transformation of aquatic features such as erosion. The proposed mining activities can have the following potential impacts on aquatic features of the site and surrounds: • Erosion • Groundwater pollution • Increased sediment loads • Surface water resources pollution • Transformation and degradation The following impact management measures must be implemented and included in the EMP, and should they be implemented the proposed mining expansion activities should not have any significant negative impacts on any aquatic features present on the site or surrounds: • Visually inspect mining area boundaries, exposed surfaces, overburden and top soil stockpiles for signs of erosion. • If erosion channels are discovered the mine must determine the cause of erosion and implement erosion rectification and prevention measures to rehabilitate eroded areas and prevent future erosion. • Rehabilitate and reinstate engineered constructed contours as soon as a phase is complete. • Undertake mining activities only in identified and specifically demarcated areas as proposed and in phases. Rehabilitating/filling excavations as soon as possible to prevent accumulation of stormwater. • Implement erosion and storm water runoff management measures as according to EMP requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds; and any storm water runoff from the mining areas and topsoil and overburden storage areas.		
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	• Minimize sediment load in the water by stripping a maximum of 10 meters ahead of the mining face and only moving the material once it needs to be processed or onto the intended topsoil stockpiles on the edge of all current and future mining areas. Monitor for erosion. Should erosion be present, undertake mitigation measures to rectify and prevent further erosion. • Use existing access roads and all roads need to be maintained as is and monitored. Visible signs of possible erosion must be immediately rehabilitated. • All storm water falling outside the mine property must be diverted around the mine. • No drainage line or wetland areas edges may be disturbed or impacted upon by the proposed activities. • If any groundwater is reached during the proposed mining activities on site, mining of that area must immediately be ceased, the Environmental Control Officer must be informed and the area must be rehabilitated to prevent any potential detrimental impact on the groundwater resource. • All measures should be put in place to ensure proper post-mining rehabilitation of affected areas, to as close to the original condition as possible. • No pollution of surface water or ground water resources may occur due to activities on the property. Oil spillages from vehicles on site must be controlled to prevent pollution of water resources.		
TERRESTRIAL PLANT SPECIES COMPLIANCE STATEMENT PROPOSED SAND AND GRAVEL MINING PERMIT ON FARM DOORNFONTEIN RE/4/814, MALMESBURY WESTERN CAPE NICOLAAS HANEKOM AUGUST 2026	BASLINE PROFILE DESCRIPTION OF BIODIVERSITY AND ECOSYSTEMS, INCLUDING A STATEMENT ON THE DURATION, DATE AND SEASON OF THE SITE INSPECTION AND THE RELEVANCE OF THE SEASON TO THE OUTCOME OF THE ASSESSMENT The proposed property, Farm Doornfontein RE/4/814 size 200.82ha is located approximately ±7km to the south of Malmesbury, within the municipal jurisdiction of Swartland Municipality. The property can be accessed via Main Road 174 (R302) which connects to the N1. The predominant land use in the surrounding area is agriculture and includes cultivated land used for grain production and vineyards. The property is	X (All specialist recommendations have been included in potential impact mitigation measures and EMP requirements)	Part A – i) and j) Part B – Environmental Management Programme Report Also refer to Appendix D for a copy of the specialist report.

	used as an agricultural unit and is developed with infrastructure such as a farmhouse or labourer cottages. The site of the proposed 5ha sand mine has significantly been impacted upon by agricultural activities. The nearest non-perennial watercourse is located approximately 230m to the west of the proposed mine. A dry-pit sand and gravel mine of 5ha is assessed in this report. The average depth of mine-able sand spread over the mine area (5ha) is ± 30 cm deep and the average depth of gravel, ± 50 cm. The mining operator will first remove the topsoil layer (250mm) from block 1 and stockpile it on the to be mined block 2. The mineable sand and gravel will then be removed from block 1 by a front-end loader and loaded onto tip-trucks. When all mineable sand and gravel is removed from block 1, the stockpiled topsoil on block 2 is removed and immediately placed on block 1, leaving 500mm topsoil above the gravel / clay layer. Removal of topsoil from block 2 commences and is stockpiled on block 3, where after mining on block 3 commence. Concurrent mining and rehabilitation continue until the sand resource on the 6 mining blocks is removed. The mining process reduced the depth of the sand but, following the recommended rehabilitation measures, will leave a minimum of 500 mm of topsoil. The proposed 5ha mining areas are not located on any mapped terrestrial CBA or ESA areas. Existing farm roads will remain and be used as is during the proposed mining activities and maintained as per current farming practices. The access road from the R302 to be used does not cross a terrestrial CBA or ESA area nor any indigenous vegetation areas. The site is totally transformed, and the site and bigger area is part of a ploughed and cultivated land with no Swartland Shale Renosterveld habitat on site and cannot be restored to Swartland Shale Renosterveld. WHERE REQUIRED, PROPOSED IMPACT MANAGEMENT ACTIONS AND OUTCOMES OR ANY MONITORING REQUIREMENTS FOR INCLUSION IN THE EMPR Mining can have both direct and indirect impacts on plant species of the development sites and surrounds. Direct impacts are those that destroys indigenous plant species. Indirect impacts are those that may overtime lead to degradation or transformation of indigenous plant species habitats such as erosion and alien vegetation encroachment.		
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	The proposed mining activities can have the following potential impacts on indigenous plant species of the site and surrounds: • Destruction/removal of indigenous vegetation due to clearance and erosion. • Degradation of adjacent indigenous vegetation areas due to alien vegetation encroachment. The following impact management measures must be implemented and included in the EMP, and should they be implemented the proposed mining expansion activities should not have any significant negative impacts on any indigenous plant species on the site or surrounds: • Alien invasive and weed vegetation monitoring and removal must be undertaken annually during mining and for at least a year after mining activities have ceased on disturbed areas or until the landowner starts with the annual cultivation activities on the affected land. This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology depending on the contract agreement that the applicant has with the landowner. All invasive alien species as listed by the Conservation of Agricultural Resources Act (CARA) must be removed during these surveys. Declared weeds and aliens must be removed before annual seeding. • Remove and conserve topsoil layer and overburden material for rehabilitation after mining activities have ceased. Topsoil and overburden materials must be stored separately adjacent to the mining areas on cultivated land with effective storm water runoff and erosion prevention measures to be implemented in order to protect the materials for rehabilitation. • Implement erosion and storm water runoff management measures as according to EMP and stormwater management plan requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds; and any storm water runoff from the mining areas and topsoil and overburden storage areas. • As the excavation of the quarry advances the stored overburden material must be replaced to backfill the excavations. The backfilled area must then be contoured according to existing surrounding contours of the cultivated land to prevent erosion.		
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	After contouring has been completed the stored topsoil material must be spread over the backfilled area. Only use topsoil as derived and conserved from the proposed mining area to be rehabilitated after mining activities have ceased on the property. The topsoil must not be compacted after spreading to allow the disturbed area to be restored. The site must be monitored regularly (at least 6 monthly and after heavy rains) and all signs of erosion immediately rectified and alien vegetation removed to prevent potential siltation, erosion and alien encroachment of natural areas and drainage lines. • No disturbance should be allowed within the remaining indigenous vegetation areas. This includes no dumping of fill, no roads, and all forms of temporary disturbance. No natural vegetation areas edges may be cleared or impacted upon by the proposed mining activities and no mining machinery may enter any indigenous vegetation areas outside of existing access roads to be used. • The project implementation process should be subject to standard Environmental Management Programme (EMP) prescripts and conditions and only proceed under supervision of a competent and diligent Environmental Control Officer, both during the operational/excavation and rehabilitation phases.		
TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT PROPOSED SAND AND GRAVEL MINING PERMIT ON FARM DOORNFONTEIN RE/4/814, MALMESBURY WESTERN CAPE NICOLAAS HANEKOM AUGUST 2026	BASLINE PROFILE DESCRIPTION OF BIODIVERSITY AND ECOSYSTEMS, INCLUDING A STATEMENT ON THE DURATION, DATE AND SEASON OF THE SITE INSPECTION AND THE RELEVANCE OF THE SEASON TO THE OUTCOME OF THE ASSESSMENT The proposed property, Farm Doornfontein RE/4/814 size 200.82ha is located approximately ±7km to the south of Malmesbury, within the municipal jurisdiction of Swartland Municipality. The property can be accessed via Main Road 174 (R302) which connects to the N1. The predominant land use in the surrounding area is agriculture and includes cultivated land used for grain production and vineyards. The property is used as an agricultural unit and is developed with infrastructure such as a farmhouse or labourer cottages. The site of the proposed 5ha sand mine has significantly been impacted upon by agricultural activities. The nearest non-perennial watercourse is located approximately 230m to the west of the proposed mine. A dry-pit sand and gravel mine of 5ha is assessed in this	X (All specialist recommendations have been included in potential impact mitigation measures and EMP requirements)	Part A – i) and j) Part B – Environmental Management Programme Report Also refer to Appendix D for a copy of the specialist report.

	report. The average depth of mine-able sand spread over the mine area (5ha) is ±30 cm deep and the average depth of gravel, ±50 cm. The mining operator will first remove the topsoil layer (250mm) from block 1 and stockpile it on the to be mined block 2. The mineable sand and gravel will then be removed from block 1 by a front-end loader and loaded onto tip-trucks. When all mineable sand and gravel is removed from block 1, the stockpiled topsoil on block 2 is removed and immediately placed on block 1, leaving 500mm topsoil above the gravel / clay layer. Removal of topsoil from block 2 commences and is stockpiled on block 3, where after mining on block 3 commence. Concurrent mining and rehabilitation continue until the sand resource on the 6 mining blocks is removed. The mining process reduced the depth of the sand but, following the recommended rehabilitation measures, will leave a minimum of 500 mm of topsoil. The Department of Environmental Affairs screening report from the national web based environmental screening tool reported a “Very High sensitivity for terrestrial biodiversity” sensitivity due to the presence of Swartland Shale Renosterveld, which has a critically ecosystem status¹. The site sensitivity verification and the specialist assessment does not agree with the designation of “very high” terrestrial biodiversity designation in terms of the national web based environmental screening tool and therefore a terrestrial biodiversity impact assessment was not conducted. The site is totally transformed, and the site and bigger area is part of a ploughed and cultivated land with no Swartland Shale Renosterveld habitat on site. The proposed 5ha mining permit site is not located on nor adjacent to any mapped Terrestrial Critical Biodiversity area or NFEPA wetland areas. It is therefore not expected that if mining is to take place within the 5ha of annually cultivated lands as surveyed by the EAP that it will have any significant detrimental ecological or heritage impacts should rehabilitation of the site be conducted in a successful manner by restoring the area to cultivated agricultural land through consecutive rehabilitation and operational activities and all mining related activities stay outside of the		
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¹ The revised national list of ecosystems that are threatened and in need of protection, National Environmental Management: Biodiversity Act (Act 10 of 2004) dated 18 November 2022.

	remaining indigenous vegetation and untransformed drainage line areas and access to and from the mining site is gained via existing farm access roads. WHERE REQUIRED, PROPOSED IMPACT MANAGEMENT ACTIONS AND OUTCOMES OR ANY MONITORING REQUIREMENTS FOR INCLUSION IN THE EMPR Mining can have both direct and indirect impacts on terrestrial biodiversity of the development sites and surrounds. Direct impacts are those that destroys indigenous plant and animal species. Indirect impacts are those that may overtime lead to degradation or transformation of indigenous species habitats such as erosion and alien vegetation encroachment. The proposed mining activities can have the following potential impacts on terrestrial biodiversity of the site and surrounds: • Destruction/removal of indigenous vegetation due to clearance and erosion. • Degradation of adjacent indigenous vegetation areas due to alien vegetation encroachment. • Fauna habitat destruction or degradation • Disturbance of fauna during breeding season • Physical death of fauna species The following impact management measures must be implemented and included in the EMPr, and should they be implemented the proposed mining expansion activities should not have any significant negative impacts on any sensitive terrestrial biodiversity features on the site or surrounds: • Mining activities must be limited to identified and demarcated annually cultivated agricultural land and only existing roads may be used. • Remove and conserve topsoil layer and overburden material for rehabilitation after mining activities have ceased. Topsoil and overburden materials must be stored separately adjacent to the mining areas on cultivated land with effective storm water runoff and erosion prevention measures to be implemented in order to protect the materials for rehabilitation. • Alien invasive and weed vegetation monitoring and removal must		
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	be undertaken annually during mining and for at least a year after mining activities have ceased on disturbed areas or until the landowner starts with the annual cultivation activities on the affected land. This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology depending on the contract agreement that the applicant has with the landowner. All invasive alien species as listed by the Conservation of Agricultural Resources Act (CARA) must be removed during these surveys. Declared weeds and aliens must be removed before annual seeding. • Invasive vegetation to be removed during mining activities to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation. • No trapping or hunting of any fauna or avifauna species may take place on the property. • Any tortoises or fauna or avifauna species present on the site when excavations are taking place must be safely moved to adjacent areas not to be impacted by the mining activities. • No disturbance should be allowed within the remaining indigenous vegetation areas outside of the proposed mining activity areas and existing access roads. This includes no excavations; no storage of topsoil, overburden or bentonite stockpiles, no new or widened roads, and all forms of temporary disturbance. If indigenous vegetation areas are disturbed they must be immediately rehabilitated with indigenous vegetation areas under guidance of suitably qualified rehabilitation specialist. • No natural vegetation areas edges may be cleared or impacted upon by the proposed mining activities. • Implement erosion and storm water runoff management measures as according to EMP and stormwater management plan requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds; and any storm water runoff from the mining areas and topsoil and overburden storage areas. • As the excavation of the quarry advances the stored overburden material must be replaced to backfill the excavations. The backfilled area must then be contoured according to existing surrounding contours of the cultivated land to prevent erosion.		
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	After contouring has been completed the stored topsoil material must be spread over the backfilled area. Only use topsoil as derived and conserved from the proposed mining area to be rehabilitated after mining activities have ceased on the property. The topsoil must not be compacted after spreading to allow the disturbed area to be restored. The site must be monitored regularly (at least 6 monthly and after heavy rains) and all signs of erosion immediately rectified and alien vegetation removed to prevent potential siltation, erosion and alien encroachment of natural areas and drainage lines. • The project implementation process should be subject to standard Environmental Management Programme (EMP) prescripts and conditions and only proceed under supervision of a competent and diligent Environmental Control Officer, both during the operational/excavation and rehabilitation phases.		
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See specialist report/s attached under **Appendix D**.

I) Environmental impact statement

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

The objective of an EIA, in this case a basic assessment, is to find the alternative having the least negative environmental impact and which best benefits society. The assessment and evaluation of potential impacts associated with the proposed development was undertaken in an iterative manner, to inform proactively the 'shaping' of the optimum development proposal. Specialists and key stakeholders were involved in the EIA process to identify and assess potential impacts of the proposed development.

Overall, all of the potential environmental and socio-economic impacts identified and assessed (as listed below) for **Alternative 1** can be reduced to a low significance impact with implementation of proposed mitigation measures, rehabilitation and monitoring:

Potential impacts identified for **Alternative 1** during the Operational Phase –

- Increased dust levels (medium negative before mitigation and low negative after mitigation)
- Potential erosion due to proposed mining activities along steep slopes (medium negative before mitigation and low negative after mitigation)
- Emission (low negative before mitigation and low negative after mitigation)
- Mining activities can result in increased sediment loads in water resources (medium negative before mitigation and low negative after mitigation)
- Impact on water resources i.e. groundwater, secondary drainage lines etc. (high negative before mitigation and low negative after mitigation)
- The trapping of all storm water within excavations on the mine area (medium negative before mitigation and low negative after mitigation)
- Effluent from toilets and litter (medium negative before mitigation and low negative after mitigation)
- Hydrocarbon spill (medium negative before mitigation and low negative after mitigation)
- Fire (medium negative before mitigation and low negative after mitigation)
- Introduction and spread of declared alien vegetation (medium negative before mitigation and low negative after mitigation)
- Impact on naturally occurring fauna and avifauna present in the area (low negative before mitigation and low negative after mitigation)
- Impact of proposed mining activities on indigenous vegetation (low negative before mitigation and low negative after mitigation)
- Increased and sustained job opportunities (positive impact)
- Increased traffic (low negative before mitigation and low negative after mitigation)
- Mining of agricultural land (low negative before mitigation and low negative after mitigation)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (low negative before mitigation and low negative after mitigation)
- Noise due to mining machinery, trucks and people on site (low negative before mitigation and low negative after mitigation)
- Visual impact of excavation pits (medium negative before mitigation and low negative after mitigation)

Potential impacts identified for **Alternative 1** during the Decommissioning/Rehabilitation Phase –

- Soil erosion (medium negative before mitigation and low negative after mitigation)
- Introduction of alien plant species during rehabilitation (medium negative before mitigation and low negative after mitigation)
- Loss of socio-economic benefits to the mine employees and local economy when mine closes (high negative before mitigation and low negative after mitigation)

The implementation of **Layout Alternative 1 is preferred** and recommended as the best environmental option due to the following reasons:

- The site is not mapped as an CBA or ESA or watercourse and is part of cultivated agricultural land making the site of low ecological connectivity and low conservation value and less favourable for rehabilitation investments.
- Historical sand mining has taken place on the property with successful rehabilitation of the mining areas to agricultural land used for cultivation.
- The site is not within a Protected Area, nor within 5 kilometres of a Protected Area, are not within 10 kilometres of a World Heritage Site.
- No flora or fauna Species of Conservation Concern (SCC) were recorded on the site and due to previous and ongoing disturbances the site is not expected to be used by any fauna SCC as breeding habitat.
- It is proposed that the temporary mining of sand and gravel as proposed on 5ha of the property at the specific site is the best economically viable option to be implemented for the specific site and that it can be successfully rehabilitated to its current status quo after mining completion.

No fatal flaws were identified during the assessment that will lead to unacceptable environmental degradation during the proposed mining activities should alternative 1 be authorised and implemented.

(ii) Final Site Map

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

Refer to maps attached under **Appendix B**

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

Overall, all of the potential environmental and socio-economic impacts identified and assessed (as listed below) for **Alternative 1** can be reduced to a low significance impact with implementation of proposed mitigation measures, rehabilitation and monitoring:

Potential impacts identified for **Alternative 1** during the Operational Phase –

- Increased dust levels (medium negative before mitigation and low negative after mitigation)
- Potential erosion due to proposed mining activities along steep slopes (medium negative before mitigation and low negative after mitigation)
- Emission (low negative before mitigation and low negative after mitigation)
- Mining activities can result in increased sediment loads in water resources (medium negative before mitigation and low negative after mitigation)

- Impact on water resources i.e. groundwater, secondary drainage lines etc. (high negative before mitigation and low negative after mitigation)
- The trapping of all storm water within excavations on the mine area (medium negative before mitigation and low negative after mitigation)
- Effluent from toilets and litter (medium negative before mitigation and low negative after mitigation)
- Hydrocarbon spill (medium negative before mitigation and low negative after mitigation)
- Fire (medium negative before mitigation and low negative after mitigation)
- Introduction and spread of declared alien vegetation (medium negative before mitigation and low negative after mitigation)
- Impact on naturally occurring fauna and avifauna present in the area (low negative before mitigation and low negative after mitigation)
- Impact of proposed mining activities on indigenous vegetation (low negative before mitigation and low negative after mitigation)
- Increased and sustained job opportunities (positive impact)
- Increased traffic (low negative before mitigation and low negative after mitigation)
- Mining of agricultural land (low negative before mitigation and low negative after mitigation)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (low negative before mitigation and low negative after mitigation)
- Noise due to mining machinery, trucks and people on site (low negative before mitigation and low negative after mitigation)
- Visual impact of excavation pits (medium negative before mitigation and low negative after mitigation)

Potential impacts identified for **Alternative 1** during the Decommissioning/Rehabilitation Phase –

- Soil erosion (medium negative before mitigation and low negative after mitigation)
- Introduction of alien plant species during rehabilitation (medium negative before mitigation and low negative after mitigation)
- Loss of socio-economic benefits to the mine employees and local economy when mine closes (high negative before mitigation and low negative after mitigation)

The implementation of **Layout Alternative 1 is preferred** and recommended as the best environmental option due to the following reasons:

- The site is not mapped as an CBA or ESA or watercourse and is part of cultivated agricultural land making the site of low ecological connectivity and low conservation value and less favourable for rehabilitation investments.
- Historical sand mining has taken place on the property with successful rehabilitation of the mining areas to agricultural land used for cultivation.
- The site is not within a Protected Area, nor within 5 kilometres of a Protected Area, are not within 10 kilometres of a World Heritage Site.
- No flora or fauna Species of Conservation Concern (SCC) were recorded on the site and due to previous and ongoing disturbances the site is not expected to be used by any fauna SCC as breeding habitat.
- It is proposed that the temporary mining of sand and gravel as proposed on 5ha of the property at the specific site is the best economically viable option to

be implemented for the specific site and that it can be successfully rehabilitated to its current status quo after mining completion.

Refer to Appendix B for maps of the layout alternatives considered.

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 conditions of authorisation.

The National Environmental Management Laws Amendment Act 25 of 2014 and Section 38 of the MPRDA stipulated that the general objectives of integrated environmental management must be applied in accordance with NEMA and this will include the assessment and management of impacts identified as part of the EIA process. The following are proposed impact management mitigation measures to be implemented for each potential impact identified and assessed:

Increased dust levels

- Reduce drop height of material to a minimum.
- Area will be mined in phases to reduce the barren areas.
- Temporarily halt material handling in extreme windy conditions.
- Use non-potable water to dampen bare soil areas if required to mitigate windblown dust.
- A speed limit of 30km/hour will be displayed and enforced through a fining system.
- All vehicle drivers entering the site will be informed of the speed limit.
- Materials are crushed with water at the crushing plant to avoid excessive dust produced at crushing plant.
- The requirement of additional dust suppression measures to be implemented must be determined through a dust monitoring programme or fugitive dust control plan to limit the emission of particulate matter.
- The proposed mining operation will practice dust fall out monitoring and management programme to ensure that potential health issues as a result of dust fall out are detected and immediately corrected.

Noise impacts

- No activities that may generate noise levels above the legal limit in terms of the Environmental Conservation Act, Western Cape Noise regulations will be conducted.
- Machinery and vehicles should be regularly maintained to prevent excessive noise.
- All machinery and work activities must adhere to the requirements of the noise regulations.

Potential erosion of the site and surrounds due to proposed mining activities along steep slopes

- Visually inspect mining area boundaries, exposed surfaces, overburden and topsoil stockpiles for signs of erosion.
- If erosion channels are discovered the mine must determine the cause of erosion and implement erosion rectification and prevention measures to rehabilitate eroded areas and prevent future erosion.
- Rehabilitate and reinstate engineered constructed contours as soon as a phase is complete.
- Undertake mining activities only in identified and specifically demarcated areas as proposed and in phases. Rehabilitating/filling excavations as soon as possible to prevent accumulation of stormwater.

- Spoil (top soil and overburden) should be stockpiled in a manner that it does not cause erosion or drain to a water resource or water course in times of high precipitation.
- Runoff from upland areas will be mitigated through the creation of drainage channels and placement of overburden materials along the southern borders of the site to divert stormwater runoff around the quarry areas and into its natural flow path.
- Implement erosion and storm water runoff management measures as according to EMP requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds; and any storm water runoff from the mining areas and topsoil and overburden storage areas.
- Mine area must be rehabilitated and planted with agricultural crop immediately after mine is completed to stabilise the soil.
- Monitor the area for signs of erosion during rehabilitation and rectify immediately if detected.

Emissions - Vehicles and machinery on the site will produce tailpipe emissions causing air pollution

- Vehicles and machinery will be maintained to minimize emissions. A log book will be filled in to keep a record of all maintenance problems encountered and mitigation measures implemented to resolve the problem.
- Vehicles and machinery emitting excessive emissions will be stopped immediately and not allowed to operate until the necessary repairs have been done.

Mining activities can result in increased sediment loads in water resources

- Restrict mining areas only to approved footprint and demarcate the area before mining commences, maintain demarcation throughout operational phase.
- Demarcation method to be approved by an Environmental Control Officer (ECO).
- Minimize sediment load in the water by stripping a maximum of 10 meters ahead of the mining face and only moving the material once it needs to be processed or onto the intended topsoil stockpiles on the edge of all current and future mining areas. Monitor for erosion. Should erosion be present, undertake mitigation measures to rectify and prevent further erosion.
- All roads need to be maintained and monitored. Visible signs of possible erosion must be immediately rehabilitated.
- All storm water falling outside the mine property must be diverted around the mine. This forms part of the Storm Water Management Plan as part of the EMP.

Mining activities can impact on water resources i.e. groundwater, secondary drainage lines and dams

- Undertake mining activities only in identified and specifically demarcated areas as proposed.
- Storm water and erosion control as per an Environmental Management Programme (EMP) must be conducted.
- No disturbance should be allowed within any natural wetlands or drainage lines. This includes no dumping of fill, no roads, and all forms of temporary disturbance.
- No drainage line or wetland areas edges may be disturbed or impacted upon by the proposed activities.
- If any groundwater is reached during the proposed mining activities on site, mining of that area must immediately be ceased, the Environmental Control Officer must be informed and the area must be rehabilitated to prevent any potential detrimental impact on the groundwater resource.
- All measures should be put in place to ensure proper post-mining rehabilitation of affected areas, to as close to the original condition as possible.

- No pollution of surface water or ground water resources may occur due to activities on the property. Oil spillages from vehicles on site must be controlled to prevent pollution of water resources.

The trapping of storm water within excavations on the mine area

- All storm water falling outside the mine property must be diverted around the mine into its natural flow course.
- No stormwater may be trapped/dammed on the mining site.
- If damming of water occurs within the quarry areas this water must be pumped out to the lower lying areas along its natural flow course, without causing erosion.

Waste from toilets and litter leading to environmental pollution

- The toilets are serviced when needed and emptied when almost full.
- If a leak occurs the correct emergency procedure is to be followed (see EMP).
- Litter will be collected and removed from site by the operator on a daily basis.
- Chemical toilets must be placed within previously disturbed mining areas and not within indigenous vegetation areas not to be mined.).
- Domestic litter will be collected and removed from site by the operator on a weekly basis.
- Proper secured waste bins must be provided on site for the staff and emptied before full..

Hydrocarbon spill leading to environmental pollution

- Any mine vehicle which is leaking hydrocarbons (e.g. petrol, diesel or oil) must be repaired immediately on an impermeable surface not allowing any fuel or oil to spill unto soil. If it is not possible to repair the leak immediately, a drip tray will be placed under the leak to trap any spillages. The content of the drip trays will be decanted into an old oil drum for removal from the site to a hazardous waste handling facility.
- Hydrocarbon spillages are to be cleaned up immediately.
- The mine will also maintain a store of suitable absorbent material, suitable bioremediation substance and a spill kit. All incidences/ spillages are to be recorded in an incident log book. Contaminated soil must go to Vissershok Hazardous Landfill site

Fire causing environmental destruction/ transformation

- All employees will be trained on fire safety and on how to reduce the probability of a fire spreading out of control.
- Anyone who observes a fire must report it immediately to the fire protection agency/ fire brigade and their supervisor/ mine manager.
- Vehicles must be parked in an area with no vegetation if a fire occurs.
- Firefighting equipment i.e. extinguishers must be readily available at the site, clearly visible and in a good working order.
- No smoking will be allowed on site.

Alien vegetation encroachment

- Alien invasive and weed vegetation monitoring and removal must be undertaken annually during mining and for at least a year after mining activities have ceased on disturbed areas or until the landowner starts with the annual cultivation activities on the affected land. This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology depending on the contract agreement that the applicant has with the landowner. All invasive alien species as listed by the Conservation of Agricultural Resources Act (CARA) must be removed during these surveys. Declared weeds and aliens must be removed before annual seeding.
- Only use topsoil as derived and conserved from the proposed mining area to be rehabilitated after mining activities have ceased on the property.

- Every landowner has a legal obligation in terms of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) and the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) to control and eradicate alien invasive vegetation on his/her property

Impact on the naturally occurring fauna and avifauna present in the area

- No clearance of any indigenous vegetation to take place.
- Clearly demarcated proposed mining areas before mining commences and maintain demarcation throughout active operational and rehabilitation phases.
- Where necessary steep slope stairs (terracing) must be created along the quarry edges to slow down water runoff and prevent erosion.
- Rehabilitation must take place on an ongoing basis as mining proceeds. As the quarry advances along strike, the overburden is progressively replaced to backfill the excavation. The backfilled area will be contoured and sloped according to existing surrounding contours and slopes to prevent erosion and damming of stormwater. Prior to replacing topsoil the surface area must be scarified (if necessary). After contouring has been completed the stored topsoil material must be spread over the backfilled area, leaving no depressions in the landscape. The topsoil must not be compacted after spreading. Only topsoil as derived and conserved from the proposed mining area must be used to rehabilitate the impacted mining areas.
- Each 1ha phased mining area may not remain open for more than a year before rehabilitation must commence. In other words topsoil may not be stored for longer than a year before it is used for rehabilitation of the completed 1ha mining phase.
- Should any additional topsoil be required for rehabilitation purposes, it must be from neighbouring properties or alternatively sterilized accordingly. This is to ensure that any imported topsoil is free from soil pathogens, to prevent introduction of new pathogens to the region.
- No waste pollution may occur due to the mining activities and all waste must be contained and disposed of at the municipal landfill site on a weekly basis.
- Mining activities must be limited to identified and specifically demarcated 5ha area.
- No trapping, poisoning or removal of any indigenous fauna or avifauna species may be conducted on the property.
- Remove and conserve topsoil layer and overburden material for rehabilitation after mining activities have ceased
- Invasive vegetation to be removed during mining activities to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation.
- No disturbance should be allowed within the remaining indigenous vegetation areas outside of the proposed 5ha area. This includes no dumping of fill, no new roads, and all forms of temporary disturbance.
- No natural vegetation areas edges may be cleared or impacted upon by the proposed mining activities.
- Implement erosion and storm water runoff management measures to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds.
- Backfill mined areas as soon as possible after mining completion with onsite excavated material.
- Only use topsoil and excavated material as derived and conserved from the proposed mining site to backfill and rehabilitate impacted areas.
- Monitor rehabilitated areas for signs of erosion for at least a year after rehabilitation and implement erosion rectification and prevention measures as and if required.
- Alien invasive and weed vegetation monitoring and removal must be undertaken for at least a year after mining activities have ceased and the site has been rehabilitated This

must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology

Removal and disturbance of indigenous vegetation

- Mining activities must be limited to identified and specifically demarcated 5ha area.
- Remove and conserve topsoil layer and overburden material for rehabilitation after mining activities have ceased
- Invasive vegetation to be removed during mining activities to be disposed of at landfill site in such a manner that seeds must not be able to spread from the disposal site or during transportation.
- No disturbance should be allowed within the remaining indigenous vegetation areas outside of the proposed 5ha area. This includes no dumping of fill, no new roads, and all forms of temporary disturbance.
- No natural vegetation areas edges may be cleared or impacted upon by the proposed mining activities.
- Implement erosion and storm water runoff management measures to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds.
- Backfill mined areas as soon as possible after mining completion with onsite excavated material.
- Only use topsoil and excavated material as derived and conserved from the proposed mining site to backfill and rehabilitate impacted areas.
- Monitor rehabilitated areas for signs of erosion for at least a year after rehabilitation and implement erosion rectification and prevention measures as and if required.
- Alien invasive and weed vegetation monitoring and removal must be undertaken for at least a year after mining activities have ceased and the site has been rehabilitated This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology.

Increased traffic due to the mining activities requiring various vehicles to come onto and leave the site

- A speed limit of 30km/hour will be displayed and enforced through a fining system on site. All vehicle drivers entering the site will be informed of the speed limit.
- All drivers to adhere to road safety regulations and have valid drivers' licenses.
- Hard surfaced the last 30 m of the farm road/proposed haul road approach to Main Road 174 (R302) , to reduce materials carry onto Main Road 174 (R302).
- Locate the farm/haul road access gate 30 m from Main Road 174 (R302) road edge or ensure that the gate remains open during mining operations.

Mining on agricultural land

- Topsoil and overburden materials must be stored separately adjacent to the mining areas with effective storm water runoff and erosion prevention measures to be implemented in order to protect the materials. Topsoil stockpiles should be protected against losses by water and wind erosion. The mining operations should be conducted in such a manner that topsoil is stockpiled for the minimum possible time by rehabilitating different mining blocks progressively as the mining process continues.
- Once mining excavations have been completed the stored overburden material must be replaced to backfill the excavations. The backfilled area must then be contoured and slopes in accordance with the adjacent slope. After contouring has been completed the stored topsoil material must be spread over the backfilled area. Only use topsoil as derived and conserved from the proposed mining area to be rehabilitated after mining activities have ceased on the property. The topsoil must not be compacted after spreading to allow the disturbed area to be restored. The site must be monitored regularly (at least 6 monthly and after heavy rains) for at least two years after

rehabilitation and all signs of erosion immediately rectified and alien vegetation removed to prevent potential siltation, erosion and alien encroachment. temporary disturbance.

- To ensure minimum impact on drainage, it is important that no surface depressions are left after rehabilitation. In other words the surface slope must be maintained throughout, including through the edge of the mined area. Surface depressions will result in ponding of water on the surface and accumulation of excess moisture in depression areas. There is sufficient slope and elevation in the proposed mining area to avoid the creation of depressions, provided that mining depths are controlled to ensure the maintenance of a slope. No compaction in the soil should remain after rehabilitation. Compaction will impede water movement through the soil profile.
- If ripping is required to loosen compaction, this should be done to a depth of at least 30cm, and in such a way that no mixing of the subsoil into the topsoil layer occurs.
- The site must be monitored regularly (at least 6 monthly and after heavy rains) for at least two years after rehabilitation and all signs of erosion immediately rectified and alien vegetation removed to prevent potential siltation, erosion and alien encroachment.
- When no evidence of erosion and alien vegetation encroachment are visible and successful natural succession/rehabilitation of indigenous vegetation is observed the rehabilitated areas can be considered as successfully rehabilitated.

The potential impact of the proposed mining activities on archaeological, paleontological and heritage remains

- Should any burials, fossils or other historical material be encountered during mining, work must cease immediately and HWC must be contacted.

A negative visual impact due to the creation of excavation pits

- Proposed mining activities must be limited to development footprint site.
- Rehabilitate the site concurrently with mining activities.

Potential erosion of the site and surrounds during rehabilitation phase

- Mine area must be rehabilitated and immediately after mining is completed.
- A cover crop must be planted before the onset of the first rainy season to promote stabilisation of the soil.
- Contours and slopes must be reinstated and maintained as according to surrounding topography.
- The site must be monitored regularly (at least 6 monthly and after heavy rains) for at least two years after rehabilitation and all signs of erosion immediately rectified and alien vegetation removed to prevent potential siltation, erosion and alien encroachment.
- When no evidence of erosion and alien vegetation encroachment are visible and successful natural succession/rehabilitation of indigenous vegetation is observed the rehabilitated areas can be considered as successfully rehabilitated.

Introduction of alien and weed plant species during rehabilitation

- Only use topsoil as derived and conserved from the proposed mining area to be rehabilitated after mining activities have ceased on the property.
- Alien invasive and weed vegetation monitoring and removal must be undertaken for at least two years after mining activities have ceased on disturbed and rehabilitated areas. This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology. All invasive alien species as listed by the Conservation of Agricultural Resources Act (CARA) must be removed during these surveys. Declared weeds and aliens must be removed before annual seeding.
- Note that the landowner will be responsible for ongoing CARA listed alien vegetation management/removal on the rehabilitated mining site after closure certificate has been

obtained and is in any case responsible for alien vegetation management on the whole property as per legislation requirements.

Socio economic impacts of decommissioning the mine i.e. job loss

- The mining company must assist any employees who may potentially lose their job once mining is completed to find a new job as far as possible

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

The mining company must appoint a suitably qualified ECO who will be responsible for ensuring compliance with the requirements of the EA and EMP during the proposed mining activities. The ECO must have at least five years of experience in environmental management and must be familiar with the environmental conditions of the area.

The ECO must:

- Inspect the site and record compliance with the EA and EMP on a three monthly basis during the operational phase of the mine;
- Inform key, on-site staff of their roles and responsibilities in terms of the EA and EMP;
- Ensure that all activities on site are undertaken in accordance with the EA and EMP;
- Immediately notify the mining company of any non-compliance with the EA or EMP, or any other issues of environmental concern; and
- Supervise and approve demarcation of sensitive environmental aspects of the site and surrounds.

All specialist recommendations must be adhered to.

All EMP requirements must be adhered to.

All mining activities must be restricted to the approved mining activities area and mining activities may not impact on any surrounding area falling outside of the approved mining activities area.

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

(Which relate to the assessment and mitigation measures proposed)

EAP has no detailed knowledge of sand and gravel deposits and distributions other than information as provided by applicant. Only knowledgeable on potential impacts of mining activities on the environment and the associated ecological and biodiversity aspects. In undertaking the investigation and compiling this report, the following has been assumed:

- The information provided by the client, engineers and specialists is accurate and unbiased;
- The scope of this investigation is to assess the direct and cumulative environmental impacts associated with the proposed mining activities.

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

i. Reasons why the activity should be authorized or not.

The EAP is of the opinion that the environmental authorisation should be issued.

The proposed Alternative 1 site is considered suitable for sand and gravel mining and the potential impacts identified would be adequately managed and effectively mitigated through the implementation of the recommendations outlined in this report as well as the proposed Environmental Management Programme (EMP).

It was concluded that the proposed activities will not have an unacceptable significant negative environmental impact on the environment if specialist and EMP recommendations are effectively implemented.

No fatal flaws were identified during the assessment that will lead to unacceptable environmental degradation during proposed mining activities.

ii. Conditions that must be included in the authorisation

The mining company must appoint a suitably qualified ECO who will be responsible for ensuring compliance with the requirements of the EA and EMP during the proposed mining activities. The ECO must have at least five years of experience in environmental management and must be familiar with the environmental conditions of the area.

The ECO must:

- Inspect the site and record compliance with the EA and EMP on a three monthly basis during the operational phase of the mine;
- Inform key, on-site staff of their roles and responsibilities in terms of the EA and EMP;
- Ensure that all activities on site are undertaken in accordance with the EA and EMP;
- Immediately notify the mining company of any non-compliance with the EA or EMP, or any other issues of environmental concern; and
- Supervise and approve demarcation of sensitive environmental aspects of the site and surrounds.

All specialist recommendations must be adhered to.

All EMP requirements/mitigation measures must be adhered to.

All mining activities must be restricted to the approved mining activities area and mining activities may not impact on any surrounding area falling outside of the approved mining activities area.

q) Period for which the Environmental Authorisation is required.

It is expected that mining activities will begin within one year of obtaining environmental authorisation. Mining activities are expected to take approximately 2 years, but the mining permit may need to be extended for up to 5 years therefore the Environmental authorization should be valid for 5 years.

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.

Yes, it is confirmed that the undertaking is provided and included at the end of the EMPr, and that it is both applicable to the BAR and EMPr.

s) Financial Provision

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

i. Explain how the amount was derived.

Description of areas/activities to be rehabilitated	Amount (Rands)
Opencast mining areas rehabilitation including final voids and ramps – total area 5Ha (at a rate of R23 500/Ha)	117 500.00
2 Years maintenance, monitoring and aftercare (at a rate of R6 250/year)	12 500.00
TOTAL REHABILITATION COSTS ESTIMATE	ZAR 130 000.00

(The amounts as presented above were calculated by making use of the methodology in the Guideline Documents for the Evaluation of the Quantum of Closure Related Financial Provision Provided by a Mine as published by the DMR)

ii. **Confirm that this amount can be provided for from operating expenditure.** (Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the mining work programme, Financial and Technical Competence Report or Mining Work Programme as the case may be).

The client has confirmed that this amount can be provided for from the operating expenditure. Should the Environmental Authorization be granted Dyck Advisory (Pty) Ltd will make a provision for the estimated closure cost by means of Bank Financial guarantee or any other means available and accepted by the competent authority.

Also refer to the Financial and Technical Competence Report attached as Appendix E.

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 mining 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**).

Refer to the impact assessment tables as available in the report within which socio-economic impacts area also assess.

With the implementation of the mitigation measures as listed in this report and the EMPr the proposed gravel and sand mining activities will not have any significant detrimental impacts on the socio-economic conditions of the local landowners, residence or communities. It will also have positive impacts such as job creation to the local economy.

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 mining 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 that Act, attach the investigation report as **Appendix** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

A Notice of Intent to Develop was submitted to Heritage Western Cape for determining need for an HIA. As per the HWC reply it is not expected that any significant heritage resources will be impacted upon by the proposed mining activities. See Record of Decision as received from Heritage Western Cape under **Appendix D1**. The mining activities will not impact on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 or impact on any building or structure older than 60 years in any way.

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

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

The EIA Regulations, 2014 require that all EIA processes must identify and describe “alternatives to the proposed activity that are feasible and reasonable”. Different types or categories of alternatives can be identified, e.g. location alternatives, type of activity, design or layout alternatives, technology alternatives and operational alternatives. The “No-Go” or “No Project” alternative must also be considered. Please refer to the sections above for detailed assessment of the preferred site alternative and no go option assessments.

Location alternatives – When a mineral is in demand, scouting of viable resources are required. It is important to note that in contrast to most other development, viable mineral locations are literally and figuratively “set in stone” based on the geology, mineral composition and geological and climatic processes such as those responsible for mineralization. Farm Doornfontein RE/4/814 is the preferred site alternative for the proposed sand and gravel mining because this is where viable sand and gravel deposits are known to occur as proven from previous mining operations conducted on the property and surrounds.

Activity alternatives- The transformed nature of the proposed site favours the proposed mining and any other activities (development, residential, conservation) cannot be considered as viable alternatives in this context. The proposed temporary sand and gravel mining activities are the only feasible and reasonable activity considered for the specific area as proposed, because it is consistent with the nearby successful sand and gravel mining activities conducted and will allow for optimal economical use of the land during mining and restoring the land for agricultural cultivation to continue after mining has been completed. Therefore, no other feasible or reasonable activity alternatives exists and as such none was assessed. No activity alternatives other than the no go option were considered or assessed. The applicant identified this area for sand and gravel mining purposes. The method of mining is singular.

Layout alternatives – Layout alternatives were considered and assessed. The buffer areas and sensitive environmental features such as sensitive indigenous vegetation, watercourses, agricultural infrastructure and sand/gravel mineral resources were taken into consideration when the mining area blocks and phases were developed for the mine operation plan. The proposed 5ha mining area as placed on the property avoids sensitive environmental features while ensuring it is located within an area with viable sand and gravel deposits for mining.

Technology alternatives – The consideration of technological alternative is very limited in this application. Technological alternatives are limited to different mining techniques and equipment used. No technology alternatives exist. The method of mining is singular. Plant equipment (excavator and dump trucks) is used to remove and transport the minerals from the mine area. From the mine area the mined mineral resources will directly be transported off site to the buyer or it will be temporarily stockpiled within the mining area where it will be screened and mix to ensure an aggregate material that meets the buyers needs.

Operational alternatives – The method of mining is singular and is described in the mine operations plan (EMP). Operational alternatives in terms of mining phase block sizes and

layout and speed limit restrictions with maintenance actions prescribed on the gravel access road were assessed and included as mitigation measures. The operational alternatives, e.g. small mine blocks or phases inside the mine area will reduce the visual impact. The speed limit will ensure the safety of other road users and pedestrians and weekly grading and maintenance of the access road from the R302 will reduce dust impacts and will ensure that the gravel road is maintained during mining operations to at least its current state before mining activities commenced. The mining operator will first remove the topsoil layer (50cm) from block 1 and stockpile it on the to be mined block 2. The mineable sand and gravel will then be removed from block 1 by a front-end loader and loaded onto tip-trucks. When all mineable sand and gravel is removed from block 1, the stockpiled topsoil on block 2 is removed and immediately placed on block 1, leaving 500mm topsoil above the gravel / clay layer. Removal of topsoil from block 2 commences and is stockpiled on block 3, where after mining on block 3 commence. Concurrent mining and rehabilitation continue until the sand resource on the 6 mining blocks is removed. The mining process reduced the depth of the sand but, following the recommended rehabilitation measures, will leave a minimum of 500 mm of topsoil.

The No-Go/No-Mining Option- The No-Go option will result in the site remaining as it is presently, cultivated agricultural land used for oats planing. As much as the no-go option will result in the protection of the current already transformed environment it will result in the sterilization of the available gravel and sand material should no other company mine the area. This would reduce gravel and sand resources available for i.e. road construction in the area. The no-go option would also result in no new employment opportunities. Mining activities will have negative environmental impacts and is not sustainable but upon completion of excavations with proper rehabilitation previous land uses like outs planting can be continued on the property. The overall potential impacts of the proposed gravel and sand mining activities on the environment and specifically on the agricultural potential of the affected areas has been assessed as low negative with the implementation of the proposed EMP requirements.

The implementation of **Layout Alternative 1 is preferred** and recommended as the best environmental option due to the following reasons:

- The site is not mapped as an CBA or ESA or watercourse and is part of cultivated agricultural land making the site of low ecological connectivity and low conservation value and less favourable for rehabilitation investments.
- Historical sand mining has taken place on the property with successful rehabilitation of the mining areas to agricultural land used for cultivation.
- The site is not within a Protected Area, nor within 5 kilometres of a Protected Area, are not within 10 kilometres of a World Heritage Site.
- No flora or fauna Species of Conservation Concern (SCC) were recorded on the site and due to previous and ongoing disturbances the site is not expected to be used by any fauna SCC as breeding habitat.
- It is proposed that the temporary mining of sand and gravel as proposed on 5ha of the property at the specific site is the best economically viable option to be implemented for the specific site and that it can be successfully rehabilitated to its current status quo after mining completion.

EAP UNDERTAKING/DECLARATION

The EAP herewith confirms

- the correctness of the information provided in the reports ✓
-
- the inclusion of comments and inputs from stakeholders and I&APs ; ✓
- the inclusion of inputs and recommendations from the specialist reports where relevant; ✓ and
- that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein. ✓



Signature of the environmental assessment practitioner:

Enviro-EAP

Name of company:

Date: 18 September 2026

APPENDICES		Tick the box if Appendix is attached
Appendix A:	EAP CV and Qualifications	X
Appendix B:	Site plan(s) and photographs	X
Appendix C:	Proof of Public Participation Process	X
Appendix D:	Specialists Reports	X
Appendix E:	Financial and Technical Competence Report	X
Appendix F:	Mining Closure/Rehabilitation Plan	X
Appendix G:	Any Other (if applicable): G1: DEA Screening Tool Report and Site Sensitivity Verification Report	X

-END-