ZANDBERG SANDPUT (PTY) LTD

PORTION 4 OF THE FARM ZANDBERG FONTEIN 97

ROBERTSON MUNICIPAL DISTRICT

WESTERN CAPE PROVINCE

FINAL SCOPING REPORT

DEPARTMENTAL REFERENCE NUMBER:

WC 30/5/1/2/2/87 MR & WC 30/5/1/2/2/10080 MR

JULY 2020

PREPARED FOR:

Zandberg Sandput (Pty) Ltd

P.O. Box 717

Robertson

6705

Contact Person: Mrs GA Viljoen

Tel: 023 626 1836

E-mail: zandberg@barvallei.co.za

PREPARED BY:

Greenmined Environmental

Unit MO1, No 36 AECI site

Baker Square, Paardevlei

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EXECUTIVE SUMMARY

Zandberg Sandput (Pty) Ltd submitted a Section 102 amendment application to add 108.3851 ha to the current 17.6826 ha mining footprint. The S102 application necessitates an application for a Part 2 amendment of the mine's EMPR in terms of GNR 326 Section 31 (NEMA). The S102 application further constitute listed/specified activities in terms of the NEMA: EIA Regulations, 2014 (as amended) and therefore requires an environmental impact assessment (EIA) that informs the competent authority (Department of Mineral Resources and Energy) when considering the environmental authorisation.

Sand mining commenced in the 1980's on Portion 4 of the farm Zandberg fontein No 97, Robertson, with the MR Holder mining the area from 1994. In 2018, the mining right was ceded from WJ Viljoen to Zandberg Sandput (Pty) Ltd that is the current MR holder. The mining right is valid until 2047, with an approved footprint of 17.6826 ha.

The Zandberg mining method entails strip mining that is representative of the small scale mining industry where the sand is loaded with one front-end-loader (FEL) directly onto the trucks of clients that transport it from site. The MR Holder removes the topsoil of a strip of ±0.25 ha within which the sand is mined in a block of approximately 50 x 50 m. Topsoil is replaced over every mined-out strip (±0.25 ha) prior to the opening of the consecutive strip. Each rehabilitated strip is seeded to establish a vegetation cover that stabilise the reinstated topsoil. In light of this, at any given moment approximately ±0.5 ha of the mining area will be devoid/partially devoid of vegetation (±0.25 ha being mined, and ±0.25 ha rehabilitated and in the process of re-vegetating). Should the S102 application be approved, mining will advance into the extension area as the current mining footprint (±17.7 ha) is mined-out. The mining method will remain the same as the method currently implemented by the MR holder, and no infrastructure will be established in the extension area.

Alternatives:

Project/site alternatives does not apply to the current Zandberg operation. The mine's EMPR (2014) notes that no alternative has been looked at as this operation has been in existence since 1994.

For the Section 102 amendment application, the project team (thus far) identified one site alternative with a possibility of various layout alternatives that must be assessed during the EIA process and discussed in the EIAR. The layout of the mining area within the footprint of S1, or other site alternative (if identified), will be determined during the EIA process upon receipt of the specialist's input. Sensitive areas, identified by the specialist, will be portrayed on a map, of the proposed footprint, to deduce the allowable mining areas. Once the no-go (sensitive) areas were demarcated various layout alternatives will be investigated to identify the best possible option for the proposed activity.

Public Participation Process:

During the initial public participation process the stakeholders and I&AP's were informed of the project by means of background information documents that were sent directly to the contact persons. A 30 days commenting period was allowed that ended 02 March 2020. An advertisement was placed in the Breederivier Gazette and on-site notices were placed at the entrance to the farm and the Agri Express Mark in Robertson.

In accordance with the timeframes stipulated in the EIA Regulations, 2014 (as amended by GNR 326 effective 7 April 2017) the Draft Scoping Report (DSR) was compiled to allow perusal of the report by the I&AP's and stakeholders. A 30-day commenting period, ending 17 July 2020, was allowed for perusal of the documentation and submission of comments. The comments and responses received on the DSR were incorporated into the Final Scoping Report to be submitted to DMRE for decision making. Upon approval of the Final Scoping Report the Draft Environmental Impact Assessment Report (inclusive of specialist studies) will be compiled and circulated for public comment for a 30-day commenting period. The comments received on the draft EIA & EMPR will be incorporated into the final EIA & EMPR to be submitted for decision making to DMRE

Scoping Report:

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

Plan of Study for the Environmental Impact Assessment Process:

The aspects to be assessed as part of the environmental impact assessment process will include, but not be limited to, the following:

1. Various alternatives that will in turn dictate the design and layout of the proposed project.
2. Upon deciding on the preferred alternatives, the applicability of the listed activities identified in terms of the NEMA EIA Regulations, 2014 (as amended) will be aligned with the most recent proposal.
3. The need and desirability of the proposed activity will be discussed in detail and weighed against the no-go option of upholding the *status quo* at the study area.
4. The inputs received during the public participation process (first- and second phase) will be assessed and considered by the project team during the EIA process.
5. The findings, recommendations and management measure proposed in the specialist studies will be assessed during the EIA process and incorporated into the DEIAR.
6. The impact of the proposed project on the physical-, biological-, and human environments will be assessed.

7. Mitigation measures will be proposed to control, modify, remedy or stop the impacts associated with the proposed activity on the surrounding environment.
8. Any additional requirements submitted by the DMRE will be incorporated into the DEIAR and treated accordingly.

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LIST OF ACRONYMS

ABIA	Aquatic Biodiversity Impact Assessment
AIA	Agricultural Impact Assessment
ASTM	American Society for Testing and Materials
BGCMA	Breede-Gouritz Catchment Management Agency
BID	Background Information Document
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Areas
CN	CapeNature
CRR	Comments and Response Report
DEA&DP	Department of Environmental Affairs and Development Planning
DEIAR	Draft Environmental Impact Assessment Report
DMRE	Department of Mineral Resources and Energy
DRDLR	Department of Rural Development and Land Reform
DSR	Draft Scoping Report
DTPW	Department of Transport and Public Works
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPR	Environmental Management Programme
ENPAT	Environmental Potential Atlas for South Africa
ESA	Ecological Support Areas
FEIAR	Final Environmental Impact Assessment Report
FEL	Front-End-Loader
FEPA	Freshwater Ecosystem Priority Area
FSR	Final Scoping Report
GDP	Gross Domestic Product
HA	Hydrological Assessment
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
I&AP	Interested and Affected Party
LLM	Langeberg Local Municipality
MHSA	Mine Health and Safety Act, 1996 (Act No 29 of 1996)
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No 28 of 2002)

MR	Mining Right
NEM:AQA	National Environmental Management: Air Quality Control Act, 2004 (Act No 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No 59 of 2008)
NEMA	National Environmental Management Act, 1998 (Act No 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
NIA	Noise Impact Assessment
NID	Notice of Intend to Develop
NRTA	National Road Traffic Act, 1996 (Act No 25 of 1999)
NWA	National Water Act, 1998 (Act No 36 of 1998)
OHSA	Occupational Health and Safety Act, 1993 (Act No 85 of 1993)
PCB's	Polychlorinated Biphenyls
PCO	Pest Control Officer
PIA	Palaeontological Impact Assessment
PPE	Personal Protection Equipment
PSA	Plant Species Assessment
PSM	Palaeontological Sensitivity Map
S1	Site Alternative 1
SAHRA	South African Heritage Resources Agency
SAMBF	South African Mining and Biodiversity Forum
SAMRAD	South African Mining Mineral Resources Administration System
SANBI	South African National Biodiversity Institute
SANS	South African National Standards
SEA	Socio-economic Assessment
SLP	Social and Labour Plan
SPLUMA	Spatial Planning and Land Use Management Act, 2013 (Act No 16 of 2013)
TBIA	Terrestrial Biodiversity Impact Assessment
TIA	Traffic Impact Assessment
WCBSP	Western Cape Biodiversity Spatial Plan
WMA	Water Management Area
WULA	Water Use Licence Application

mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

FOR LISTED ACTIVITIES ASSOCIATED WITH MINING RIGHT AND/OR BULK SAMPLING ACTIVITIES INCLUDING TRENCHING IN CASES OF ALLUVIAL DIAMOND PROSPECTING

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: Zandberg Sandput (Pty) Ltd

TEL NO: 023 626 1836
FAX NO: -
POSTAL ADDRESS: P.O. Box 717, Robertson, 6705
PHYSICAL ADDRESS: Zandberg Fontein Farm, Robertson
FILE REFERENCE NUMBER SAMRAD: WC 30/5/1/2/2/87 MR & WC 30/5/1/2/2/10080 MR

IMPORTANT NOTICE

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

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

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

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or permit are submitted in the exact format of, and provide all the information required in terms of this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet 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 order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the Applicant.

OBJECTIVE OF THE SCOPING PROCESS

1) The objective of the scoping process is to, through a consultative process-

(a) identify the relevant policies and legislation relevant to the activity;
(b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
(c) identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
(d) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
(e) identify the key issues to be addressed in the assessment phase;
(f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site, and
(g) identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

SCOPING REPORT

2. CONTACT PERSON AND CORRESPONDENCE ADDRESS

a) Details of: Greenmined Environmental

In terms of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) the proponent/applicant must appoint an independent Environmental Assessment Practitioner (EAP) to undertake the environmental impact assessment (EIA) of any activities regulated in terms of the aforementioned Act. Zandberg Sandput (Pty) Ltd (hereinafter the "Applicant") appointed Greenmined Environmental (Pty) Ltd (hereinafter "Greenmined") to undertake the study needed. Greenmined has no vested interest in Zandberg Sandput (Pty) Ltd or the proposed project and hereby declares its independence as required by the EIA Regulations, 2014 (as amended 2017).

i) The EAP who prepared the report

Name of the Practitioner: Ms Christine Fouché (Senior Environmental Specialist)

Tel No: 021 851 2673 / 082 811 8514

Fax No: 086 546 0579

E-mail address: christine.f@greenmined.co.za

ii) Expertise of the EAP

(1) The qualifications of the EAP
(With evidence attached as **Appendix 1**)

Ms Fouché has a Diploma in Nature Conservation and a B.Sc. in Botany and Zoology. Full CV with proof of expertise is attached as Appendix 1.

(2) Summary of the EAP's past experience
(Attach the EAP's curriculum vitae as **Appendix 2**)

Ms Fouché has fifteen years' experience in doing Environmental Impact Assessments and Mining Applications in South Africa. See a list of past project attached as Appendix 2.

b) Description of the property

Farm Name:	Portion 4 of the farm Zandberg fontein No. 97
Application area (Ha)	⋉ Approved MR area: 17.6826 ha ⋉ Section 102 Application Area: 108.3851 ha ⋉ Total MR area: 126.0677 ha
Magisterial district	Robertson
Distance and direction from nearest town	The Zandberg Sand Mine is located ±7 km south-west of Robertson.
21 digit Surveyor General Code for each farm portion	C06500000000097000004

c) Locality map

(show nearest town, scale not smaller that 1:250000 as **Appendix 3**)

The requested map is attached as Appendix 3.

d) Description of the scope of the proposed overall activity

i) Listed and specified activities

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1:10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site and attach as **Appendix 4**

Zandberg Sandput (Pty) Ltd submitted a Section 102 ("S102") amendment application to add 108.3851 ha to the current 17.6826 ha mining footprint. The S102 application necessitates an application for a Part 2 amendment of the mine's EMPR in terms of GNR 326 Section 31. The S102 application further constitute listed/specified activities in terms of the NEMA: EIA Regulations, 2014 (as amended) and therefore requires an environmental impact assessment (EIA) that assess project specific environmental impacts and alternatives, consider public input, and propose mitigation measures, to ultimately culminate in an environmental management programme that informs the competent authority (Department of Mineral Resources and Energy) when considering the environmental authorisation.

See attached as Appendix 4 a copy of the preliminary site layout plan of the proposed extension area.

Table 1: Listed and specified activities triggered by the proposed S102 amendment application.

NAME OF ACTIVITY (All activities including activities not listed) (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	**AERIAL EXTENT OF THE ACTIVITY** Ha or m^2	**LISTED ACTIVITY** Mark with an X where applicable or affected.	**APPLICABLE LISTING NOTICE** (GNR 544, GNR 545 OR GNR 546)/NOT LISTED
Application for a Section 102 MPRDA, 2002 amendment of the mining right.	**126.0677 ha**	**X**	**GNR 324 LN 3 Activity 12** **GNR 325 LN 2 Activity 15, 17** **GNR 327 LN 1 Activity 28**
GNR 324 Listing Notice 3 Activity 12: *The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.* ***i. Western Cape*** *i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;* *ii. Within critical biodiversity areas identified in bioregional plans;*			
GNR 325 Listing Notice 2 Activity 15: *The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for-* *(i) the undertaking of a linear activity; or* *(ii) maintenance purposes undertaken in accordance with a maintenance management plan.*			
GNR 325 Listing Notice 2 Activity 17: *Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—* *(a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or* *(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;* *but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.*			
GNR 327 Listing Notice 1 Activity 28: *Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:* *(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;* *excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.*			
Demarcation of the extension area with visible beacons.	**108.3851 ha**	**N/A**	**Not listed**
Stripping and stockpiling of topsoil of each mining block.	**±0.25 ha/strip**	**X**	**GNR 324 LN 3 Activity 12** **GNR 325 LN 2 Activity 15**

NAME OF ACTIVITY (All activities including activities not listed) (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	AERIAL EXTENT OF THE ACTIVITY Ha or m^2	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 OR GNR 546)/NOT LISTED
			GNR 327 LN 1 Activity 28
GNR 324 Listing Notice 3 Activity 12: *The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.* ***i. Western Cape*** *i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;* *ii. Within critical biodiversity areas identified in bioregional plans;*			
GNR 325 Listing Notice 2 Activity 15: *The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for-* *(i) the undertaking of a linear activity; or* *(ii) maintenance purposes undertaken in accordance with a maintenance management plan.*			
GNR 327 Listing Notice 1 Activity 28: *Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:* *(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;* *excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.*			
Excavation of sand.	**±0.25 ha/strip**	**X**	**GNR 325 LN 2 Activity 17** **GNR 327 LN 1 Activity 28**
GNR 325 Listing Notice 2 Activity 17: *Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—* *(a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or* *(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;* *but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.*			
GNR 327 Listing Notice 1 Activity 28: *Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:* *(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;* *excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.*			

NAME OF ACTIVITY (All activities including activities not listed) (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	AERIAL EXTENT OF THE ACTIVITY Ha or m^2	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 OR GNR 546)/NOT LISTED
Replacing the topsoil upon closure of each strip.	**±0.25 ha/strip**	**X**	**GNR 327 LN 1 Activity 22** **GNR 327 LN 1 Activity 28**
GNR 327 Listing Notice 1 Activity 22: *The decommissioning of any activity requiring –* *(i) a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); or* *(ii) a prospecting right, mining right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure;* *but excluding the decommissioning of an activity relating to the secondary processing of a –* *(a) mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource; or* *(b) petroleum resource, including the refining of gas, beneficiation, oil or petroleum products; –* *in which case activity 31 in this Notice applies*			
GNR 327 Listing Notice 1 Activity 28: *Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:* *(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;* *excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.*			
Final rehabilitation and closure of the site.	**±0.25 ha (final strip)**	**X**	**GNR 327 LN 1 Activity 22**
GNR 327 Listing Notice 1 Activity 22: *The decommissioning of any activity requiring –* *(i) a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); or* *(ii) a prospecting right, mining right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure;* *but excluding the decommissioning of an activity relating to the secondary processing of a –* *(a) mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource; or* *(b) petroleum resource, including the refining of gas, beneficiation, oil or petroleum products; –* *in which case activity 31 in this Notice applies*			

ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, and for a linear activity, a description of the route of the activity)

Background Information:

Sand mining commenced in the 1980's on Portion 4 of the farm Zandberg fontein No 97, Robertson, with the MR Holder mining the area from 1994. In 2018, the mining right was ceded from WJ Viljoen to Zandberg Sandput (Pty) Ltd that is the current MR holder. The mining right is valid until 2047, with an approved footprint of 17.6826 ha.

The Zandberg mining method entails strip mining that is representative of the small scale mining industry where the sand is loaded with one front-end-loader (FEL) directly onto the trucks of clients that transports it from site. Little to no stockpiling is required and no washing of sand is needed. The MR Holder removes the topsoil of a strip of ±0.25 ha within which the sand is mined in a block of approximately 50 x 50 m. Topsoil is replaced over every mined-out strip (±0.25 ha) prior to the opening of the consecutive strip. Each rehabilitated strip is seeded to establish a vegetation cover that stabilise the reinstated topsoil. In light of this, at any given moment approximately ±0.5 ha of the mining area will be devoid/partially devoid of vegetation (±0.25 ha being mined, and ±0.25 ha rehabilitated and in the process of re-vegetating).

Table 2: GPS Coordinates of the approved mining right area.

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
BLOCK A				
G	33º50'41.92"	19º48'54.92"	-33.844978º	19.815256º
H	33º50'49.92"	19º48'56.52"	-33.847200º	19.815700º
I	33º50'52.18"	19º48'45.17"	-33.847827º	19.812547º
J	33º50'44.16"	19º48'43.56"	-33.845601º	19.812100º
K	33º50'42.81"	19º48'50.44"	-33.845225º	19.814011º
L	33º50'37.25"	19º48'49.99"	-33.843681º	19.813886º
M	33º50'37.92"	19º48'37.05"	-33.843867º	19.810292º
N	33º50'51.13"	19º48'38.18"	-33.847536º	19.810606º

Figure 1: Satellite view showing the location of the MR area (blue polygons) in relation to the surrounding landscape. (Image obtained from Google Earth)

Project Proposal:

The MR Holder submitted an application for consent of the minister to extend the existing mining right footprint of the Zandberg Sand Mine with 108.3851 ha, in terms of Section 102 of the MPRDA, 2002. The table below lists the GPS coordinates of the proposed extension area as shown on the Regulation 2(2) Mine Plan attached as Appendix 3.

Table 3: GPS Coordinates of the proposed S102 extension area.

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
L	33º50'37.25"	19º48'49.99"	-33.843681º	19.813886º
M	33º50'37.92"	19º48'37.05"	-33.843867º	19.810292º
N	33º50'51.13"	19º48'38.18"	-33.847536º	19.810606º
I	33º50'52.18"	19º48'45.17"	-33.847827º	19.812547º
R	33º51'15.84"	19º48'03.10"	-33.854400º	19.800862º
Q	33º51'00.47"	19º47'51.75"	-33.850163º	19.797751º
P	33º50'20.73"	19º48'34.09"	-33.839014º	19.809360º

The satellite image below shows the position of the proposed S102 extension area in relation to the approved MR area and surrounding landscape.

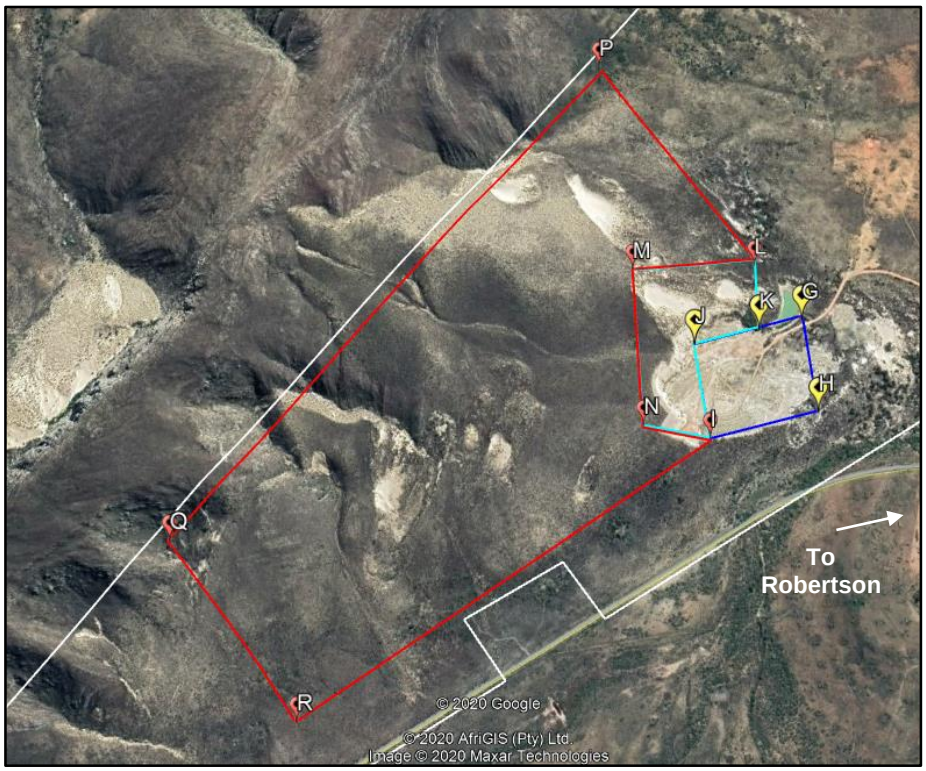


Figure 2: Satellite view showing the position of the proposed S102 extension area (red polygon) in relation to the approved MR area (blue polygons), and the surrounding landscape where the white line shows the property boundary. (Image obtained from Google Earth)

The proposed extension area will be developed over a section of the property that is zoned for agricultural purposes with a natural to near natural vegetation cover. Should the S102 application be approved, mining will advance into the extension area as the current mining footprint (±17.7 ha) is mined-out. The mining method will remain the same as the method currently implemented by the MR holder. No infrastructure will be established in the extension area.

In light of this, the Applicant intents to:

- strip and stockpile the topsoil of strips of ±0.25 ha as mining progress;
- excavate the sand and load it onto the trucks of clients; and
- landscape and replace the topsoil over the mined strip prior to the opening and mining of the consecutive strip.

Should the S102 amendment application be approved and the mining of sand from the extension area be allowed, the proposed project will comprise of activities that can be divided into three key phases (discussed in more detail below) namely the:

(1) *Site establishment phase*, which will involve the demarcation of the extension area and, if required, buffer no-go zones pertaining to areas of significant importance identified during the environmental impact assessment.

(2) *Operational phase* which will involve grading the topsoil off a ±0.25 ha strip. The topsoil will be stockpiled at the edge of the strip to be replaced during the rehabilitation of the area. The sand will be removed with a front-end-loader (FEL) that will load it directly onto the trucks of clients that transports it from site.

(3) *Decommissioning phase* which will include activities that can be divided into medium- and long term categories. In the medium term, rehabilitation will entail the continuous reinstatement of mined-out strips and the management of weeds and invasive plant species. In the long term, rehabilitation will involve final landscaping of the site, the replacement of the topsoil of the final strip and the removal of the FEL from site prior to the submission of a closure application to the Department of Mineral Resources and Energy (DMRE). The MR holder will further be responsible for the seeding of all rehabilitated areas. Once the full mining area is rehabilitated, the MR holder will be required to submit a closure application to the DMRE in accordance with section 43(4) of the MPRDA, 2002. The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998.

As mentioned earlier, should the project be authorised the mining area is expected to only contain one front-end-loader.

PHASES OF THE PROJECT

(1) Site Establishment Phase:

Site establishment entails the demarcation of the extension area boundaries and identified sensitive areas (if needed), as detailed below:

- **Demarcation of Mining Boundaries:**

  Pursuant to receipt of an Environmental Authorisation (EA) and Section 102 Mining Right (MR) amendment, and prior to mining, the boundary of the amended mining footprint has to be demarcated. Areas to be demarcated within the boundary of the site may include areas of concern identified during the environmental impact assessment phase. Identified buffer zones (if applicable) will clearly be demarcated as “no-go areas”.

(2) Operational Phase

The operational phase of the mine involves the removal of the topsoil of a strip of ±0.25 ha within which the sand is mined in a block of approximately 50 x 50 m. The topsoil is stockpiled at the edge of the strip to be replaced during the rehabilitation of the area. The sand is then removed from the stripped area with a FEL that loads it directly onto the trucks of clients.

Every mined-out strip (±0.25 ha) is rehabilitation before work continues at the consecutive phase/strip.

This method will persist as mining advances into the proposed extension area. The applicant intends to mine ±0.5 ha sand per year depending on market demand and sales.

See Figure 3 for a schematic representation of the proposed extension activity and the Site Activities Map attached as Appendix 4.

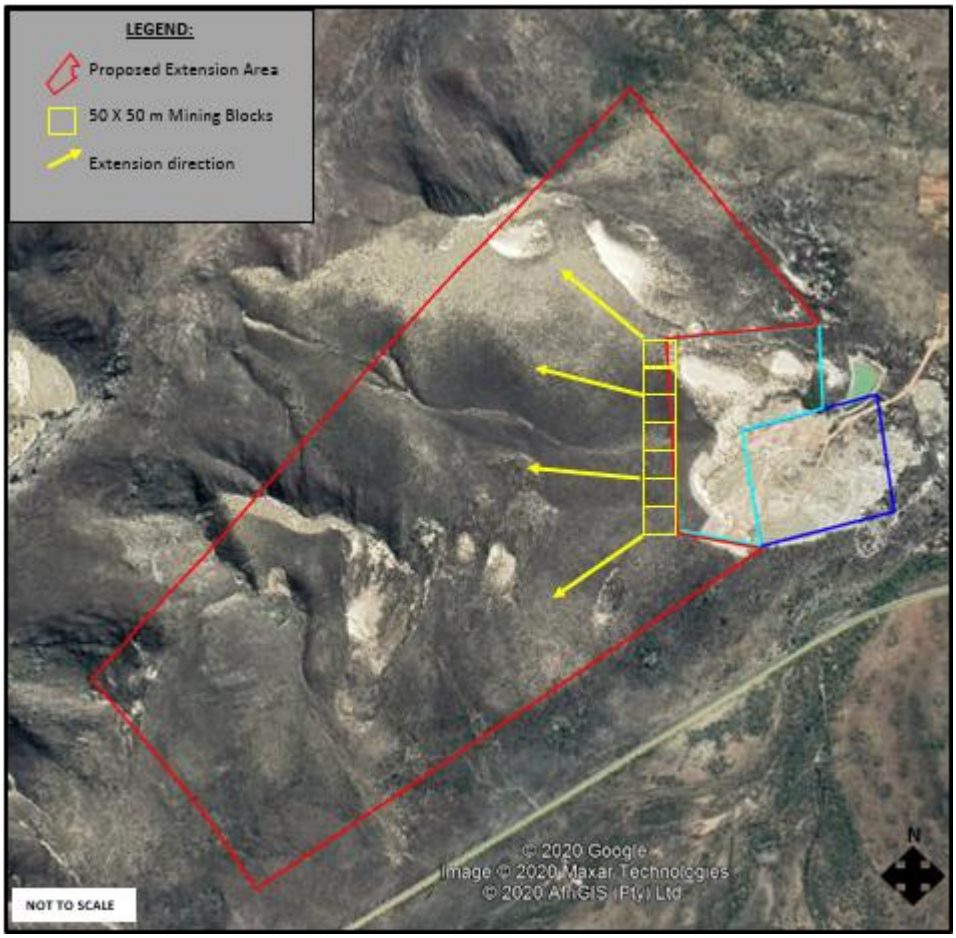


Figure 3: Schematic representation showing the proposed 0.25 ha strips (yellow blocks) in relation to the mining footprint (red polygon).

- **Clearing of Vegetation:**

  (Also refer to Part A(2)(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Groundcover)

  The proposed extension footprint falls across two vegetation types known as the Breede Sand Fynbos (FFd 8) and the North Sonderend Sandstone Fynbos (FFs 13). It also extends into the Langeberg Critical Biodiversity Area (CBA 1). As the extension of the mining area will necessitate the removal of indigenous vegetation to allow access to the mineral (sand), an ecologist was appointed to conduct a vegetation study of the entire

earmarked area. The botanist will assess the sensitivity and conservation status of the earmarked footprint, and propose buffer zones around areas of high conservation importance. The findings of the botanist will be incorporated into the draft Environmental Impact Assessment Report. The final layout of the site will be directed by the findings of the specialist, and clearing of the vegetation will be contained to the allowable areas within the mining footprint.

- **Topsoil Stripping:**

As mentioned earlier, the topsoil will be removed from a ±0.25 ha strip. The topsoil will be stockpiled along the edge of the strip to be replaced during the rehabilitation of the strip. In the circumstance, each strip will be rehabilitated as mining progresses. Topsoil stripping will entail the removal of the upper 300 mm of the soil, whether it contains sand (commodity) or not. The topsoil berms will not be driven over, contaminated, flooded or moved during the operational phase. The topsoil berm will measure a maximum of 1.5 m in height to prevent compaction and preserve micro-organisms within the topsoil.

- **Access Roads:**

The Applicant makes use of an existing gravel road that leads into the current mining area. The use of this road will continue and if needed be extended into the mining area as mining progresses. Should haul roads be needed where no farm roads exist the footprint of the haul roads will be contained to the approved mining area, specifically to areas where mining still needs to be done. No haul roads will be allowed over rehabilitated areas and upon closure of the site all haul roads, no longer needed by the landowner, will be ripped and rehabilitated. As mentioned earlier, the MR holder will only commence with the proposed activity once the sand resource in the existing mining area (±17.7 ha) is depleted. In light of this, the proposed activity will not increase the current traffic demand on the area, but merely ensure the continuation of it.

- **Water Use:**

Due to the nature of the sand being mined (heavy), very little to no water is needed as dust levels are typically low. Dust generated on the access road will as far as possible be managed through alternative dust suppression methods to prevent the use of water for dust suppression. These measures will include a combination of the following:

- The speed of all mining equipment/vehicles will be restrictions to 20 km/h on the internal farm roads/haul roads to minimize dust generation;

- The removal of vegetation will only be done immediately prior to the mining of an area in an attempt to lessen denuded areas (acting as dust source) to the absolute minimum.

- **Waste Handling:**

Due to the nature of the project, the small scale of the proposed operation, and the fact that no infrastructure has been/will be established or maintenance work is/will be done within the earmarked footprint, very little to no general waste is/will be generated as a direct result of the mining activities. Currently, the general waste of the site (minimal) is kept in the FEL/site vehicles until removed from site at the end of the day where it is incorporated into the existing waste disposal system of the farm, from where it is removed to the Robertson landfill site.

Likewise, very little (if any) generation of hazardous waste is applicable to this project. Hazardous waste is mainly the result of accidental spillages or breakdowns. Such contaminated areas are immediately (within first hour of the occurrence) cleaned and the contaminated soil is contained in a designated hazardous waste container that is daily (when applicable) removed to the MR holder's workshop on the farm, from where it is disposed of as part of the hazardous waste disposal system of the farm.

A chemical toilet, was placed on site, that will be serviced by a registered contractor.

- **Servicing and Maintenance:**

No workshop has been/will be established within the mining footprint. The FEL is removed to the off-site workshop on the farm or the town of Robertson when maintenance and/or servicing is needed. If emergency repairs are needed on equipment not able to move to the workshop, drip trays will be used under the machinery and all waste will be contained and removed from the emergency service area to the workshop to ensure proper disposal. The mining site does not require the storage of diesel, and fueling of the FEL is done at the farm yard or by means of a mobile diesel bowser with the use of drip trays.

- **Electricity:**

The mining operation does not require electricity.

(3) Decommissioning phase:

The closure objectives will be detailed in the Environmental Impact Assessment Report and Environmental Management Programme (EMPR), to be submitted as part of the application

process for approval by the Department of Mineral Resources and Energy. As mentioned earlier, rehabilitation will include activities to be divided into medium- and long term categories. In the medium term, rehabilitation will entail the continuous reinstatement and seeding of mined-out strips, and the management of weeds and invasive plant species. In the long term, rehabilitation will involve final landscaping of the site, the replacement of the topsoil on the final strip and the removal of the FEL prior to the submission of a closure application to the Department of Mineral Resources and Energy (DMRE). The MR holder will further be responsible for the seeding of all rehabilitated areas. The botanist will advise on the best species to be used in the re-instatement of the mining area.

At this stage the following baseline rehabilitation actions are proposed from which a detailed Closure Plan will be developed (to be approved as part of the EIA process):

- Rehabilitation of all the disturbed surface areas shall entail landscaping, levelling, sloping, top dressing, land preparation, seeding (if required), and weed / alien clearing.
- If applicable, all unwanted infrastructures, equipment, and other items used during the mining period will be removed from the site in accordance with section 44 of the MPRDA, 2002.
- Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the mining area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.
- The rehabilitation area will be cleared of weeds and invader plant species. Priority will be given to species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto).
- Final rehabilitation shall be completed within a period specified by the Regional Manager.

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

e) Policy and Legislative Context

Table 4: Applicable legislation and guidelines used to compile the report.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process).	**REFERENCE WHERE APPLIED**
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).	The mitigation measures proposed for the site includes specifications of the CARA, 1983.
Guideline on Need and Desirability	The need and desirability of the project was assessed in accordance with these guidelines.
Langeberg Local Authority Integrated Development Plan (IDP)	The IDP was used in the assessment of the socio economic profile of the receiving community.
Langeberg Land Use Planning Bylaw (264/2015) Langeberg Municipality – Integrated Zoning Scheme Bylaw (7929/2018)	The proposed project requires a land use application to the Langeberg Local Municipality in terms of their Land Use Planning Bylaws. A town and regional planner will be appointed to commence with this application.
Mine Health and Safety Act, 1996 (Act No. 29 of 1996) read together with applicable amendments and regulations thereto including relevant OHSA regulations.	The mitigation measures proposed for the site take into account the MHSA, 1996.
Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002) read together with applicable amendments and regulations thereto. ℵ Section 102 amendment application.	Application for a Section 102 amendment application submitted to the DMRE-WC. Ref No. WC30/5/1/2/2/87MR & WC30/5/1/2/2/10080MR
National Environmental Management Act,1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended by GNR 326 effective 7 April 2017): ℵ GNR 324 Listing Notice 3 Activity 12 ℵ GNR 325 Listing Notice 2 Activity 15	Application for environmental authorisation. Reference number: WC30/5/1/2/2/87MR & WC30/5/1/2/2/10080MR.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process).	**REFERENCE WHERE APPLIED**
⁜ GNR 325 Listing Notice 2 Activity 17 ⁜ GNR 327 Listing Notice 1 Activity 22 ⁜ GNR 327 Listing Notice 1 Activity 28	
National Environmental Management: Air Quality Control Act, 2004 (Act No. 39 of 2004) read together with applicable amendments and regulations thereto specifically the National Dust Control Regulations, GN No R827.	The mitigation measures proposed for the project take into account the NEM:AQA, 2004 and the National Dust Control Regulations.
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) read together with applicable amendments and regulations thereto.	The mitigation measures proposed for the site includes specifications of the NEM:BA, 2004. A botanical assessment of the study area will be conducted.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) read together with applicable amendments and regulations thereto. NEM:WA, 2008: National norms and standards for the storage of waste (GN 9260).	The mitigation measures proposed for the site take into account the NEM:WA, 2008.
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	A Notice of Intent to Develop in terms of Section 38(8) of the NHRA, 1999 was submitted to Heritage Western Cape for commenting and a Heritage Impact Assessment (inclusive of an archaeological- and palaeontological impact assessment) will be conducted. The mitigation measures proposed for the site includes specifications of the NHRA, 1999.
National Road Traffic Act, 1996 (Act No. 93 of 1996)	The mitigation measures proposed for the project take into account the NRTA, 1996.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process).	**REFERENCE WHERE APPLIED**
National Water Act, 1998 (Act No. 36 of 1998) read together with applicable amendments and regulations thereto. Department of Water Affairs and Forestry Best Practice Guideline Series (2007).	The mitigation measures proposed for the site includes specification of the NWA, 1998.
Public Participation Guideline in terms of the NEMA EIA Regulations.	Public participation was conducted in accordance with the public participation guidelines.
Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)	The proposed project requires a land development application to Provincial Government (DEA&DP). A town and regional planner will be appointed to handle this application.
The South African Constitution.	To be upheld throughout the EIA assessment, planning-, construction-, operational- and decommissioning phases.
Western Cape Biodiversity Spatial Plan	The proposed extension area is currently zoned as agriculture, and a rezoning application will be prepared and submitted by a Town and Regional Planner.
Western Cape Noise Control Regulations (PN 200/2013), June 2013.	The mitigation measures proposed for the site take into account the Western Cape Noise Control Regulations, 2013.
Western Cape Land Use Planning Act, 2014 (Act No 3 of 2014)	The proposed project requires a land development application to Provincial Government (DEA&DP) in terms of Section 53 of the Land Use Planning Act, 2014. A town and regional

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process).	**REFERENCE WHERE APPLIED**
	planner will be appointed to handle this application.

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).

Sand mining commenced in the 1980's on Portion 4 of the farm Zandberg fontein No 97, Robertson, with the MR Holder mining the area from 1994. The sand of the Zandberg Sand Mine is of excellent quality and is sold to the building-, civil-, and construction industries within the Western Cape Province. The Zandberg sand is free of organic matter such as Port Jackson (*Acacia saligna*) and Redeye Wattle/Rooikrans (*Acacia cyclops*) seeds. In the building industry this is important as "contaminated" sand causes popping of plaster when the contaminants (seeds) react with the moisture in the mixture, expand and cause cavities in the plaster.

The MR holder identified the need to include the rest of the sand resource on the property into the approved mining area so as to ascertain and prolong the lifespan of the sand mine. The increase in building-, construction- and road maintenance projects in the vicinity of the property motivated the continued operation of the mine. The sand mine operation is of very small scale and the extension of the footprint will not necessarily increase the impact of the operation on the surrounding environment provided that strip mining continues, progressive rehabilitation is implemented and no-go areas are maintained over sensitive botanical areas (when identified).

The mine employs one operator (excluding management) that is from the local community. In addition, thereto the implementation of the Social and Labour Plan (which is obligatory for a mining right holder) contributes positively to the socio-economic environment of the local community.

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

Table 5: Need and desirability determination.

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
How were ecological integrity considerations taken into account?	As discussed under Heading *2(h)(iv)(1)(a) Type of environment affected by the proposed activity*, the Mining and Biodiversity Map shows that the proposed extension area extends over an area of highest biodiversity importance with a corresponding rating of highest risk for mining. According to the 2017 WCBSP, the Langeberg CBA 1 extends across the earmarked area. Two vegetation types were identified within the study area namely the Breede Sand Fynbos (VU) and the North Sonderend Sandstone Fynbos (LC). Nkurenkuru Ecology and Biodiversity will conduct a botanical study of the proposed extension footprint. The study will describe the *status quo* with regard to vegetation cover, identify CBA's, ESA's and other areas/species of concern and proposed buffer zones, mitigation measures, and management actions to be considered during the EIA process. The findings of the study will be collated onto a sensitivity map to be overlain by the footprint of the proposed mining area. The study will be incorporated into the DEIAR.	Need and desirability to be determined during the following EIAR phase.
How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity?	Should the current proposal be approved the project will entail the gradual (±0.25 ha/strip) removal of ±108 ha of natural vegetation from the footprint to allow access to the mineral. The above mentioned botanical study will describe the *status quo* with regard to vegetation cover, identify CBA's, ESA's and other areas/species of concern and proposed buffer zones, mitigation measures, and management actions to be considered during the EIA process. The findings of the study will be collated onto a sensitivity map to be overlain by the footprint of the proposed mining area. The study will be incorporated into the DEIAR.	
How will this development pollute and/or degrade the biophysical environment?	Due to the small scale and nature of the sand mining activity (excavation of sand with one FEL) the pollution potential is of low significance. The strip mining method ensures continued reinstatement of mined-out areas, thereby keeping the impact on the receiving environment as low as possible.	

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
	The potential of the proposed extension of the mining footprint degrading the biophysical environment will be determined once the findings of the specialists were received.	
What waste will be generated by this development?	The general waste generated by the mine mainly consist of items such as food wrappers of the FEL operator. This is kept within the site vehicles and daily removed from site. As mentioned earlier, hazardous waste is mainly the result of accidental spillages/breakdowns. Such contaminated areas are immediately (within first hour of the occurrence) cleaned and the contaminated soil is contained in a designated hazardous waste container that is daily (when applicable) removed to the MR holder's workshop on the farm, from where it is disposed of as part of the hazardous waste disposal system of the farm. The chemical toilet will be serviced by an accredited contractor. No waste is/will be disposed of or treated on the farm.	Highly Desirable
How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage?	The MR Holder has been mining sand from the property for the past 26 years. Sand mining, on this property, however commenced in the 1980's with the surrounding areas mainly used for grazing by the landowner. In light of this, sand mining has become a known activity of the Zandberg fontein property. However, when the footprint of the proposed extension area is placed on the PSM, it extends over areas of high concern. As mentioned earlier, an archaeologist and palaeontologist will be appointed to investigate the cultural/heritage sensitivity of the study area. The findings of the specialist will be included into the DEIAR.	Need and desirability to be determined during the following EIAR phase.
How will this development use and/or impact on non-renewable natural resources?	The Zandberg Sand Mine sells the sand mined from the approved portion of Portion 4 of the farm Zandberg fontein No 97. Presently, it is believed that the proposed extension area may have an inferred sand reserve of >7 000 000 m^3. Based on the current production rate, the sand resource shows a potential life of mine of >200 years. In light of this, it is believed that the MR holder responsibly consumes the sand resource on the property.	Highly Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part?	The sand mine does not make use of electricity and very little (if any) water is needed to allow the operation of the activity.	Highly Desirable
How were a risk-averse and cautious approach applied in terms of ecological impacts?	The findings of the botanist will be assessed and various layout alternatives will be proposed to minimise the impact of the mining activity on biological sensitive areas.	Need and desirability to be determined during the following EIAR phase.
How will the ecological impacts resulting from this development impact on people's environmental right?	The mine is managed in accordance with the agricultural practices of the farm. As mentioned in Heading *3(j)(1) Impact on the socio-economic condition of any directly affected person*, the activity may have an impact on the visual characteristics of the surrounding environment, and may potentially affect air quality and possibly the noise ambiance of the study area. The degree and significance of the listed impacts will be assessed during the following EIAR phase. By nature these impacts require constant monitoring to be implemented throughout the operational-, and decommissioning phases of the project.	
Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts.	Sand mining commenced in the 1980's on the farm Zandberg fontein, and the revenue generated by the mine has since then contributed as an additional source of income (rental) to the landowner. The Zandberg Sand Mine is well known in the surrounding community and to date no serious environmental or socio-economic impacts were identified to indicate/motivate the closure of the operation. The mine employs one local resident and contributes to the community as part of its SLP obligations. The proposed extension (if approved) will contribute to the continued existence of the mine as an important sand supplier in the Robertson and greater Langeberg area.	Highly Desirable
Based on all of the above, how will this development positively or negatively impact on	The impact of the proposed extension will be determined once the findings of the specialists were received and the layout alternatives finalised.	Need and desirability to be determined

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
ecological integrity objectives/targets/considerations of the area?		during the following EIAR phase.
Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified, resulted in the selection of the "best practicable environmental option" in terms of ecological considerations	The findings of the botanist will be assessed and various layout alternatives will be proposed to minimise the impact of the mining activity on biological sensitive areas. These findings will be collated in the draft EIAR that will be distributed for public perusal and commenting. Following the commenting period, the project proposal will be finalised.	Need and desirability to be determined during the following EIAR phase.

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
What is the socio-economic context of the area?	Please refer to Heading 2(h)(iv)(1)(a) Socio-economic Environment.	Highly Desirable
Considering the socio-economic context, what will the socio-economic impacts be of the	As mentioned earlier, the Zandberg Sand Mine has been operational for the past 26 years. The mine is a known supplier of sand in the Robertson community and contributes directly to society through the employment of a local resident as well as the	

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
development, and specifically also on the socio-economic objectives of the area?	Local Economic Development (LED) commitments of the mine (stipulated in the SLP). Indirectly, the mine contributes to infrastructure development in the surrounding area (sand supplier) and the spending of wages in the Robertson area.	
How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	The mine supplies sand to the building industry in the Robertson and greater Langeberg area. In addition, the mine has to meet the commitments of the SLP regarding Human Resources Development, Local Economic Development, and the process pertaining to management of downscaling and retrenchment. Through the past 26 years, the mine did not affect the physical, psychological, cultural or social needs of the community in a negative manner. Nor will the proposed extension of the mining footprint impact negatively on the socio-economic status of the area.	Highly Desirable
Will the development result in equitable impact distribution, in the short- and long-term?	The Zandberg Sand Mine has been operating in a socially and economically sustainable manner during both the short- and long term.	Highly Desirable
In terms of location, describe how the placement of the proposed development will contribute to the area.	The sand resource on the property has been mined since the 1980's, and as mentioned earlier, is a well-known sand supplier in the area. The preferred layout of the proposed extension area will be determined during the following EIAR phase once the findings of the specialists were received.	Need and desirability to be determined during the following EIAR phase.
How were a risk-averse and cautious approach applied in terms of socio-economic impacts?	No negative socio-economic impacts could, at this stage, be identified that cannot be managed through the implementation of mitigation measures.	Highly Desirable

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
How will the socio-economic impacts resulting from this development impact on people's environmental right?	As mentioned in Heading *3(j)(1) Impact on the socio-economic condition of any directly affected person*, the activity may have an impact on the visual characteristics of the surrounding environment, and may potentially affect air quality and possibly the noise ambiance of the study area. The degree and significance of the listed impacts will be assessed during the following EIAR phase. By nature these impacts require constant monitoring to be implemented throughout the operational-, and decommissioning phases of the project.	Need and desirability to be determined during the following EIAR phase.
Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts?	Sand mining commenced in the 1980's on the farm Zandberg fontein, and the revenue generated by the mine has since then contributed as an additional source of income (rental) to the landowner. The Zandberg Sand Mine is well known in the surrounding community and to date no serious environmental or socio-economic impacts were identified to indicate/motivate the closure of the operation. The mine employs one local resident (excluding management) and contributes to the community as part of its SLP obligations. The proposed extension (if approved) will contribute to the continued existence of the mine as an important sand supplier in the Robertson and greater Langeberg area.	Need and desirability to be determined during the following EIAR phase.
What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	The findings of the botanist will be assessed and various layout alternatives will be proposed to minimise the impact of the mining activity on biological sensitive areas. These findings will be collated in the draft EIAR that will be distributed for public perusal and commenting. Following the commenting period, the project proposal will be finalised.	
What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against		

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
any person, particularly vulnerable and disadvantaged persons?		
What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	The mine operates in accordance with, amongst others, the following: ⁜ CARA, 1983 – to ensure agriculture related compliance; ⁜ Financial Provision Regulations, 2015 – to ensure compliance in terms of rehabilitation; ⁜ Mine Health and Safety Act, 1996 (as amended) – to ensure employee safety; ⁜ MPRDA, 2002 (as amended) – to ensure mining related compliance; ⁜ NEM:AQA, 2004 – to ensure air quality related compliance; ⁜ NEM:BA, 2004 – to ensure biodiversity related compliance; ⁜ NEM:WA, 2008 – to ensure waste related compliance; ⁜ NEMA, 1998 (as amended) – to ensure environmental related compliance; ⁜ The land use zoning of the current mining footprint is also in line with the Land Use Planning Acts and Bylaws. Should the S102 amendment application be approved the extension area will also be subject to compliance with the above listed.	Highly Desirable
What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?		
Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community that is consistent with the priority needs of the local area.	The mine supplies sand to the building industry in the Robertson and greater Langeberg area. In addition, the mine has to meet the commitments of the SLP regarding Human Resources Development, Local Economic Development, and the process pertaining to management of downscaling and retrenchment.	Highly Desirable

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected.	The mine operates in accordance with the specifications of the Mine Health and Safety Act, 1996. Site management holds daily discussions with the FEL operator regarding the work to be performed and the environment in which the work will take place. Grievances/concerns can be lodged during the daily site meetings.	Highly Desirable
Describe how the development will impact on job creation in terms of, amongst other aspects?	This application is for the extension of the existing mining area and no new job opportunities will be created. However, should the application be successful the job security of the current employee will be extended in accordance with the increased lifespan of the mine.	Highly Desirable
What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage.	The Zandberg Sand Mine operates under a valid mining right issued by the DMRE. Compliance of the mine with the approval conditions is reported on as per the departmental specifications. Should the S102 amendment application be approved the extension area will also be managed in accordance with all the mining and environmental related legislations.	Highly Desirable
Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left.	It is believed that the preliminary list of mitigation measures proposed in this document is realistic and can be implemented (when needed) by the mine. Should the mine continue with the strip mining method and progressive rehabilitation, the residual impact on the environment is of low significance.	Highly Desirable

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution environmental damage or adverse health effects will be paid for by those responsible for harming the environment.	In terms of Section 41 of the MPRDA, 2002 a mining right holder must submit a financial provision to the DMRE that is sufficient to rehabilitate or manage the negative environmental impacts related to the mining activity. The Zandberg Sand Mine has a bank guarantee lodged with the DMRE that is deemed sufficient to cover the financial provision amount needed to rehabilitated the mining footprint. Should the S102 amendment application be approved and the DMRE require a change to the current bank guarantee the document will be amended accordingly.	Highly Desirable
Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified, resulted in the selection of the best practicable environmental option in terms of socio-economic considerations	The findings of the botanist will be assessed and various layout alternatives will be proposed to minimise the impact of the mining activity on biological sensitive areas. These findings will be collated in the draft EIAR that will be distributed for public perusal and commenting. Following the commenting period, the project proposal will be finalised.	Need and desirability to be determined during the following EIAR phase.
Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area.	This application is for the extension of the current mining area. As mentioned earlier, should the S102 application be approved, the extension of the footprint will not cause a cumulative socio-economic impact as mining will gradually progress into the extension area, while the current mining method will persist.	Highly Desirable

g) Period for which the environmental authorization is required

The MR holder requests that the Environmental Authorisation (EA) be valid for at least the duration of the mining right.

h) Description of the process followed to reach the proposed preferred site.

NB!! This section is not about the impact assessment itself, It is about the determination of the specific site layout having taken into consideration (1) the comparison of the originally proposed site plan, the comparison of that plan with the plan of environmental features and current land uses, the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout as a result.

i) Details of all 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

Approved Zandberg Sand Mine:

Project/site alternatives does not apply to the current Zandberg operation. The mine's EMPR (2014) notes that no alternative has been looked at as this operation has been in existence since 1994.

Proposed Extension Area:

Thus far, the project team identified one site alternative with a possibility of various layout alternatives that must be assessed during the EIA process and discussed in the EIAR.

Site Alternative 1 (S1) (Preferred Site Alternative): Presently, Site Alternative 1 entails the extension of the current mining footprint (17.6826 ha) with 108.3851 ha over Portion 4 of the farm Zandberg fontein No 97, within the boundaries of the following GPS coordinates:

Table 6: GPS coordinates of the proposed mining footprint area.

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
BLOCK A				
G	33º50'41.92"	19º48'54.92"	-33.844978º	19.815256º
H	33º50'49.92"	19º48'56.52"	-33.847200º	19.815700º
I	33º50'52.18"	19º48'45.17"	-33.847827º	19.812547º
J	33º50'44.16"	19º48'43.56"	-33.845601º	19.812100º
K	33º50'42.81"	19º48'50.44"	-33.845225º	19.814011º
L	33º50'37.25"	19º48'49.99"	-33.843681º	19.813886º
M	33º50'37.92"	19º48'37.05"	-33.843867º	19.810292º

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
N	33º50'51.13"	19º48'38.18"	-33.847536º	19.810606º
P	33º50'20.73"	19º48'34.09"	-33.839014º	19.809360º
Q	33º51'00.47"	19º47'51.75"	-33.850163º	19.797751º
R	33º51'15.84"	19º48'03.10"	-33.854400º	19.800862º

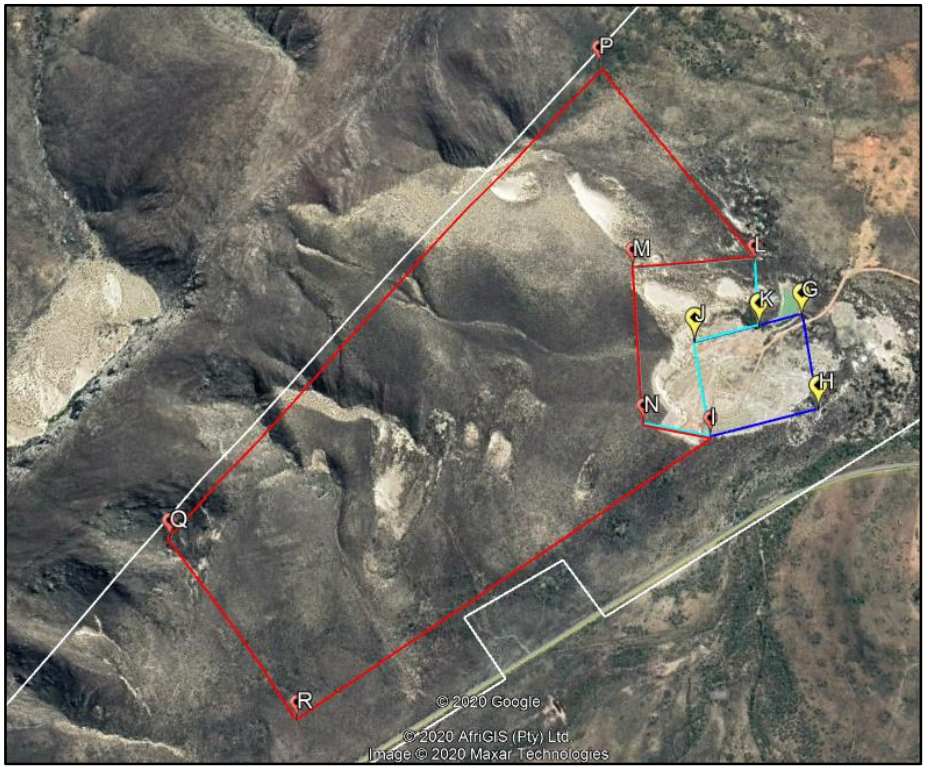


Figure 4: Satellite view showing the position of Site Alternative 1 within the surrounding landscape, where the blue polygons show the current mining footprint, the red polygon shows the proposed extension area and the white lines show the farm boundary. (Image obtained from Google Earth)

Site Alternative 1 was identified during the planning phase by the MR holder and project team, as the preferred site alternative based on the following:

- The proposed footprint offers the MR holder access to the sand deposit on the property.
- The extension of the mining area will prolong the lifespan of the Zandberg Sand Mine.
- Access to the proposed mining area is possible from the existing farm road with a formal (existing) entrance onto the La Chasseur/Agter-Kliphoogte road.
- The proposed strip mining method and associated progressive rehabilitation of the area will minimise the visual impact of the activities on the receiving environment.

Should additional viable site alternatives be identified during the EIA process, the project team will heed the suggestions, and investigate the possible implementation thereof. Such site alternatives (if identified) will be discussed in detail in the draft EIAR to be distributed for public comments

Layout Alternatives: The layout of the mining area within the footprint of S1, or other site alternative (if identified), will be determined during the EIA process upon receipt of the specialist's input. Sensitive areas, identified by the specialist, will be portrayed on a map, of the proposed footprint, to deduce the allowable mining areas. Once the no-go (sensitive) areas were demarcated various layout alternatives will be investigated to identify the best possible option for the proposed activity.

No-go Alternative: The no-go alternative entails no change to the *status quo* and is therefore a real alternative that needs to be considered. In the event that the no-go alternative is implemented the land use of the earmarked footprint will remain that of agriculture, and livestock farming with the sand resource unmined. Amongst others, the impact of mining on current, and future land uses of the study area will be compared to the *status quo* and will be considered as part of the EIA process, and discussed in the DEIAR.

ii) Details of the Public Participation Process Followed

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

During the initial public participation process the stakeholders and I&AP's were informed of the project by means of background information documents that were sent directly to the contact persons. A 30 days commenting period was allowed that expired 02 March 2020. The following table provides a list of the I&AP's and stakeholders that were informed of the project:

Table 7: List of the landowners, I&AP's and stakeholders that were supplied with a copy of the background information document.

LANDOWNERS & INTERESTED AND AFFECTED PARTIES	STAKEHOLDERS
Landowner: Zandbergfontein Trust Portion 4 of Zandberg Fontein 97 **Surrounding Landowners and I&AP's:** Lamaison Goree Trust Portion 0 of Zand Berg 101 P du Toit Portion 0 of Zandbult 98 Deorista 113 (Pty) Ltd Portion 0 of Die Gwarries 93 & RE of Laughing Waters 96	Breede-Gouritz Catchment Management Agency; Cape Winelands District Municipality; CapeNature; Department of Agriculture, Forestry and Fisheries; Department of Economic Development and Tourism; Department of Environmental Affairs and Development Planning; Department of Labour; Department of Rural Development and Land Reform – Western Cape District Offices; Department of Social Development; Department of Transport and Public Works; Department of Water and Sanitation; Eskom; Heritage Western Cape;

LANDOWNERS & INTERESTED AND AFFECTED PARTIES	STAKEHOLDERS
⁎ Shalk Colyn Trust Portion 2 (RE) of Klip Berg 136 ⁎ Mazi (Pty) Ltd RE of Farm 194 ⁎ AN Viljoen Portion 2 (RE) of Appels Drift 107 & Portion 0 of Farm 109 ⁎ Deo Volente Sand-mine (I&AP) ⁎	⁎ Langeberg LM: Ward 5 Councillor; ⁎ Langeberg Local Municipality; ⁎ South African Heritage Resources Agency.
I&AP'S AND STAKEHOLDERS THAT REGISTERED / COMMENTED DURING THE INITIAL NOTIFICATION PERIOD	
⁎ Breede-Gouritz Catchment Management Agency; ⁎ CapeNature; ⁎ Department of Environmental Affairs and Development Planning (DEA&DP); ⁎ Department of Transport and Public Works (DTPW); ⁎ Heritage Western Cape (HWC); ⁎ Langeberg Local Municipality (LLM); ⁎ D Satchel (Deo Volente Sand-mine).	

An advertisement was placed in the Breederivier Gazette on 28 January 2020 and on-site notices were placed on 25 January 2020 at the entrance to the farm and the Agri Express Mark in Robertson. The advertisement, background information document (BID) and on-site notices invited the recipients to register/comment on the project on/before 02 March 2020.

In accordance with the timeframes stipulated in the EIA Regulations, 2014 (as amended by GNR 326 effective 7 April 2017) the Draft Scoping Report (DSR) was compiled to allow perusal of the report by the I&AP's and stakeholders listed above. A 30-day commenting period, ending 17 July 2020, was allowed for perusal of the documentation and submission of comments. The following table provides a list of the I&AP's and stakeholders that were informed of the availability of the DSR:

Table 8: List of the landowners, I&AP's and stakeholders that were invited to comment on the DSR.

LANDOWNERS & INTERESTED AND AFFECTED PARTIES	STAKEHOLDERS
Landowner: ᛝ Zandbergfontein Trust Portion 4 of Zandberg Fontein 97 **Surrounding Landowners and I&AP's:** ᛝ Lamaison Goree Trust Portion 0 of Zand Berg 101 ᛝ P du Toit Portion 0 of Zandbult 98 ᛝ Deorista 113 (Pty) Ltd Portion 0 of Die Gwarries 93 & RE of Laughing Waters 96 ᛝ Shalk Colyn Trust Portion 2 (RE) of Klip Berg 136 ᛝ Mazi (Pty) Ltd RE of Farm 194 ᛝ AN Viljoen Portion 2 (RE) of Appels Drift 107 & Portion 0 of Farm 109 ᛝ Deo Volente Sand-mine (I&AP)	ᛝ Breede-Gouritz Catchment Management Agency; ᛝ Cape Winelands District Municipality; ᛝ CapeNature; ᛝ Department of Agriculture, Forestry and Fisheries; ᛝ Department of Economic Development and Tourism; ᛝ Department of Environmental Affairs and Development Planning; ᛝ Department of Labour; ᛝ Department of Rural Development and Land Reform – Western Cape District Offices; ᛝ Department of Social Development; ᛝ Department of Transport and Public Works; ᛝ Eskom; ᛝ Heritage Western Cape; ᛝ Langeberg LM: Ward 5 Councillor; ᛝ Langeberg Local Municipality; ᛝ South African Heritage Resources Agency.
I&AP'S AND STAKEHOLDERS THAT COMMENTED ON THE DSR	
ᛝ Department of Environmental Affairs and Development Planning (DEA&DP); ᛝ Department of Transport and Public Works (DTPW); and ᛝ Langeberg Local Municipality (LLM).	

The comments and responses received on the DSR were incorporated into the Final Scoping Report to be submitted to DMRE for decision making. Upon approval of the Final Scoping Report the Draft Environmental Impact Assessment Report (inclusive of specialist studies) will be compiled and circulated for public comment for a 30-day commenting period. The comments received on the draft EIA & EMPR will be incorporated into the final EIA & EMPR to be submitted for decision making to DMRE.

See attached as Appendix 5 proof that the I&AP's and stakeholders were contacted.

iii) Summary of issues raised by I&Aps

(Complete the table summarizing comments and issues raised, and reaction to those responses)

Table 9: Summary of issues raised by I&AP's and stakeholders.

Interested and Affected Parties **List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted**		**Date Comments Received**	**Issues raised**	**EAP's response to issues raised by the Applicant**
AFFECTED PARTIES		**-**	**-**	**-**
Landowner/s	**X**	**-**	**-**	**-**
Portion 4 of Zandberg fontein 97 ⁒ Zandbergfontein Trust	X	The landowner is aware of, and supports, the application.		
Lawful occupier/s of the land		No lawful occupiers, other than the landowner, has access to the property.		
N/A	**-**	-	-	-
Landowners or lawful on adjacent properties	**X**	**-**	**-**	**-**
Lamaison Goree Trust ⁒ Portion 0 of Zand Berg 101	X	To date no comments were received.		
Mr P du Toit (trustee of Lamaison Goree Trust) ⁒ Portion 0 of Zandbult 98	X	To date no comments were received.		

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted		Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
Deorista 113 (Pty) Ltd (Mr J Rabie) ⁎ Remaining Extent of Laughing Waters 96 ⁎ Portion 0 of Die Gwarries 93	X	To date no comments were received.		
Shalk Colyn Trust (Mr S Colyn) ⁎ Portion 2 (Remaining Extent) of Klip Berg 136		To date no comments were received.		
Mazi (Pty) Ltd (Me A Lambrecht) ⁎ Remaining Extent of Farm 194		To date no comments were received.		
Mr AN Viljoen (trustee of Lamaison Goree Trust) ⁎ Portion 2 (Remaining Extent) of Appels Drift 107 ⁎ Portion 0 of Farm 109		To date no comments were received.		
Municipal councillor Ward 5	**X**	To date no comments were received.		
Municipality	**X**	28 January 2020	Me T Brunings commented on behalf of the LLM as follows.	Greenmined responded as listed below on 30 January 2020.

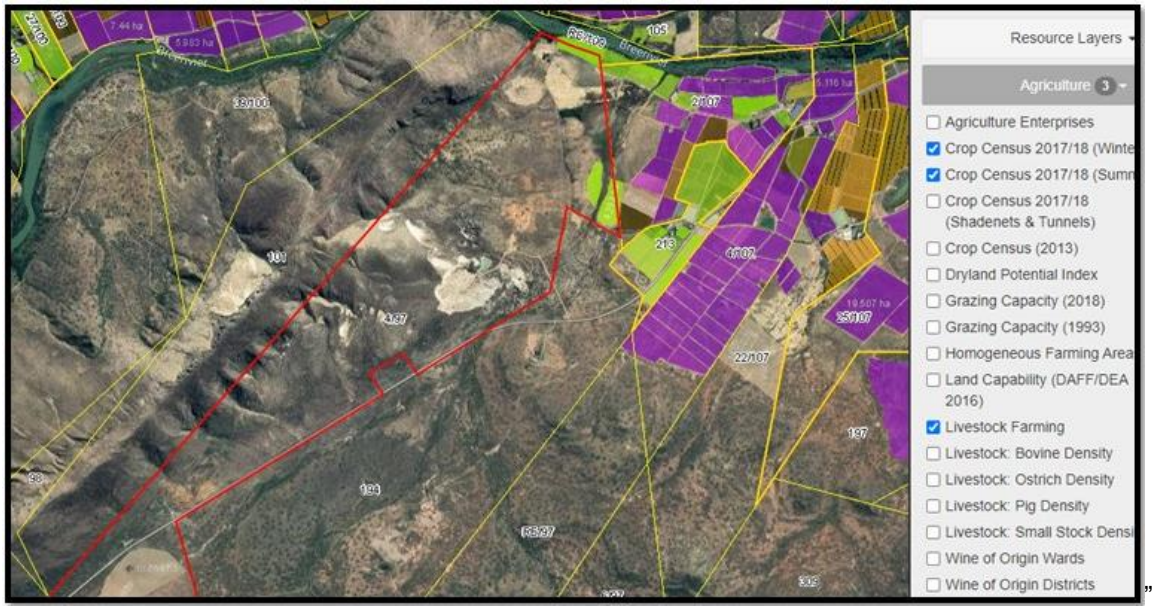
Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted		Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
Langeberg Local Municipality (LLM)				
Comments received from Langeberg Local Municipality: The municipality awaits the Application Scoping Report, and requested additional information regarding botanical environmental assessment and the visual impact. The municipality is concerned about: - the scale, and need and desirability of the extension application, - the area is not used for agricultural purposes but is pristine natural vegetation, - natural vegetation should be re-established if the area is permitted to be mined.				
Response to the comments received from the LLM: "Greenmined Environmental herewith thank you for your interest in the project, and acknowledge receipt of your correspondence received 28 January 2020 regarding the proposed Section 102 amendment application to be submitted on behalf of Zandberg Sandput (Pty) Ltd. We registered the Langeberg Municipality as a stakeholder on the project, and will henceforth keep you posted on the progress of the Environmental Impact Assessment process as well as supply you with a copy of the draft scoping report (DSR) for your perusal. We take note of your concerns as listed in the attached BID. We will include your correspondence in the DSR and assess it as part of the Draft Environmental Impact Assessment Report that will also be available for your perusal. In the interim, please note that although the proposed extension extends over ±108 ha, it is proposed that the current 1 ha strip-mining method continues should the application be approved. In light of this the mined out area (1 ha) will be rehabilitated prior to the mining of a consecutive strip (1 ha). The botanist was tasked to identify sensitive areas where mining should not be allowed. The findings of the specialist will be incorporated into the DEIAR to be distributed for perusal and commenting. We trust you find this in order. Please do not hesitate to contact me in the event of any uncertainties."				

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted	Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
Comments received from the LLM on the DSR (13 July 2020): "….The following statistics must be provided with regard to the proposed large scale expansion: • How much of the currently approved 17,65 ha has already been mined? • How many hectares are still available to be mined? • How many years will it take to mine this remaining approved mine area? • Why is such large extension (108,3851ha.) being applied for? (If 17,68ha. was sufficient for sand mining for a 30+yr period, it would seem unnecessary to apply for more than a ±20ha expansion at this stage). The scoping report still refers to the land as being used for agriculture and returning the use after mining to agricultural (pp 19, 38, 63, 71, 75, 81, 82, 87, 90, 97). This is clearly a cut and paste error from another application, and must be corrected throughout the document. Pg 58 summarises the conservation status of the natural vegetation which covers the entire site, and it is clear that there is no agricultural activity on this land and that should mining be permitted, natural vegetation should be re-established in terms of the rehabilitation process, not agricultural crops."			
Response to the DSR comments received from the LLM (14 July 2020): "….We take note of your request for additional information, and will incorporate and discuss the request in the draft Environmental Impact Assessment Report (DEIAR) to be circulated for public comments upon approval of the final Scoping Report. Regarding your comment about the agricultural use of the property: There was no copy and paste error. The land earmarked for the proposed expansion is currently zoned for agricultural purposes. The Department of Environmental Affairs and Development Planning confirmed on 09 March 2020 that: "*Agricultural Land is defined in the Regulations as being land outside the physical outer edge of the existing urban edge. Whether the land has been cultivated or irrigated in the preceding 10 years is irrelevant in respect of this category of land development*". In light of this, the land use description of the earmarked area cannot be anything other than agriculture even though the footprint is presently covered with natural vegetation. Upon closure of the mine, the use of the mining footprint will be returned to the landowner to allow him to continue farming the property (whether through grazing of natural vegetation or active cultivation). We take note of your suggestion that natural vegetation should be established on the rehabilitated areas. Your request will be forwarded to the botanist responsible for the Botanical Impact Assessment and his suggestions will be incorporated into the Rehabilitation and Closure Plan that will form part of the DEIAR."			

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted	Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant

Further comments received from the LLM (14 July 2020):

"…I stand by my comments regarding the land use of the property and wish the following noted: The scoping report refers to the land as being used for agricultural purposes and returning the use after mining to agricultural (pp 19, 38, 63, 71, 75, 81, 82, 87, 90, 97). This is misleading to those who read the report as there is no conventional agricultural activity on the portion of land where the mine expansion is proposed, as is clear from the extract below from Cape Farm Mapper, and from a site visit. Whilst the land is zoned Agricultural zone I, and despite the legal definitions of "Agricultural land", the current use of this land is vacant, natural vegetation. Pg 58 of the scoping report summarises the vulnerable conservation status of much of the natural vegetation which covers the site. Accordingly, should mining be permitted, natural vegetation should be re-established in terms of the rehabilitation process. Alternatively, if agricultural crops are proposed to be established, this must be addressed in the EIA in terms of the proposed extent and nature of crops, to enable the relevant Departments to comment meaningfully.



"

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted		Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
Greenmined acknowledged response (14 July 2020) of the comments and confirmed that it will be incorporated into the final Scoping Report and the draft EIAR.				
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA etc	**X**	-	-	-
Department of Transport and Public Works (DTPW)	X	30 January 2020	Mr Lyle Martin confirmed receipt of the BID and informed that the matter is receiving attention and that a further communication will be addressed to us (Greenmined) as soon as circumstances permit.	The comments received from DTPW were incorporated into the DSR. The proposed extension area will make use of access off Divisional Road 1342 (La Chasseur/Agter-Kliphoogte road) as mentioned in the DTPW comments (below).
		11 March 2020	Ms GD Swanepoel submitted the following comments on the project through regular mail that was received 11 March 2020 although the comments are dated 19 February 2020.	

Summary of the comments received from DTPW:

In this Branch's (*DTPW*) comment on the land use application, it stipulated the following conditions:

- The necessary right of way servitude be registered prior to the commencement of mining and,
- The access off Divisional Road 1342 at ± km 4.93 be constructed as a Main Farm Access as per the attached standard (see Appendix 5) and provided with a sealed hard-surface.

Provided the same access will be used as detailed in the above paragraph this branch offers no objection to the application.

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted		Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
Comments submitted by the DTPW on the DSR (13 July 2020): "…A fleeting look at the Scoping Report shows that the comment from our letter dated 19 February 2020 has been recorded and noted. The Branch has no further comment at this stage."				
Department of Water and Sanitation	X	28 & 29 January 2020	Me Nelisa Ndobeni and Me Melissa Lintnaar-Strauss responded that the Breede-Gouritz Catchment Management Agency (BGCMA) must be informed of the proposed project.	The BGCMA was informed of the proposed project.
Eskom	X	To date no comments were received.		
Communities		No communities border the mining area or were identified within 100 m from the site.		
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
Dept. Land Affairs	-	Not applicable as this is an application for a Section 102 amendment of the approved mining right on the same property.		
-	-	-	-	-
Traditional Leaders		No tradition leaders borders the mining area or were identified within 100 m from the site.		
-	-	-	-	-
-	-	-	-	-

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted		Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
Dept. Environmental Affairs	**X**	-		
Department of Environmental Affairs and Development Planning (DEA&DP)	X	28 January 2020	Me A La Meyer acknowledged receipt of the BID and registered the DEA&DP as commenting authority.	The DEA&DP was registered as commenting authority on the project and will be supplied with copies of all the public documents.

Comments received from the DEA&DP on the DSR (20 July 2020):

"1. Directorate: Development Management (Region 1) – Ms Ayesha Hamdulay:

1.1. It is noted that several non-perennial drainage lines traverse the proposed mining right expansion area. Activity 19 of Listing Notice 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) has however not been applied for.

1.2. It is further noted that haul roads may be required. Please be advised that should new roads wider that 4m be established in areas containing indigenous vegetation, Activity 4 of Listing Notice 3 of the NEMA EIA Regulations, 2014 (as amended) will be applicable.

1.3. The applicability of Activity 19 of Listing Notice 1 and Activity 4 of Listing Notice 3 of the NEMA EIA Regulations, 2014 (as amended) must be confirmed in the Final Scoping Report ("FSR") to be submitted to the competent authority. Should the mentioned listed activities be applicable to the proposed mine expansion, an amended application form must be submitted to the competent authority and the impacts associated with the listed activities must be assessed and reported on in the Draft EIA Report.

1.4. Following the above, not all the impacts associated with the proposed mine expansion have been identified in the DSR for further assessment in the environmental impact reporting ("EIR") phase. Per paragraph 1.1. above, drainage lines traverse the proposed mine expansion area; however, the impacts on watercourses have not been identified in the DSR for further assessment in the EIA phase. (In this regard, also refer to paragraph 2.1. below.)

1.5. Furthermore, page 53 of the DSR states that "*It is known that the water table in the valley below the mine is ±3 m under the surface.*" The depth of mining and whether the proposed sand mining activities will have an impact on groundwater resources, were not indicated in the DSR. This information must be provided in the Draft EIA Report.

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted	Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
1.6. Per the DSR, the proposed mine expansion area falls within a Critical Biodiversity Area ("CBA"). Please be advised that this Directorate does not support mining within a CBA. The description of alternatives does not clearly illustrate how the mitigation hierarchy was considered when selecting the preferred (and only) site and layout alternatives. Alternatives that avoid CBAs must be further investigated and reported on in the Draft EIA Report. 1.7. It is noted that the Provincial Department of Agriculture ("DoA") has not been included in the list of state Departments to be consulted as part of the EIA process. Please ensure that said Department is consulted for comment. Depending on the comments obtained from the Provincial DoA, an agricultural impact assessment be required. 1.8. The Plan of Study for EIA must be updated to include all the impacts that will be assessed and all the specialist studies that will be undertaken during the EIR phase. 1.9. In terms of GN No. 960 of 5 July 2019, the submission of a report generated from the National Web Based Environmental Screening Tool ("Screening Tool") is a compulsory requirement when applying for environmental in terms of the NEMA EIA Regulations, 2014 (as amended). If not yet undertaken, the EAP is advised to urgently consult the Screening Tool and generate a screening report. Based on the findings of the screening report, the EAP will be required to either appoint additional specialists to undertake the identified specialist studies, or to provide a motivation in the FSR and Plan of Study for EIA why the specialist studies will not be undertaken or deemed necessary for the EIA process. Should additional specialist studies identified by the Screening Tool be undertaken, the Plan of Study for EIA must be amended to indicate which additional specialist studies will be undertaken. 1.10. The EAP is advised to consider the "*Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for environmental authorisation*" ("the protocols"), promulgated in GN No. 320 of 20 March 2020, which came into effect on 9 May 2020. If evidence can be provided to the Competent Authority to show that a specialist study for which a protocol has been prescribed was initiated prior to 9 May 2020, then the protocol in question does not have to be complied with. For those specialist studies where no specific protocol has been prescribed, the level of assessment must comply with the requirements of Appendix 6 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) EIA Regulations, 2014 (as amended). The Final Scoping Report submitted to the Competent Authority, as well as the draft EIA Report once released for comment, must be clear which protocols apply and which do not.			

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted	Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
2. Directorate: Pollution and Chemicals Management – Ms Shehaam Brinkhuis: 2.1. Drainage lines and wetlands, including areas identified as National Freshwater Priority Areas which fall within the Breede River catchment, occur within the proposed mining expansion area. This Directorate supports the recommendation of the Breede-Gouritz Catchment Management Agency that an evaluation of watercourses is warranted in the EIR phase of the application. It is further recommended that such evaluation is undertaken by a suitably qualified and experienced freshwater ecologist/specialist. The Plan of Study for EIA should thus be amended to include a Freshwater Impact Assessment. 2.2. Site-specific hydrology and geohydrology has been detailed on pages 66 to 68 of the DSR. The description provided, extracted from previously compiled reports, clearly indicates that the proposed mining expansion area and the establishment of mining activities across a substantial area shall have a significant impact on groundwater resources. Thus, it is recommended that input be obtained from a suitably qualified and experienced geohydrologist to inform the EIR phase. Per paragraph 2.1. above, the Plan of Study for the EIA should be amended to include a Geohydrological Impact Assessment. 2.3. Further to paragraphs 2.1. and 2.2. above, it is noted that the potential impacts of the proposed mine expansion on water resources and freshwater features have not been adequately identified and described during the scoping phase. Sufficient consideration should be given to these potential impacts in the Draft EIA Report. 2.4. Storm-water runoff must be controlled to ensure that on-site activities do not culminate in off-site pollution, erosion or sedimentation. It is recommended that the EIR phase make provision for the inclusion of a storm water management plan. Such a storm water management plan should also describe the proposed methods to prevent contaminated or polluted storm water from being released into the receiving environment, with attention paid to potentially sensitive areas yet to be identified by specialists during investigation of the proposed mine expansion area. 2.5. Although acknowledged that the proposed mining method may limit the pollution potential (as stated on page 27 of the DSR), it is noted that pollution and contamination may still occur and it is recommended that potential pollution impacts due to mining activities, are more thoroughly considered. It is essential that identified pollution impacts are adequately addressed and management measures must be proposed in the Environmental Management Programme ("EMPr") to be submitted with the EIA Report.			

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted	Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
3. Directorate: Waste Management – Mr Lance Anders: 3.1. Table 1, page 14 of the DSR indicates the applicable listing notices and listed activities, without providing an explanation of the listed activities. Please discuss or write out each applicable listed activity for better understanding by interested and affected parties of the listed activities. 3.2. Page 20 of the DSR indicates that alternative dust suppression methods will be utilised, however these methods were not indicated. Since the Western Cape is a water scarce province, the applicant must ensure that only non-potable water is used for dust suppression. Dust suppression measures must be detailed in the EMPr. 3.3. Waste management impacts, including *inter alia*, the storage, handling, transport and disposal of all waste types, must be addressed in the EMPr. 4. Directorate: Air Quality Management – Ms Gavaza Mhlarhi / Mr Peter Harmse: 4.1 This Directorate awaits the Draft EIA Report and EMPr to provide comment. Please ensure that the EMPr provide management measures for dust and noise impacts associated with the proposed mining operations."			
Greenmined acknowledged (21 July 2020) receipt of the comments on the draft Scoping Report and confirmed that the comments will be incorporated into the final Scoping Report (FSR), and (upon approval of the FSR) addressed in the draft Environmental Impact Assessment Report that will be published for public commenting. In addition to the above, the following comments were elaborated on in the FSR: 1.1. It is noted that several non-perennial drainage lines traverse the proposed mining right expansion area. Activity 19 of Listing Notice 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) has however not been applied for. *As mentioned earlier, the layout of the allowable mining areas, within the footprint of the proposed extension area, will be assessed during the EIA phase upon receipt of the specialist findings. Presently, it is proposed that buffer no-go areas will be demarcated around the drainage lines and no infilling, depositing, dredging, excavation, removal or moving of soil from a drainage line is envisioned. Therefore, the proposed project does not trigger Activity 19 of Listing Notice 1. However, as mentioned in the Plan of Study for the EIA Process the applicability of the listed activities will be confirmed and if needed aligned with the project proposal once the preferred alternative was finalised.*			

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted	Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant

1.2. It is further noted that haul roads may be required. Please be advised that should new roads wider that 4m be established in areas containing indigenous vegetation, Activity 4 of Listing Notice 3 of the NEMA EIA Regulations, 2014 (as amended) will be applicable.

The comment is noted, however, presently no roads wider than 4 m are proposed.

1.3. The applicability of Activity 19 of Listing Notice 1 and Activity 4 of Listing Notice 3 of the NEMA EIA Regulations, 2014 (as amended) must be confirmed in the Final Scoping Report ("FSR") to be submitted to the competent authority. Should the mentioned listed activities be applicable to the proposed mine expansion, an amended application form must be submitted to the competent authority and the impacts associated with the listed activities must be assessed and reported on in the Draft EIA Report.

Presently, neither Activity 19 of Listing Notice 1 nor Activity 4 of Listing Notice 3 is deemed applicable to this application.

1.4. Following the above, not all the impacts associated with the proposed mine expansion have been identified in the DSR for further assessment in the environmental impact reporting ("EIR") phase. Per paragraph 1.1. above, drainage lines traverse the proposed mine expansion area; however, the impacts on watercourses have not been identified in the DSR for further assessment in the EIA phase. (In this regard, also refer to paragraph 2.1. below.)

This impact was added to the Scoping Report and will be further assessed in the EIA phase.

1.5. Furthermore, page 53 of the DSR states that "*It is known that the water table in the valley below the mine is ±3 m under the surface.*" The depth of mining and whether the proposed sand mining activities will have an impact on groundwater resources, were not indicated in the DSR. This information must be provided in the Draft EIA Report.

The approximate depth of mining and potential impact on groundwater resources will be discussed in the Draft EIA Report.

1.7. It is noted that the Provincial Department of Agriculture ("DoA") has not been included in the list of state Departments to be consulted as part of the EIA process. Please ensure that said Department is consulted for comment. Depending on the comments obtained from the Provincial DoA, an agricultural impact assessment be required.

The Department of Agriculture (DoA) were supplied with a copy of the background information document as well as invited to comment on the draft Scoping Report (refer to Appendix 5 for proof thereof). To date no feedback/comments was received from the DoA.

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted	Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
1.8. The Plan of Study for EIA must be updated to include all the impacts that will be assessed and all the specialist studies that will be undertaken during the EIR phase. *This request was incorporated into this document, the Final Scoping Report.* 1.9. In terms of GN No. 960 of 5 July 2019, the submission of a report generated from the National Web Based Environmental Screening Tool ("Screening Tool") is a compulsory requirement when applying for environmental in terms of the NEMA EIA Regulations, 2014 (as amended). If not yet undertaken, the EAP is advised to urgently consult the Screening Tool and generate a screening report. Based on the findings of the screening report, the EAP will be required to either appoint additional specialists to undertake the identified specialist studies, or to provide a motivation in the FSR and Plan of Study for EIA why the specialist studies will not be undertaken or deemed necessary for the EIA process. Should additional specialist studies identified by the Screening Tool be undertaken, the Plan of Study for EIA must be amended to indicate which additional specialist studies will be undertaken. *The abovementioned report generated from the National Web Based Environmental Screening Tool ("Screening Tool") was submitted to the competent authority with the EA Application form. The report was accompanied by a cover letter discussing the specialist studies deemed applicable to this application. However, this information was also added to the final Scoping Report under Section 3(c) Description of aspects to be assessed by specialist.* 1.10. The EAP is advised to consider the "*Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for environmental authorisation*" ("the protocols"), promulgated in GN No. 320 of 20 March 2020, which came into effect on 9 May 2020. If evidence can be provided to the Competent Authority to show that a specialist study for which a protocol has been prescribed was initiated prior to 9 May 2020, then the protocol in question does not have to be complied with. For those specialist studies where no specific protocol has been prescribed, the level of assessment must comply with the requirements of Appendix 6 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) EIA Regulations, 2014 (as amended). The Final Scoping Report submitted to the Competent Authority, as well as the draft EIA Report once released for comment, must be clear which protocols apply and which do not. *The botanical study as well as the archaeological- and palaeontological impact assessments were initiated in April 2020 and will therefore be in accordance with the requirements of Appendix 6 of NEMA EIA Regulations 2014 (as amended). Should any further specialist studies be required for which a protocol has been prescribed then the protocol in question will be complied with.*			

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted	Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
2.1. Drainage lines and wetlands, including areas identified as National Freshwater Priority Areas which fall within the Breede River catchment, occur within the proposed mining expansion area. This Directorate supports the recommendation of the Breede-Gouritz Catchment Management Agency that an evaluation of watercourses is warranted in the EIR phase of the application. It is further recommended that such evaluation is undertaken by a suitably qualified and experienced freshwater ecologist/specialist. The Plan of Study for EIA should thus be amended to include a Freshwater Impact Assessment. *As mentioned earlier, the layout of the allowable mining areas, within the footprint of the proposed extension area, will be assessed during the EIA phase upon receipt of the specialist findings. Presently, it is proposed that buffer no-go areas will be demarcated around the drainage lines and no mining of the drainage lines are envisioned. Should the drainage lines be excluded from the mining footprint the potential impact of the proposed activity on watercourse is deemed to be of low significance, and in our opinion a Freshwater Impact Assessment is not applicable.* 2.2. Site-specific hydrology and geohydrology has been detailed on pages 66 to 68 of the DSR. The description provided, extracted from previously compiled reports, clearly indicates that the proposed mining expansion area and the establishment of mining activities across a substantial area shall have a significant impact on groundwater resources. Thus, it is recommended that input be obtained from a suitably qualified and experienced geohydrologist to inform the EIR phase. Per paragraph 2.1. above, the Plan of Study for the EIA should be amended to include a Geohydrological Impact Assessment. *The approximate depth of mining and potential impact on groundwater resources will be discussed in the Draft EIA Report, and if deemed applicable the opinion of a groundwater specialist will be obtained and added to the DEIAR.* 2.3. Further to paragraphs 2.1. and 2.2. above, it is noted that the potential impacts of the proposed mine expansion on water resources and freshwater features have not been adequately identified and described during the scoping phase. Sufficient consideration should be given to these potential impacts in the Draft EIA Report. *This impact was added to the Scoping Report and will be further assessed in the EIA phase.* 2.4. Storm-water runoff must be controlled to ensure that on-site activities do not culminate in off-site pollution, erosion or sedimentation. It is recommended that the EIR phase make provision for the inclusion of a storm water management plan. Such a storm water management plan should also describe the proposed methods to prevent contaminated or polluted storm water from being released into the receiving environment, with attention paid to potentially sensitive areas yet to be identified by specialists during investigation of the proposed mine expansion area.			

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted	Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
The requested storm water management plan will be incorporated into the DEIAR. 2.5. Although acknowledged that the proposed mining method may limit the pollution potential (as stated on page 27 of the DSR), it is noted that pollution and contamination may still occur and it is recommended that potential pollution impacts due to mining activities, are more thoroughly considered. It is essential that identified pollution impacts are adequately addressed and management measures must be proposed in the Environmental Management Programme ("EMPr") to be submitted with the EIA Report. *The potential pollution impacts will be further discussed and assessed in the DEIAR, and management measures will be proposed in the EMPR to be submitted with the DEIAR.* 3.1. Table 1, page 14 of the DSR indicates the applicable listing notices and listed activities, without providing an explanation of the listed activities. Please discuss or write out each applicable listed activity for better understanding by interested and affected parties of the listed activities. *A full description of the listed activities was added to this report.* 3.2. Page 20 of the DSR indicates that alternative dust suppression methods will be utilised; however, these methods were not indicated. Since the Western Cape is a water scarce province, the applicant must ensure that only non-potable water is used for dust suppression. Dust suppression measures must be detailed in the EMPr. *The following alternative dust suppression measures were proposed on page 20 of the DSR:* ☒ *The speed of all mining equipment/vehicles will be restrictions to 20 km/h on the internal farm roads/haul roads to minimize dust generation;* ☒ *The removal of vegetation will only be done immediately prior to the mining of an area in an attempt to lessen denuded areas (acting as dust source) to the absolute minimum.* *The requirement that only non-potable water may be used for dust suppression was added to the FSR and will also form part of the DEIAR.* 3.3. Waste management impacts, including *inter alia*, the storage, handling, transport and disposal of all waste types, must be addressed in the EMPr. *The requested information will be incorporated in the EMPR that will accompany the DEIAR.*			
Other Competent Authorities affected		-	-	-

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted		Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
Breede-Gouritz Catchment Management Agency (BGCMA)	X	26 February 2020	S Lupa commented as follows on the project.	Greenmined responded to the BGCMA on 28 February 2020 as listed below.

Comments received from BGCMA:

"The Breede-Gouritz Catchment Management Agency (BGCMA) has received the Notice of Application as indicated above on 30 January 2020. BGCMA has no objections to the proposed development. However, the following is noted:

a) There's little to no stockpiling is required and no washing of sand is needed which means that the sand mining operation will not require the use of water; and
b) The mining footprint will expand over an area classified as a phase 2 FEPA (Freshwater Priority Area) according to the National Wetlands and NFEPA map of SANBI. Therefore, the conservation status of the area will be assessed and discussed during the EIA process of this application.

Therefore, through acknowledgment of watercourses (drainage lines) in the area earmarked for sand mining expansion, impacts on the watercourses should be evaluated in the EIA process as they will assist in the type of Water Use Authorisation triggered by the proposed sand mining activities. BGCMA would therefore, make final comments when the impacts on the watercourses (drainage lines) have been properly evaluated under the EIA process.

General

- No water must be taken from a water resource for any purpose without authorisation from the National Water Act, 1998 (Act 36 of 1998).
- No water or water containing waste may be disposed without authorisation from the National Water Act, 1998 (Act 36 of 1998) and National Environmental Management: Waste Act, 2008 (Act 59 of 2008).
- No unauthorised activities should take place within a regulated area of a watercourse.
- All relevant sections and regulations of the National Water Act, 1998 (Act 36 of 1998) regarding water use must be adhered to.
- No pollution of surface water or groundwater resources may occur.
- Stormwater management must be addressed in terms of flooding, erosion and pollution potential.

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted		Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
⁕ No stormwater runoff from any premises contain waste, or water containing waste emanating from industrial activities and premises may be discharged into a water resources. Polluted stormwater must be contained. Please be advised that no activities may commence without the appropriate approvals/authorisations where needed from the responsible authority. The onus remains with the registered property owner to confirm adherence to any relevant legislation that such activities might trigger and/or need authorisation for. This office reserves the right to amend and revise its comments as well as to request any further information."				
Response from Greenmined to the comments received: "Greenmined herewith acknowledge receipt of your correspondence received 27 February 2020 on the proposed Section 102 amendment application of Zandberg Sandput (Pty) Ltd in the Robertson area. We registered the Breede-Gouritz Catchment Management Agency (BGCMA) as a stakeholder on the project, and will henceforth keep you posted on the progress of the Environmental Impact Assessment process as well as supply you with a copy of the draft scoping report (DSR) for your perusal. Your comments will be incorporated and addressed as part of the EIA documents that will all be available for public perusal. We trust you find this in order. Please do not hesitate to contact me in the event of any uncertainties."				
Cape Winelands District Municipality	X	To date no comments were received.		
CapeNature (CN)	X	03 February 2020	Mr Rhett Smart requested a copy of the Scoping Report for the attention of Me Vicki Hudson.	Greenmined acknowledged receipt of the request on 6 February 2020 and will supply CN with a copy of the DSR for their perusal.
Department of Agriculture, Forestry and Fisheries	X	To date no comments were received.		

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted		Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
Department of Economic Development and Tourism	X	To date no comments were received.		
Department of Labour	X	To date no comments were received.		
Department of Rural Development and Land Reform – Western Cape District Offices	X	To date no comments were received.		
Department of Social Development	X	To date no comments were received.		
Heritage Western Cape	X	28 January 2020	Me Waseefa Dhansay requested a NID to be submitted to HWC for their perusal.	The NID was submitted to HWC on 10 February 2020.

On 19 February 2020, HWC responded on the NID as follows:

"Heritage Western Cape is in receipt of your application for the above matter received on 10 February 2020. This matter was discussed at the Heritage Officers meeting held on 17 February 2020. You are hereby notified that, since there is reason to believe that the proposed development will impact on heritage resources, HWC requires that a Heritage Impact Assessment (HIA) that satisfies the provisions of section 38(3) of the NHRA be submitted. This HIA must have specific reference to the following:

- Archaeological Impact Assessment;
- Palaeontological Impact Assessment;

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted		Date Comments Received	Issues raised	EAP's response to issues raised by the Applicant
The required HIA must have an integrated set of recommendations. The comments of relevant registered conservation bodies and the relevant Municipality must be requested and included in the HIA where provided. Proof of these requests must be supplied. Please note, should you require the HIA to be submitted as a Phased HIA, a written request must be submitted to HWC prior to submission. HWC reserves the right to determine whether a phased HIA is acceptable on a case by case basis. This decision is subject to an appeal period of 14 working days. The appeal period shall be taken from the date above. It should be noted that for an appeal to be deemed valid it must refer to the decision, it must be submitted by the due date and it must set out the grounds of the appeal. Appeals must be addressed to the official named above and ti sit eh responsibility of the appellant to confirm that the appeal has been received within the appeal period. Applicants are strongly advised to review and adhere to the time limits contained the Standard Operational Procedure (SOP) between DEADP and HWC. The SOP can be found using the following link http://www.hwc.org.za/node/293. HWC reserves the right to request additional information as required."				
The appropriate specialists will be appointed and the HIA will be send to HWC as soon as possible, as well as incorporated into the DEIAR.				
South African Heritage Resources Agency (SAHRA)	X	To date no comments were received.		
OTHER AFFECTED PARTIES		-	-	-
-		-	-	-
INTERESTED PARTIES		-	-	-
Deo Volente Sand-mine (Me Satchel)		10 February 2020	Me Deb Satchel registered as I&AP on the project.	Greenmined acknowledged receipt of Me Satchel's registration on 10 February 2020 and confirmed that she will be notified of the DSR for her perusal.

iv) The Environmental attributes associated with the sites

(1) Baseline Environment

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

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

This section describes the general biophysical, cultural and socio-economic environment as well as baseline conditions that may be affected by the proposed extension project. The information provided here was obtained from desktop studies and must be treated as preliminary. More detailed information based on site specific conditions, obtained during site assessments and focussed investigations will be collected during the EIA process and elaborated on in the DEAIR.

PHYSICAL ENVIRONMENT

CLIMATE

The Robertson area receives an average of 255 mm of precipitation per year (left chart). The highest rainfall usually occurs in August averaging 35 mm, while the lowest occurs in January with an average of 8 mm. The monthly distribution of average daily maximum temperatures (middle chart) shows that the average midday temperatures range from 16.7˚C in July to 29˚C in February. The region is the coldest during July (4.2°C on average). Consult the chart below (right) for an indication of the monthly variation of average night-time temperatures.

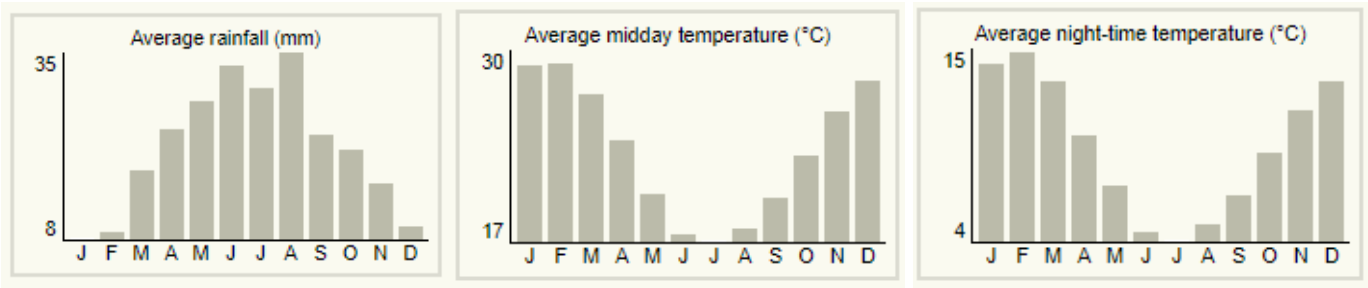


Figure 5: Charts showing the climatic averages of the Robertson area (information obtained from SAExplorer).

During the summer/spring months the south to south-eastern wind dominates in the Robertson area (blowing in a northern direction), whilst during the winter/autumn months the west-north-western wind is dominant as presented in the figure below. According to the data of windfinder.com the average wind speeds range from 4 – 6 kts during the year.

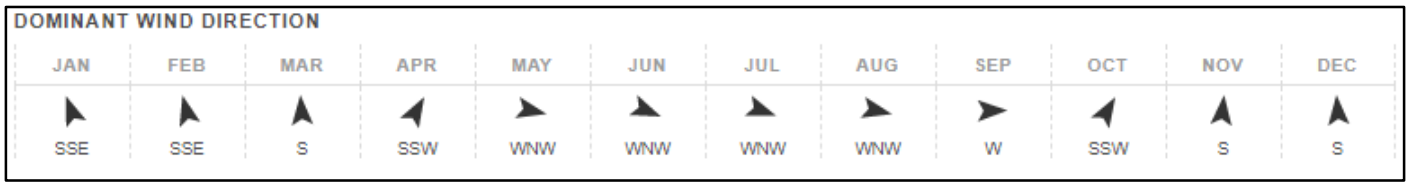


Figure 6: Dominant wind direction of the Robertson area (information obtained from windfinder.com).

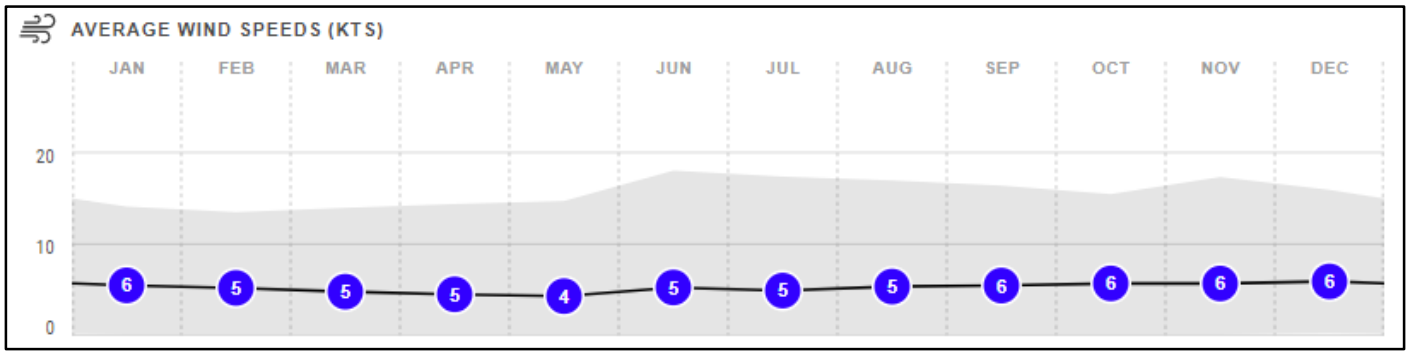


Figure 7: Average wind speeds of the Robertson area (information obtained from windfinder.com).

TOPOGRAPHY

The north-western boundary of the farm Zandberg fontein extends up the leeward side of the Zandberg mountain that divides the northern Breede River valley from the southern highly undulating area. The topography of the area is described as a steep to moderately sloping terrain. The altitude of the proposed extension area lays between 437 masl along the north-western boundary and 208 masl at the south-eastern corner.

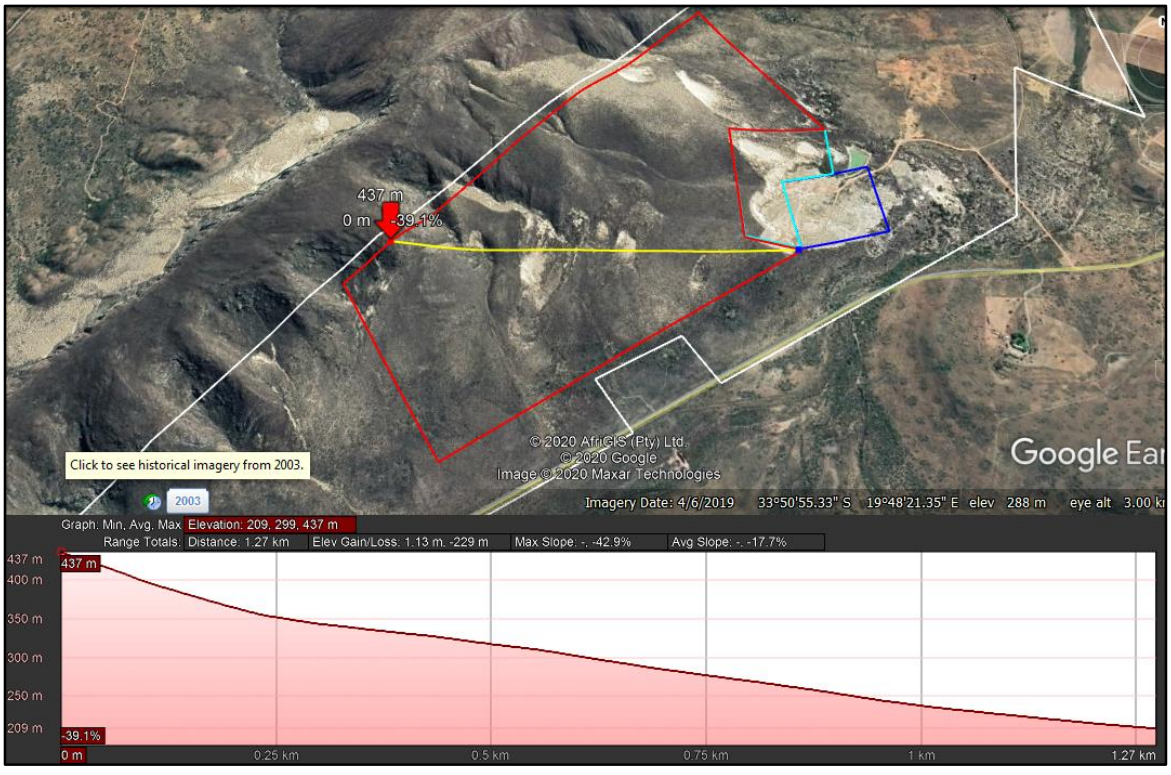


Figure 8: Elevation profile of the area. (Image obtained from Google Earth).

VISUAL CHARACTERISTICS

Portion 4 of the farm Zandberg fontein No 97 is zoned for agricultural use with a mostly undisturbed footprint and intact natural vegetation cover. Presently, sand mining has been done over approximately 10 ha of the farm with a dam established to the north of the mining area. Owing to the elevation of the site most of the farm is visible from the La Chasseur/Agter-Kliphoogte road passing the farm to Robertson as well as the farms opposite the road. In light of this the proposed extension area will be visible from the north, east, south and south-west. The Zandberg screens the operation to the north-west/north.

GEOLOGY AND SOILS

(Information extracted from the Environmental Management Programme Report of Zandberg Sand Mine, 2014)

The geology of the study area is known for its acidic lithosol soils derived from Ordovician sandstones of the Table Mountain Group, as well as recent aeolian sand accumulations of riverine origin (Breede River). The sand deposit is situated on the leeward side of the Zandberg mountain.

The ENPAT (Environmental Potential Atlas for South Africa) agricultural dataset indicates that the soils of the study area are not suitable for arable agriculture but can still be used for grazing. Sand "blow-outs" is visible in the surface in various places on the property.

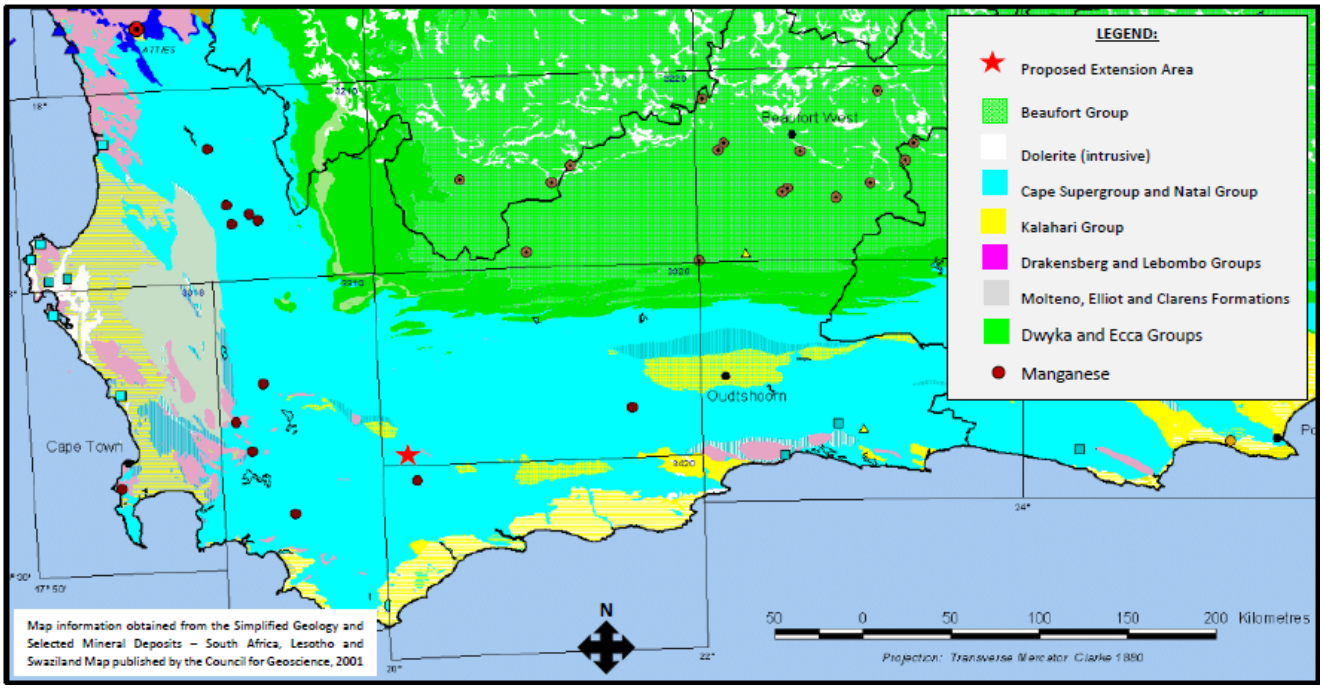


Figure 9: Indication of the simplified geology of the study area, where blue represents the Cape Supergroup and Natal Group within which the proposed extension area is situated. The proposed extension area is indicated by the red star. (Image obtained from the Council for Geoscience)

HYDROLOGY AND GEOHYDROLOGY

The study area is located within the Upper Breede Sub-Water Management Area which is managed as part of the Breede Water Management Area by the Department of Water and Sanitation (DWS). Portion 4 of Zandberg fontein 97 falls within the H40J quaternary catchment. There are no dams, rivers or wetlands in the proposed extension footprint, however it extends over an area classified as a Phase 2 FEPA (Freshwater Priority Area) according to the National Wetlands and NFEPA map of SANBI. The Lexicon of Biodiversity Planning in South Africa defines a FSA as: *"Phase 2 FEPAs were identified in moderately modified (C) rivers. The condition of these Phase 2 FEPAs should not be degraded further, as they may in future be considered for rehabilitation once good condition FEPAs (in an A or B ecological category) are considered fully rehabilitated."*

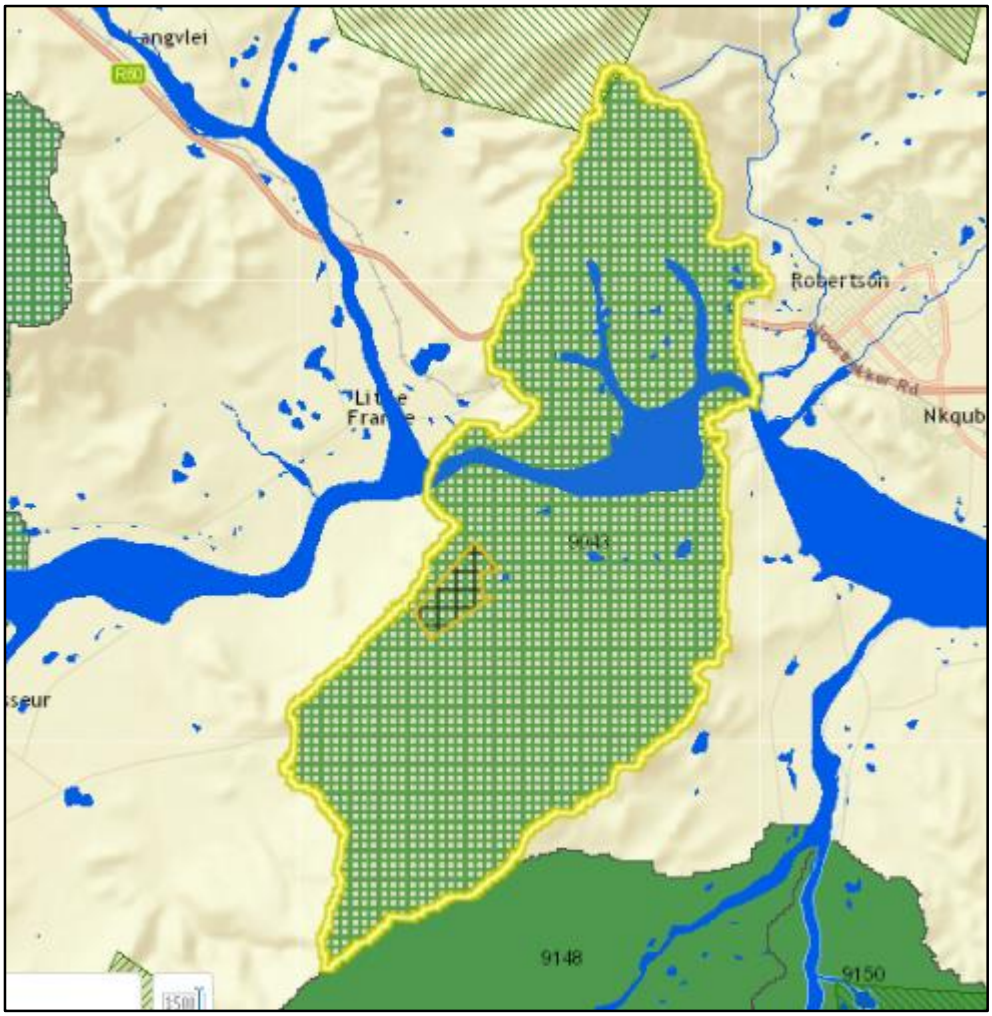


Figure 10: Map showing the position of the Phase 2 FEPA (crossed green polygon) in relation to the proposed extension area (orange polygon) and the Breede River (blue polygon). (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

Broad scale wetland mapping conducted by the National Wetlands and National Freshwater Ecosystem Priority Areas (NFEPA) initiative does not show any water feature within the earmarked extension boundaries (figure below).

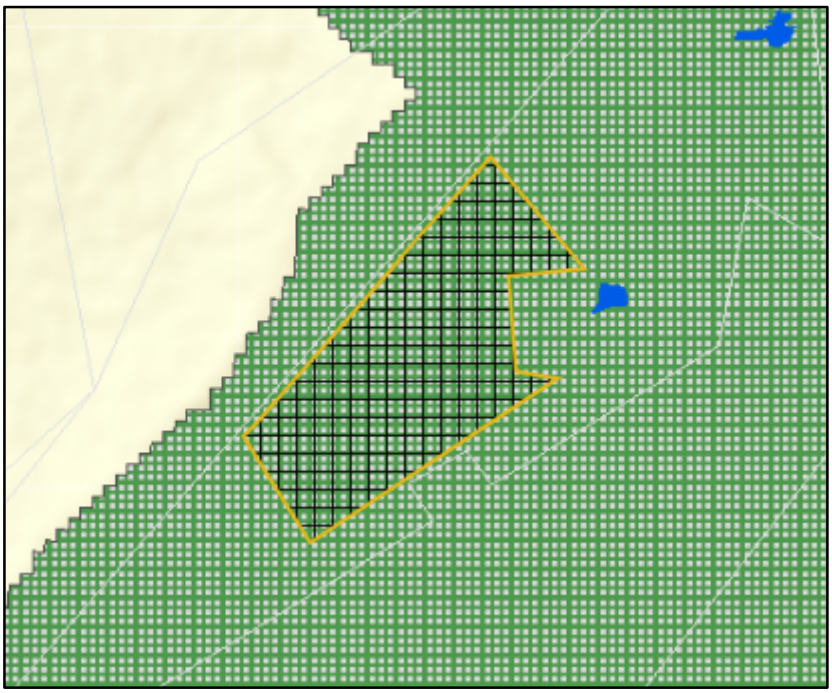


Figure 11: Map on a smaller scale showing the position of only one water body (blue polygon showing the dam of the farm) in close proximity to the proposed extension area (orange polygon). (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

It is known that the water table in the valley below the mine is ±3 m under the surface. A borehole in the valley indicated that the groundwater is artesian.

AIR QUALITY AND NOISE AMBIANCE

The air and noise ambiance of the study area was historically representative of an agricultural environment in which farming equipment operated with occasional dust emissions from denuded areas. The surrounding area has since been transformed with the introduction of small scale sand mining, viticulture (nearer to Robertson) and the movement of traffic along the La Chasseur/Agter-Kliphoogte road, all of which affects the air and noise ambiance of the study area. Mining at the Zandberg Sand Mine contributes the emissions of one FEL and ±10 trucks/day to the receiving environment. Should the S102 application be approved, the extension of the footprint will not cause a cumulative impact as mining will gradually progress into the extension area while the current mining method will persist.

BIOLOGICAL ENVIRONMENT

MINING AND BIODIVERSITY

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

When the position of the study area is layered over the Mining and Biodiversity Map, as shown in the figure below, the entire mining footprint is classified as highest biodiversity importance with a corresponding rating of highest risk for mining. The Mining and Biodiversity Guideline's describes areas of highest biodiversity importance as: "*these areas are viewed as necessary to ensure protection of biodiversity, environmental sustainability, and human well-being.*" The guideline notes that environmental screening, the EIA and specialists should focus on confirming the presence and significance of biodiversity features, and provide a site-specific basis on which to apply the mitigation hierarchy to inform regulatory decision-making.

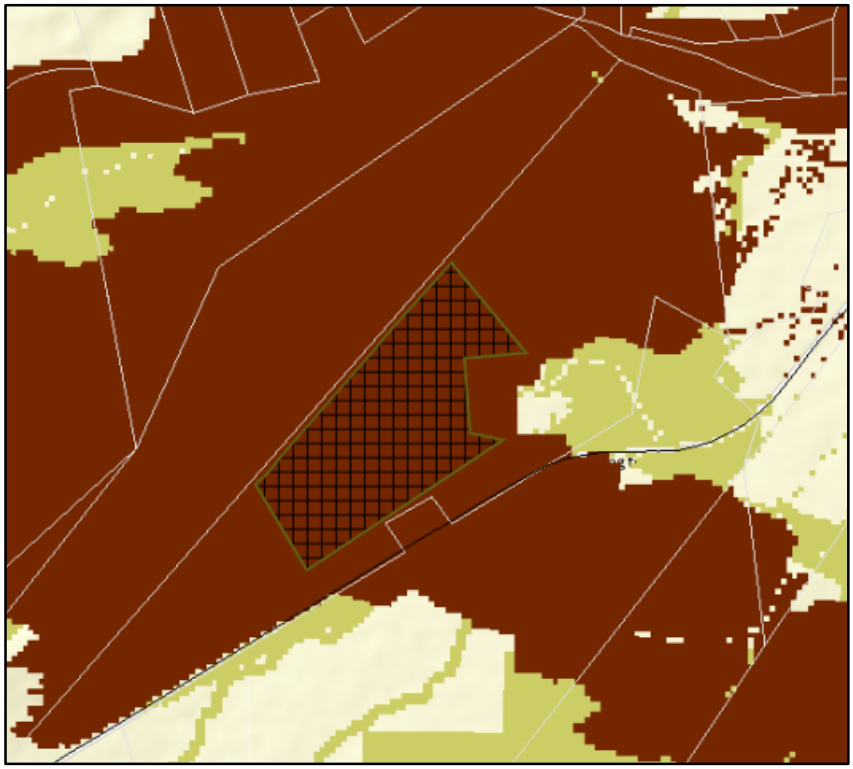


Figure 12: The Mining and Biodiversity importance map overlain by the proposed extension area (crossed polygon). Dark brown – highest biodiversity importance, highest risk for mining, sand colour – moderate biodiversity importance, moderate risk for mining. (Image obtained from the BGIS Map Viewer: Mining Guidelines)

BIODIVERSITY CONSERVATION AREAS

According to the 2017 Western Cape Biodiversity Spatial Plan (WCBSP), the Langeberg Critical Biodiversity Area 1 (CBA) extends across the earmarked area (refer to following figure). The Lexicon of Biodiversity Planning in South Africa provides the following definition for a CBA:

- Critical Biodiversity Area (CBA): *"an area that must be maintained in a good ecological condition in order to meet biodiversity targets. CBA's collectively meet biodiversity targets for all ecosystem types as well as for species and ecological processes that depend on natural or near-natural habitat, that have not already been met in the protected area network."*

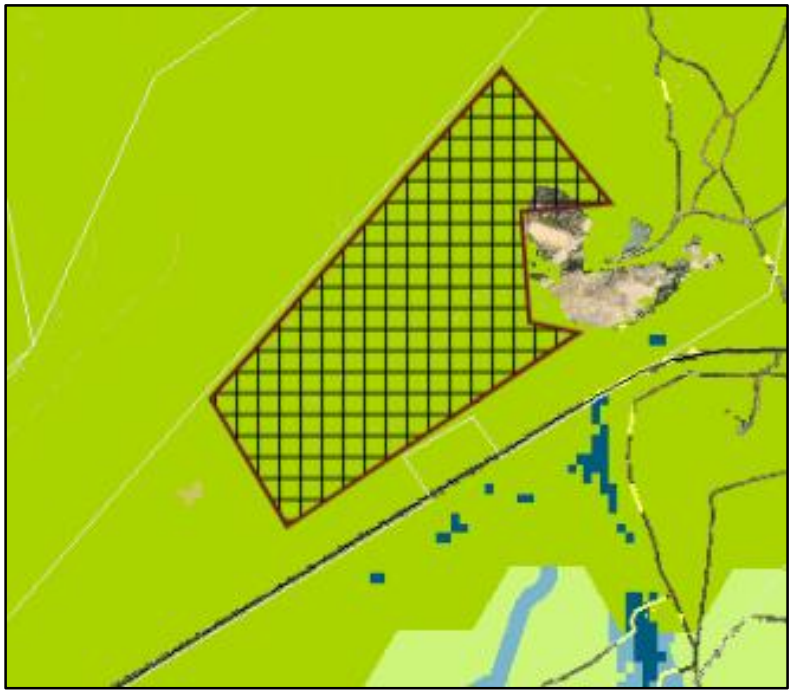


Figure 13: 2017 Western Cape Biodiversity Spatial Plan showing the footprint of the earmarked extension area (crossed polygon), in relation to the Langeberg CBA 1: Terrestrial (green). (Image obtained from the BGIS Map Viewer: 2017 Western Cape Biodiversity Spatial Plan).

An ecologist was appointed to conduct a vegetation study of the proposed extension area and identify sensitive area that must be protected/conserved within the earmarked footprint. The outcome of the specialist's report will be incorporated into the DEIAR to be distributed for public comments.

GROUNDCOVER

According to Mucina and Rutherford (2012) the extension area lays over two vegetation types known as the Breede Sand Fynbos (FFd8) and the North Sonderend Sandstone Fynbos (FFs13).

The Breede Sand Fynbos (FFd8) vegetation type is fragmented, occurring as dune plumes and dune seas in the valley bottoms primarily south of the Breede River, also extending up the sides of adjacent hills. The vegetation is characterised as an open proteoid tall shrubland combined with an open to medium dense restioid herbland in undergrowth (Mucina & Rutherford, 2012). Important taxa includes amongst others: *Leucospermum rodolentum* (d), *Metalasia densa*, *Protea laurifolia, Afrolimon longifolium*, *Aspalathus heterophylla*, *Euchaetis pungens*, *Lachnospermum fasciculatum*, *Leucadendron brunioides* var. *brunioides*, *L. salignum, Ruschia caroli, Pelargonium senecioides, Romulea setifolia, Cynodon dactylon*, and *Ehrharta villosa* var. *villosa.* The endemic geophytic herb *Ixia pumilio* is known to occur in this vegetation type.

The conservation status of the vegetation type is Vulnerable with the conservation target set at 30%, with none of the unit conserved in statutory conservation areas and only 2% protected in the Hawequas and Quaggas Berg Private Natural Reserve. Mucina and Rutherford reported that 45% of the area has been transformed mainly for pasture and vineyards, as well as a result of the Brandvlei and Kwaggaskloof Dams.

The North Sonderend Sandstone Fynbos (FFs13) vegetation type is known as an open, tall, proteoid-leaved evergreen shrubland with a dense moderately tall, ericoid-leaved shrubland as understorey. This is mainly asteraceous fynbos on the western and lower slopes, but extensive proteoid and restioid fynbos dominate the middle slopes. Ericaceous fynbos is restricted to the highest peaks. The deep sand habitat of the northern plateau, which runs along the length of the mountain, is a distinctive feature associated with many endemic species (Mucina & Rutherford, 2012). Important taxa includes amongst others: *Acacia karroo*, *Cunonia capensis*, *Metrosideros angustifolia*, *Protea nitida, Protea neriifolia* (d), *P. repens* (d), *Polygala fruticosa*, *Protea laurifolia*, *Rhus pyroides, Agathosma leptospermoides*, *Athanasia oocephala*, *Cliffortia ruscifolia*, *Elytropappus glandulosus*, *Erica denticulata*, *E. globiceps* subsp. *zeyheri*, *E. jonasiana*, *E. lateralis*, *E. modesta*, *E. plukenetii* subsp. *plukenetii*, *E. serrata*, *Paranomus adiantifolius*, *P. capitatus*, *Passerina burchellii*, *Phaenocoma prolifera*, *Prismatocarpus lycioides*, *Protea amplexicaulis*, *P. cynaroides*, *P. humiflora*, *P. lorifolia*, *P. scabra*, *P. subulifolia, Serruria gremialis*, *S. viridifolia, Stoebe spiralis, Drosanthemum leptum*, *Ruschia acutangula, Edmondia sesamoides*, *Ursinia oreogena*, *Gladiolus atropictus, Ehrharta ramosa* subsp. *aphylla*,

Hypodiscus squamosus, *H. striatus*, *Ischyrolepis capensis*, *I. distracta*, *I. gaudichaudiana*, *Pentaschistis eriostoma*, *Restio filiformis.* The endemic taxa include: *Leucadendron burchellii*, *L. immoderatum*, *L. nervosum*, *Leucospermum harpagonatum*, *Serruria stellata*, *S. williamsii*, and *Spatalla argentea.*

The conservation status of the vegetation type is Least Threatened with the conservation target set at 30%. 21% of the vegetation type is statutorily conserved in the Riviersonderend Nature Reserve, with an additional 51% mainly in a private conservation area of the same name. Mucina and Rutherford reported that only 2% of the area has been transformed mainly for protea nurseries and fruit orchards.

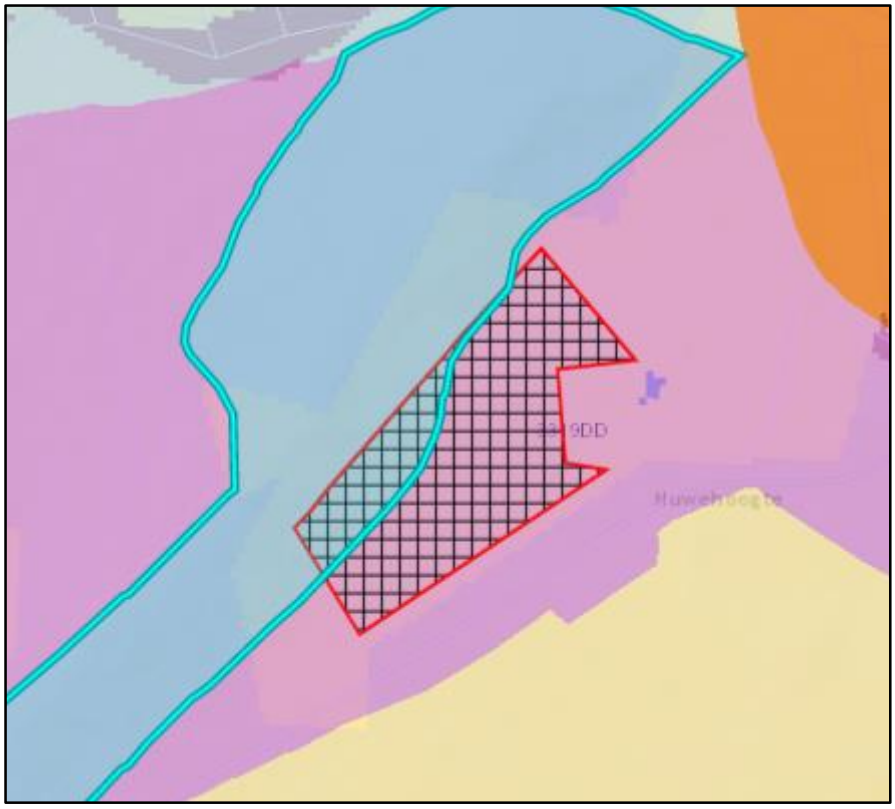


Figure 14: National vegetation cover map showing the distribution of FFd8 Breede Sand Fynbos (pink shaded area) and FFs13 North Sonderend Sandstone Fynbos (blue shaded area). The study area is shown by the crossed polygon. (Image obtained from the BGIS Map Viewer – National Vegetation Map)

The tables below provide a summary of the conservation status of the two vegetation types.

Table 10: Summary of the conservation status of the Breede Sand Fynbos (FFd8).

Conservation Target (% of area)	30%
Protected (% of area)	2% (Non-statutorily)
Remaining (% of area)	55%
Description of conservation status	Vulnerable

Table 11: Summary of the conservation status of the North Sonderend Sandstone Fynbos (FFs13).

Conservation Target (% of area)	30%
Protected (% of area)	21% (Statutorily) 51% (Non-statutorily)
Remaining (% of area)	98%
Description of conservation status	Least Threatened

A botanical impact assessment will be conducted of the earmarked extension area to confirm the site specific groundcover of the farm. The findings of the specialist will be incorporated into the DEIAR to be distributed to the public for commenting.

FAUNA

Fauna that may be present on, or visit the study area, comprises of birds such as doves, starlings, and sparrows as well as commonly found insects and reptiles. The landowner keeps livestock, but to date no protected or red data faunal species were identified to be resident within the approved mining area or proposed extension footprint.

HUMAN ENVIRONMENT

CULTURAL AND HERITAGE ENVIRONMENT

The earmarked area is situated on a farm approximately 7 km south-west of the town of Robertson. Robertson was founded in 1853, however before the founding of the town, Simon van der Stel developed the farming lands in the region around 1679. Farmers were attracted to the region as it had fertile land and was good for grazing sheep. Wine farming in Robertson picked up speed when the Cogmanskloof pass connected the farmers with Montagu in 1877. By the mid-1800's, sheep and mixed farming was popular in the Robertson district. The MR Holder has been mining sand from the property for the past

26 years. Sand mining, on this property, however commenced in the 1980's with the surrounding areas mainly used for grazing by the landowners.

The South African Heritage Resources Agency (SAHRA) compiled the Palaeontological (fossil) Sensitivity Map (PSM) to guide developers, heritage officers and practitioners in screening palaeontologically sensitive areas at the onset of a project. When the footprint of the proposed extension area is placed on the PSM, it shows the study area to extend over areas of high (orange) concern as presented in the figure below. In light of this, a palaeontological desktop study is required and based on the outcome of the desktop study, a field assessment is likely.

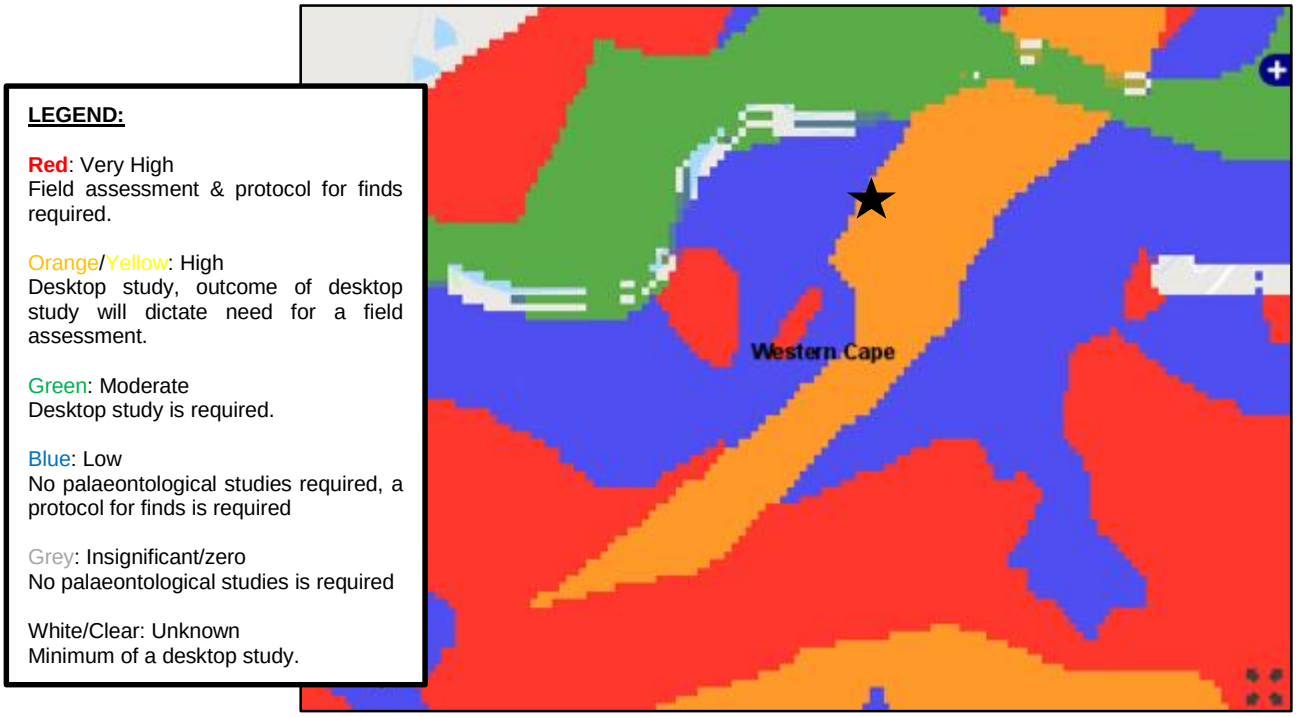


Figure 15: The SAHRA palaeontological sensitivity map shows that the proposed extension footprint (black star) extends over an area of high concern (Orange) (image obtained from the PalaeoSensitivity Map on SAHRIS).

A Notice of Intend to Develop was submitted to Heritage Western Cape on 10 February 2020, upon which an Archaeological Impact Assessment and Palaeontological Impact Assessment were requested (by HWC). The appropriate specialists will be appointed and the findings of the specialist will be included into the DEIAR.

SOCIO-ECONOMIC ENVIRONMENT

(Information extracted from the Social and Labour Plan of the Zandberg Sand Mine)

Portion 4 of Zandberg fontein No 97 is situated approximately 7 km south-west of Robertson within the Langeberg Local Municipality which is one of the municipalities situated within the Cape Winelands District.

The Langeberg Municipality includes the towns of Ashton, Bonnievale, McGregor, Montagu and Robertson, as well as rural areas adjacent to and between these towns. Robertson is one of the largest wine-producing regions in South Africa. The area is best known for its wine, but a variety of diverse attractions and activities, combined with spectacular scenery and the relaxed hospitality of the people ensure visitors unforgettable stays and a reason to return. The Robertson Wine Valley forms part of the longest wine route in the world - Route 62.

Langeberg has the smallest population in the Cape Winelands District which, according to the forecasts of the Western Cape Department of Social Development, is estimated to be 103 389 in 2017. This total gradually increases across the 5-year planning cycle and is expected to reach 108 540 by 2023. This equates to an approximate 5.0% growth off the 2017 base estimate. In 2017, Langeberg's population gender breakdown was relatively evenly split between male (50 427, 48.8%) and female (52 963, 51.2%). For 2023, the split is anticipated to be 52 742 (48.6%) and 55 798 (51.4%) for males and females respectively. The colored community is the dominant population group in the Langeberg area, accounting for 70% of the population; black Africans comprise 16% of the population while whites account for 12%.

The Robertson area's economy is driven by wholesale, retail, trade, catering and accommodation activities which necessitates the need for a more skilled and semi-skilled labour force that is sources from outside of the region, hence the higher population concentration within the 25-29 and 30-34 age groups (compared to the rest of the age groups). The higher concentration in the 45-49 age groups can in turn potentially be attributed to the growing trend of individuals that retire early or downscale to more rural and tranquil communities.

Economic growth at the municipal level is essential for the attainment of economic development, the reduction of poverty and improved accessibility (forward and backwards linkages between the first and second economy). Fostering this growth requires an in-depth understanding of the economic landscape within which each respective municipality operates.

Langeberg comprised R 4.484 billion (or 10.2%) of the District's total R 44.16 billion GDPR as at the end of 2015. GDP growth averaged 4.0% per annum over the period 2005 - 2015. This is above the District average of 3.5%. Average annual growth of 3.0% in the post-recessionary period remained above the District average of 2.8%. Langeberg employed 13.7% (51 545 labourers) of the Cape Winelands District's labour force in 2015. Employment growth was moderate, averaging 2.5% per annum since 2005, which was

above the overall District employment growth rate of 1.9% per annum. Employment growth has nevertheless picked up significantly in the post–recessionary period (2010-2015) averaging 3.7% per annum. Langeberg has experienced significant job losses in the Agriculture, forestry and fishing sector and in the Manufacturing sector prior to and during the recession. However, 11 810 (net) additional jobs have been created in total since 2005. The semi-skilled sector employed 21.0% of the Municipality's workforce, and rose by 1.7% per annum on average since 2005. The low-skilled sector (which employs 14 774 workers or 28.7% of the Municipality's workforce) experienced a contraction of 1.7% per annum over the past decade. Most of the job losses experienced during the recession emanated from this sector. The skilled sector employed 4 567 workers (8.9% of the workforce), and grew at a moderate rate of 2.6% per annum since 2005. The majority (41.5% or 21 374 workers) of the formally employed workforce operate within the informal sector, which has grown by 9.1% per annum on average since 2005 and absorbed most of the job losses from the low and semi-skilled sectors.

Literacy rate in Langeberg was recorded at 75.3% in 2011 which is lower than the average literacy rates of the Cape Winelands district (81.7%), the Western Cape (87.2%) as well as the rest of South Africa (80.9%).

The annual income for households living within the Langeberg municipal area shows the proportion of people that fall within the low, middle and high income brackets. Poor households fall under the low income bracket, which ranges from no income to just over R 50 000 annually (R 4 166 per month). An increase in living standards can be evidenced by a rising number of households entering the middle and high income brackets. Approximately 56.9% of households in Langeberg fall within the low income bracket, of which 10.0% have no income. Less than fifty per cent of households fall within the middle to higher income categories, split between 37.9% in the middle income group and 5% in the higher income group. A sustained increase in economic growth within the Langeberg municipal area is needed if the 2030 NDP income target of R 110 000 per person, per annum is to be achieved.

Access to emergency medical services is critical for rural citizens due to rural distances between towns and health facilities being much greater than in the urban areas. Within the Cape Winelands District, Langeberg has 0.77 ambulances per 10 000 populations, higher than the District average of 0.42. At the end of March 2016, anti-retroviral treatment (ART) was provided to over 200 000 persons in the Province, 23 172 of whom were in the Cape Winelands District and 2 160 in the Langeberg municipal area. At the end of March 2016, 372 new ART patients were being treated from 7 treatment sites in the Langeberg

municipal area. The most recent information for Langeberg indicates a mother-to-child transmission rate of zero per cent which is lower than the 1.7% District and the 1.4% Provincial rate as well as the medium term annual target for 2015/16 and 2016/17.

In the Langeberg municipal area, 94.7% households have access to flush toilets connected to a sewerage system/flush toilet. Approximately, 4.7% of households must therefore make due with other sources of sanitation, meaning facilities other than flushed and chemical (i.e. pit latrine, ecological toilets and bucket toilets). Access to flush toilets connected to a sewerage system in Langeberg improved by 19.8% from 2011 to 2016 and by 26.0% across the District over the same period.

The majority of households in the Langeberg municipal area has their refuse removed by local authorities at least weekly (79.3%) and a further 3.4% of households have refuse removed by the local authority/private company less often. Refuse removed by local authorities once a week increased by 25.1% from 2011 to 22 2016 and by 21.8% across the District over the same period.

The biggest source of energy for lighting purposes in the Langeberg municipal area in 2016 was electricity whilst 9.1% of households make use of other sources of energy i.e. households that access electricity from a source which they do not pay for, generator, solar home system, battery and other. Access to electricity for lighting purposes improved by 11.1% in 2011 to 18.8% in 2016 across the District over the same period.

(b) Description of the current land uses

Portion 4 of the farm Zandberg fontein No 97 is situated in a rural setting surrounded by other farming properties. The property is approximately 7 km south-west of Robertson bordering the La Chasseur/Agter-Kliphoogte road that serves the residents of the area. Certain sections of the farm are used for grazing, and sand mining. The earmarked property is zoned Agricultural Zone 1 with a consent use for mining approved for the current mining footprint. Agricultural Zone 1 has agriculture as primary use. In light of this, a land use application needs to be made in terms of the Langeberg Land Use Planning Bylaw (264/2015) and the Langeberg Municipality – Integrated Zoning Scheme Bylaw (7929/2018) to obtain land use rights for the proposed extension area.

The following table provides a description of the land uses and/or prominent features that currently occur within a 500 m radius of the study area:

Table 12: Land uses and/or prominent features that occur within 500 m radius of the study area.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The proposed extension footprint is surrounded by natural areas zoned for agricultural use.
Low density residential	-	**NO**	The nearest residential dwelling is ±1.4 km south-east to the mine.
Medium density residential	-	**NO**	-
High density residential	-	**NO**	-
Informal residential	-	**NO**	-
Retail commercial & warehousing	-	**NO**	-
Light industrial	-	**NO**	-
Medium industrial	-	**NO**	-
Heavy industrial	-	**NO**	-
Power station	-	**NO**	-
High voltage power line	**YES**	-	A power line traverses the property and runs parallel with the La Chasseur/Agter-Kliphoogte road. The power line does not enter the proposed extension area.
Office/consulting room	-	**NO**	-
Military or police base / station / compound	-	**NO**	-
Spoil heap or slimes dam	-	**NO**	-
Quarry, sand or borrow pit	**YES**	-	This application entails the extension of the current sand mining footprint on the property.
Dam or reservoir	**YES**	-	A dam of the property lays ±180 m to the east of the extension area.
Hospital/medical centre	-	**NO**	-
School/ crèche	-	**NO**	-
Tertiary education facility	-	**NO**	-
Church	-	**NO**	-
Old age home	-	**NO**	-
Sewage treatment plant	-	**NO**	-
Train station or shunting yard	-	**NO**	-
Railway line	-	**NO**	-
Major road (4 lanes or more)	-	**NO**	-
Airport	-	**NO**	-
Harbour	-	**NO**	-
Sport facilities	-	**NO**	-
Golf course	-	**NO**	-
Polo fields	-	**NO**	-
Filling station	-	**NO**	-
Landfill or waste treatment site	-	**NO**	-
Plantation	-	**NO**	-
Agriculture	**YES**	-	The proposed footprint extends over an area zoned as Agriculture I, although the groundcover of the proposed extension area is highly natural with little to no disturbance, and is representative of the Breede Sand Fynbos and North Sonderend Sandstone Fynbos vegetation types.
River, stream or wetland	-	**NO**	The Breede River lays ±1.2 km north of the application area, behind the Zandberg. Some drainage lines occur on the opposite (southern) side of the La Chasseur/Agter-Kliphoogte road as well as extends into the proposed extension area.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Nature conservation area	-	**NO**	-
Mountain, hill or ridge	**YES**	-	The application area extends up the leeward side of the Zandberg found on the property.
Museum	-	**NO**	-
Historical building	-	**NO**	-
Protected Area	-	**NO**	-
Graveyard	-	**NO**	-
Archaeological site	-	**NO**	To be confirmed by the archaeologist.
Other land uses (describe)	-	**NO**	-

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

SPECIFIC ENVIRONMENTAL FEATURES

SITE SPECIFIC TOPOGRAPHY

As mentioned earlier, the natural topography of application area can be described as undulating, extending up the southern face of the Zandberg mountain on the property. The earmarked extension area has an average slope of -17.7% (437 masl along the north-western corner to 208 masl at the eastern corner) as shown in Figure 6 above.

SITE SPECIFIC VISUAL CHARACTERISTICS

The footprint of S1 is mainly visible from the north-east to the south-west within an approximate area of 3-4 km from the mining area as shown in the image below. Within close proximity the mining area is/will be visible from the neighbouring La Chasseur/Agter-Kliphoogte road.

The figure below shows the viewshed analysis for the S1 footprint within a ±10 km radius. The green shaded areas shows the positions from where the mining extension area will be visible. From this analysis it is shown that the visual impact of the proposed extension (S1) will be of high-medium significance without mitigation. The small scale of the proposed operation (±0.5 ha affected at a time), proposed progressive rehabilitation, as well as the fact that no infrastructure will be established does however assist in mitigating the visual impact of the proposed development on the surrounding environment. No residual visual impact is expected upon closure of the mine.

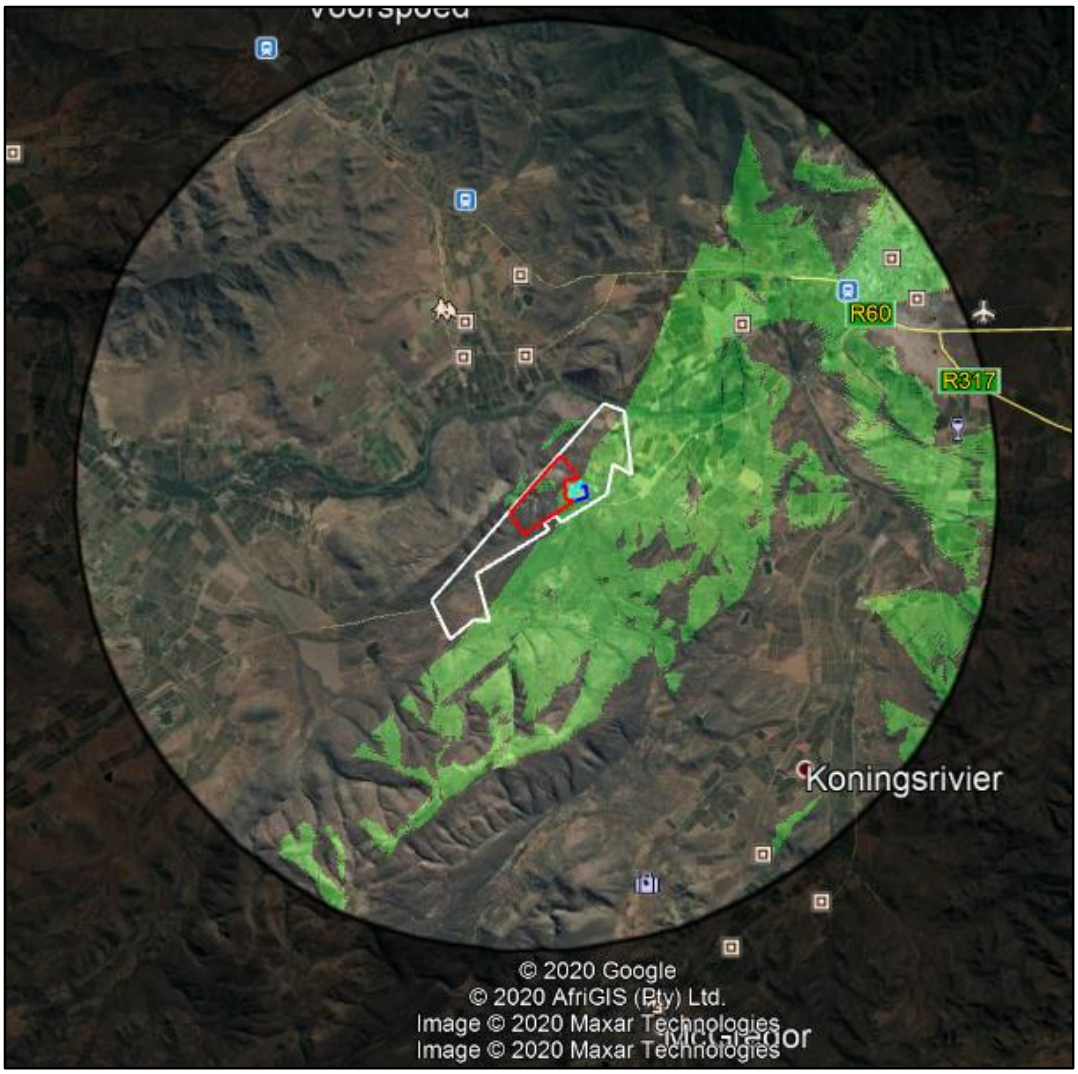


Figure 16: Viewshed analysis of S1 where the green shaded areas show the positions from where the mine will be visible (image obtained from Google Earth).

SITE SPECIFIC GEOLOGY AND SOILS

(Information extracted from the Wetland Delineation Report, 2016)

A dune-like layer of sand, several meters thick, is found against the southern slope of the Zandberg. The sand layer is exposed in certain areas (blow-outs), but mainly covered by natural vegetation along the extend of the mountainside. A layer of pedocrete separates the bedrock from the sand. All of these layers are porous and water moves readily through the sand, while the downward movement is somewhat slowed by the pedocrete.

SITE SPECIFIC HYDROLOGY AND GEOHYDROLOGY

(Information extracted from the Environmental Management Programme Report of Zandberg Sand Mine, 2014 as well as the Wetland Delineation for the Extension of the Zandbergfontein Sand Mining Operation, 2016)

The EMPR of the mine notes that water is in evidence as a leachate at the tow of the dune. This is due to a perched water table caught in the sand overlaying the sandstone formation of the area. The seepage naturally occurs all along the foot of the dune with a clearly defined water course (drainage line) in evidence (opposite the road). According to the EMPR, the sand dune is classified as an unconfined phreatic aquifer located above the regionally extensive aquifer. A feature of phreatic aquifers is that they release large quantities of water by drainage through the pores of the aquifer. In this case the border of the sand dune. Because there is no aquitard confining the water, this drainage typical continues up to the drainable porosity of the aquifer material. The visible effect of drainage is more pronounced in the winter rainy season. No evidence was found that there is a cone of depression in the groundwater formed by the mining activities, normally visible through vegetation distress (or failing of boreholes).

In 2016, the MR Holder applied for water use authorisation for activities that trigger Section 21 (c) and 21(i) of the NWA, 1998. The application was accompanied by a Wetland Delineation Report conducted by WATSAN Africa in 2016. The wetland report had to verify the presence or absence of a wetland within the potential mining area, as well as determine whether the wetland against the lower slope of the Zandberg mountain is indeed a valid wetland in need of protection or whether it has been artificially induced by the mining activities with little if any conservation status. The report stated that the layer of sand and underlying sandstone of the Zandberg stores groundwater that eventually migrates into the aquifer in the valley below. There is a drainage line south of the Zandberg (see figure below) in the valley that is mostly dry and only contains water when it rains. This line connects to the Breede River.

The wetland report also confirmed that groundwater is emitted at the foot of the body of sand up against the slope of the Zandberg. The pedocrete here is exposed and the water moving through the sand is partially intercepted prior to penetrating the sandstone. Hence a fountain is formed all along the base of the sand dune, as the water surfaces at this interface. It is uncertain if the pedocrete was exposed prior to the onset of mining and if there was a seep at the location. At this very interface, at the foot of the sand dune up the slope of the mountain, a trench of a metre deep was dug to intercept more of the groundwater, not only the part that surfaced, but also more of it that found its way lower down into the sandstone. The trench stretches all the way to the dam on the property (east

of the proposed extension area) and the volume of water in the dam bears testimony of a strong supply of groundwater. Ground water surfaced below the trench at various places showing that only a portion of the ground water actually ends up in the dam. The removal of the sand layer in this part of the mined out area contributed to the decanting of groundwater. The sand here is now much thinner and the remaining sand cannot hold the original volume of water. Hence it decants rather than entering the semi-saturated sandstone below. The end result is that more water evaporates and less ends up in the aquifer. This is not unique either, as a number of sand mines that WATSAN investigated in the Western Cape result in very much the same ill effect. However, the affected area at Zandberg is small and it is surmised that the effect on the entire aquifer will hardly be noticed.

The soil adjacent and downhill from the trench was noticeably wet during the field visit (2016). In some places water was emitted from the ground. If wetness was to be the sole indicator, this surely could be classified as a wetland. However, these wetland conditions may well be because of the mining, with the removal of sand and subsequent reduced water holding capacity and do not seem to be a natural or historic situation. The specialist did not find any evidence of gleying or blotching of soils that would classify the area as a wetland. The study concluded that the wet area is an anthropologically induced wetland that could perhaps be classified as “incidental” rather than “artificial”. It bears no special or any other conservation status. Because the landscape has been changed as a result of mining, it did not seem feasible to classify the Zandberg fontein Wetland. If it was nevertheless to be classified, the specialist named it a foot slope seep against a lower mountain side without a discernible channel. The trench is artificial and is nothing that resembles a natural channel. The area of the mine does not have any connectivity with the drainage line in the valley below. The trench will most likely be destroyed while mining the sand dune against the mountain slope. Once the area has been mined out the trench will probably be restored in order to assure a flow of water from the remaining seep into the dam. The report stated that since the trench is entirely artificial with an insignificant conservation status it is of no concern at all and therefore recommended that the mining (approved mining area) should go ahead.

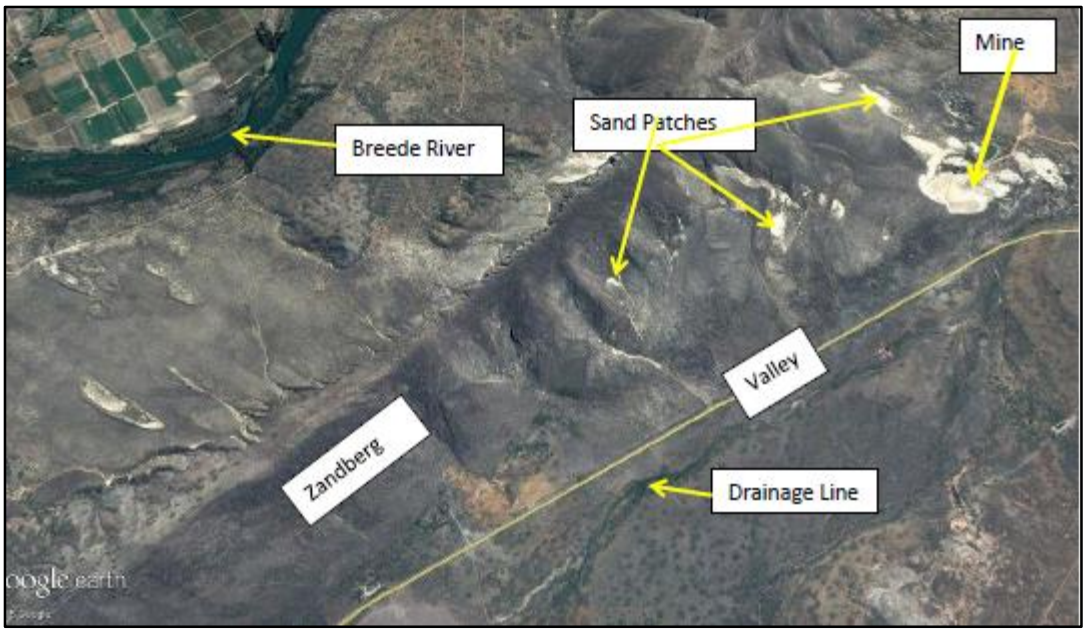


Figure 17: Image obtained from the Wetland Delineation Report that shows the drainage line on the opposite side of the La Chasseur/Agter-Kliphoogte road (WATSAN Africa, 2016).

In April 2018, the general authorisation of Zandberg Sandput (Pty) Ltd was approved and water use certification 29005996 was issued for Section 21 (c) and (i) (NWA) activities.

SITE SPECIFIC AIR QUALITY AND NOISE AMBIANCE

Emission into the atmosphere is controlled by the National Environmental Management: Air Quality Act, 2004. The Zandberg Sand Mine does not trigger an application in terms of the said act, nor will the proposed extension activity. Emissions generated/to be generated at the mine mainly consist of occasional dust due to the displacement of soil, and transport of the sand from the farm. Due to the small scale of the operation the noise levels generated at the mine is low and mainly stem from the operation of the FEL and trucks visiting the site.

The impact of the Zandberg Sand Mine on the air quality and noise ambiance of the receiving environmental will be assessed during the EIA process, but is expected to be of low significance. The DEIAR report will further proposed mitigation and management measures to address/minimise identified impacts.

SITE SPECIFIC MINING AND BIODIVERSITY CONSERVATION AREAS

Following the earlier discussion in this regard; when the footprint of S1 is layered over the Mining and Biodiversity Guideline Map it falls over an area of highest biodiversity importance with a corresponding rating of highest risk for mining. The Mining and Biodiversity Guideline notes that EIA's and specialists should focus on confirming the

presence and significance of these biodiversity features, identifying features not included in the existing datasets, and on providing site-specific information to guide the application of the mitigation hierarchy. The area of highest biodiversity importance also corresponds with the Langeberg CBA as identified in the 2017 Western Cape Biodiversity Spatial Plan.

In light of this, Nkurenkuru Ecology and Biodiversity was appointed to assess the sensitivity and conservation status of the area. The findings of the specialist will be discussed in detail in the draft environmental impact assessment report (DEIAR). The discussion will also propose mitigation and management measures to address/minimise identified impacts on-site.

SITE SPECIFIC GROUNDCOVER

The groundcover of the proposed extension area is highly natural with little to no disturbance, and is representative of the Breede Sand Fynbos and North Sonderend Sandstone Fynbos vegetation types. Nkurenkuru Ecology and Biodiversity was appointed to conduct a botanical study of the proposed extension footprint. The study will describe the *status quo* with regard to vegetation cover, identify CBA's, ESA's and other areas/species of concern and proposed buffer zones, mitigation measures, and management actions to be considered during the EIA process. The findings of the study will be collated onto a sensitivity map to be overlain by the footprint of the proposed extension area. The study will be incorporated into the DEIAR to be distributed for public perusal.

Figure 18: Photographs showing the current groundcover of the proposed extension area.

SITE SPECIFIC CULTURAL AND HERITAGE ENVIRONMENT

As mentioned earlier, a Notice of Intend to Develop was submitted to Heritage Western Cape on 10 February 2020, upon which an Archaeological Impact Assessment and

Palaeontological Impact Assessment were requested (by HWC). The appropriate specialists will be appointed and the findings of the specialist will be included into the DEIAR.

SITE SPECIFIC SOCIO-ECONOMIC ENVIRONMENT

A Social and Labour Plan (SLP) was submitted as part of the S102 amendment application of the MR holder and will be discussed in detail in the DEIAR. The SLP forms the basis for the implementation of programmes and projects as key activity drivers of the development and operation of the mining activity in the Robertson area. It offers the building blocks for future economic development and growth of the local area. The scope of the document offers the MR holder a platform to engage in the development of the local economy and community through a basis of human resource development, economic delivery, business development and community participation. The nature of the document is therefore aimed at the widest possible comprehension and stimulation for inputs.

As this report forms part of a S102 amendment application to expand the current mining footprint, the number of employees will not increase. However, should the application be approved the lifespan of the mine may be extended that will directly contribute to employment reassurance of the FEL operator and directors. The Zandberg Sand Mine further indirectly supports the employment of procurement partners, through the payment for local services and suppliers.

SITE SPECIFIC EXISTING INFRASTRUCTURE

Apart from the power line that follows the La Chasseur/Agter-Kliphoogte road just inside the farm boundary, no other infrastructure has been established on the property that can be affected by the proposed extension development.

(d) Environmental and current land use map

(Show all environmental, and current land use features)

The environmental and current land use map is attached as Appendix 6.

i) Impacts Identified

(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 consultants with affected parties together with the significance, probability and duration of the impacts)

The following potential impacts were identified for the main activities associated with Site Alternative 1 and each phase of the proposed project. The listed impacts must be treated as preliminary, to be expanded upon proper assessment of the study area during the EIA process. The significance rating

was determined using the methodology as explained under *j) Methodology used in determining and ranking the significance of environmental impacts*. The impact rating listed below was determined for each impact **prior** to bringing the proposed mitigation measures into consideration. The degree of mitigation indicates the possibility of partial, full or no mitigation of the identified impact.

STRIPPING AND STOCKPILING OF TOPSOIL

Alteration of the agricultural sense of place

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium			**Site Alternative 1**		**Degree of Mitigation: Partial**		
2	5	1	2.6	2	5	3.5	**9.1**

Loss of agricultural land for duration of mining

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium			**Site Alternative 1**		**Degree of Mitigation: Partial**		
1	5	1	2	5	5	5	**10**

Visual intrusion as a result of mining

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium-High			**Site Alternative 1**		**Degree of Mitigation: Partial**		
2	5	2	3	5	5	5	**15**

Loss of Breede Sand Fynbos/CBA to access the mineral

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium-High			**Site Alternative 1**		**Degree of Mitigation: Partial**		
5	4	5	4.7	5	2	3.5	**16.5**

Loss of topsoil and fertility during mining and stockpiling

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium			**Site Alternative 1**		**Degree of Mitigation: Full**		
3	4	1	2.6	3	1	2	**5.2**

Infestation of the topsoil heaps and mining area with invader plant species

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium			**Site Alternative 1**		**Degree of Mitigation: Full**		
4	4	2	3.3	4	2	3	**9.9**

Potential impact on fauna within the footprint area

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Site Alternative 1**		**Degree of Mitigation: Full**		
2	4	1	2.3	2	2	2	**4.6**

Dust nuisance as a result of the mining activities

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Site Alternative 1**		**Degree of Mitigation: Full**		
2	5	2	3	3	3	3	**9**

Noise nuisance as a result of the mining activities

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Site Alternative 1**		**Degree of Mitigation: Partial**		
2	4	2	2.7	2	5	3.5	**9.5**

Potential impact on archaeological artefacts

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Site Alternative 1**		**Degree of Mitigation: Full**		
5	5	4	4.6	2	1	1.5	**6.9**

Erosion of the stripped area due to uncontrolled stormwater runoff

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Site Alternative 1**		**Degree of Mitigation: Full**		
3	4	1	2.6	4	2	3	**7.8**

EXCAVATION OF SAND FROM THE MINING FOOTPRINT AND LOADING ONTO TRUCKS

Visual intrusion associated with the extraction of the mineral.

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
Rating: Medium-High			**Site Alternative 1**		**Degree of Mitigation: Partial**		
2	5	2	3	5	5	5	**15**

Creating steep slopes and uneven surfaces

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
Rating: Medium			**Site Alternative 1**		**Degree of Mitigation: Full**		
3	4	1	2.6	4	5	4.5	**11.7**

Potential impact on the drainage lines/watercourses within the mining area (without buffers)

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low			**Site Alternative 1**			**Degree of Mitigation: Full**	
2	3	2	2.3	2	1	1.5	**3.5**

Potential impact on the drainage lines/watercourses within the mining area (with buffers)

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium-High			**Site Alternative 1**			**Degree of Mitigation: Full**	
3	5	5	4.3	4	5	4.5	**19**

Soil contamination from hydrocarbon spills

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
4	5	1	3.3	3	2	2.5	**8.3**

Disturbance to fauna within the footprint area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low			**Site Alternative 1**			**Degree of Mitigation: Full**	
2	4	1	2.3	2	2	2	**4.6**

Dust nuisance as a result of the mining activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
2	5	2	3	3	3	3	**9**

Noise nuisance as a result of the mining activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Partial**	
2	4	2	2.7	2	5	3.5	**9.5**

Potential impact associated with littering at the mining area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
3	5	2	3.3	3	3	3	**9.9**

Potential impact on areas of palaeontological concern

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
5	5	4	4.7	2	1	1.5	**7**

Facilitation of erosion

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
3	5	2	3.3	3	2	2.5	**8.3**

TRANSPORTING OF MINERAL

Dust nuisance caused by vehicles transporting the mineral

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
2	5	2	3	3	3	3	**9**

Degradation of the access road

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
2	5	1	2.6	4	5	4.5	**11.7**

Traffic impact on the La Chasseur/Agter-Kliphoogte road as a result of the mining activity

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
2	5	2	3	3	1	2	**6**

SLOPING AND LANDSCAPING (MEDIUM- & LONG TERM)

Erosion of returned topsoil after rehabilitation

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
3	5	1	3	4	2	3	**9**

Infestation of the reinstated area with invader plant species

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
4	4	2	3.3	4	2	3	**9.9**

Potential impact associated with litter left at the mining area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
3	5	2	3.3	3	3	3	**9.9**

Uneven surfaces or steep slopes left upon closure of the site

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium			**Site Alternative 1**			**Degree of Mitigation: Full**	
3	4	1	2.6	4	5	4.5	**11.7**

Return of the mining area to agricultural use upon closure **(Positive Impact)**

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium-High			**Site Alternative 1**			**Degree of Mitigation: N/A**	
1	5	5	3.7	5	5	5	**18.5**

j) Methodology used in determining the significance of environmental impacts

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

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

DEFINITIONS AND CONCEPTS:

Environmental Significance:

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

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

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

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

Impact

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

Consequence

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

Likelihood

A qualitative term covering both probability and frequency.

Frequency

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

Probability

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

Environment

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

Methodology that will be used

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

Environmental Significance = Overall Consequence x Overall Likelihood

Determination of Overall Consequence

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

Determination of Severity / Intensity

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

Table 13: Table to be used to obtain an overall rating of severity, taking into consideration the various criteria.

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

Determination of Duration

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

Table 14: Criteria for the rating of duration.

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

Determination of Extent/Spatial Scale

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

Table 15: Criteria for the rating of extent / spatial scale.

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

Determination of Overall Consequence

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

Table 16: Example of calculating overall consequence.

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

Determination of Likelihood:

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

Determination of Frequency

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

Table 17: Criteria for the rating of frequency.

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

Determination of Probability

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

Table 18: Criteria for the rating of probability.

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

Overall Likelihood

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

Table 19: Example of calculating overall likelihood.

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

Determination of Overall Environmental Significance:

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

Table 20: Determination of overall environmental significance.

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

Qualitative description or magnitude of Environmental Significance

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

Table 21: Description of environmental significance and related action required.

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

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

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

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

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

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

LOW Impact would be negligible. In the case of negative impacts, almost no mitigation and or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple. In the case of positive impacts, alternative means would almost all likely be better, in one or a number of ways, than this means of achieving the benefit

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

k) 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)

As mentioned earlier, the project team thus far identified one site alternative with a possibility of various layout alternatives that must be assessed during the EIA process and discussed in the EIAR

Site Alternative 1 (S1):

Presently, Site Alternative 1 entails the extension of the current mining footprint (17.6826 ha) with 108.3851 ha over Portion 4 of the farm Zandberg fontein No 97, within the boundaries of the GPS coordinates listed in Table 6.

Site Alternative 1 was identified during the planning phase by the Applicant and project team, as the preferred site alternative based on the following:

- The proposed footprint offers the MR holder access to the sand deposit on the property.
- The extension of the mining area will prolong the lifespan of the Zandberg Sand Mine.
- Access to the proposed mining area is possible from the existing farm road with a formal (existing) entrance onto the nearby La Chasseur/Agter-Kliphoogte road.
- The proposed strip mining method and associated progressive rehabilitation of the area will minimise the visual impact of the activities on the receiving environment.

Layout Alternatives:

The layout of the mining area within the footprint of S1, or other site alternative (if identified), will be determined during the EIA process upon receipt of the specialist's input. Sensitive areas, identified by the specialist, will be portrayed on a map of the proposed footprint to deduce the allowable mining areas. Once the no-go (sensitive) areas were demarcated various layout alternatives will be investigated to identify the best possible option for the proposed activity.

Potential Positive Impacts:

- The MR Holder can utilize the sand resource on the property;
- The extension of the mining area will prolong the lifespan of the Zandberg Sand Mine;
- The proposed strip mining method and associated progressive rehabilitation of the area will minimise the visual impact of the activities on the receiving environment;
- Return of the mining area to agricultural use upon closure.

Potential Negative Impacts:

STRIPPING AND STOCKPILING OF TOPSOIL

- Alteration of the agricultural sense of place;
- Loss of agricultural land for duration of mining;
- Visual intrusion as a result of mining;
- Loss of Breede Sand Fynbos/CBA to access the mineral;
- Loss of topsoil and fertility during mining and stockpiling;
- Infestation of the topsoil heaps and mining area with invader plant species;
- Potential impact on fauna within the footprint area;
- Dust nuisance as a result of the mining activities;
- Noise nuisance as a result of the mining activities;
- Potential impact on archaeological artefacts;
- Erosion of the stripped area due to uncontrolled stormwater runoff.

EXCAVATION OF SAND FROM THE MINING FOOTPRINT AND LOADING ONTO TRUCKS

- Visual intrusion associated with the extraction of material;
- Creating steep slopes and uneven surfaces;
- Potential impact on the drainage lines/watercourses within the mining area (without buffers);
- Potential impact on the drainage lines/watercourses within the mining area (with buffers);
- Soil contamination from hydrocarbon spills;
- Disturbance to fauna within the footprint area;
- Dust nuisance as a result of the mining activities;
- Noise nuisance as a result of the mining activities;
- Potential impact associated with littering at the mining area;
- Potential impact on areas of palaeontological concern;
- Facilitation of erosion.

TRANSPORTING OF MATERIAL

- Dust nuisance caused by vehicles transporting the material;
- Degradation of the access roads;
- Traffic impact on the bordering La Chasseur/Agter-Kliphoogte road as a result of the mining activity.

SLOPING AND LANDSCAPING (MEDIUM- & LONG TERM)

- Erosion of returned topsoil after rehabilitation;
- Infestation of the reinstated area with invader plant species;
- Potential impact associated with litter left at the mining area;
- Uneven surfaces or steep slopes left upon closure of the site.

l) 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).

In light of the above listed impacts that may have a negative impact on the study area, the following preliminary mitigation measures are proposed to address/minimize the resulting impacts:

TOPOGRAPHY

Landscaping of Mining Area:

- To ensure minimum impact on drainage, it is essential that no depressions are left in the mining floor. A surface slope (even if minimal) must be maintained across the mining floor in the drainage direction, so that all excavations are free draining. This means that mining depths must be controlled on the down-slope side of the mine, so that the mining floor remains free-draining and above the low point for drainage out of the mining area.
- Mining depths must be controlled across the entire mine so that excavations results in a levelling of the footprint rather than a hole with steep edges.
- After mining, any steep slopes at the edges of excavations must be reduced to a minimum and profiled to blend with the surrounding topography. The entire surface must be sufficiently smoothed and profiled to allow cultivation.

VISUAL CHARACTERISTICS

Visual Mitigation:

- The site must have a neat appearance and be kept in good condition at all times.
- Mining equipment (FEL) must be stored neatly in a dedicated area when not in use.

- Concurrent rehabilitation must be done as strip mining progress to limit the visual impact on the aesthetic value of the area.
- The MR holder must limit vegetation removal, and stripping of topsoil may only be done immediately prior to the mining/use of a specific area.
- Upon closure the site must be rehabilitated and levelled to ensure that the visual impact on the aesthetic value of the area is kept to a minimum.

GEOLOGY AND SOIL

Topsoil Management:

- The upper 300 mm of the soil, of the strip to be mined, must be stripped and stockpiled before mining.
- Topsoil is a valuable and essential resource for rehabilitation and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.
- Topsoil stripping, stockpiling and re-spreading must be done in a systematic way. The mining plan have to be such that topsoil is stockpiled for the minimum possible time.
- The topsoil must be placed on a levelled area, within the mining footprint. No topsoil may be stockpiled in undisturbed areas.
- Topsoil stockpiles must be protected against losses by water- and wind erosion. Stockpiles must 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.
- Topsoil heaps may not exceed 1.5 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.
- The temporary topsoil stockpiles must be kept free of invasive plant species.
- Storm- and runoff water must be diverted around the stockpile area to prevent erosion.
- The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site.
- The MR holder must strive to re-instate topsoil at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal.
- A cover species must be planted, irrigated and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. The cover species must be fertilized for optimum biomass production, and any soil deficiencies must be corrected, based on a chemical analysis of the re-spread soil (if deemed necessary). It is important that rehabilitation be taken up to the

point of cover species stabilization. Rehabilitation cannot be considered complete until the first cover species is well established.

- The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.

HYDROLOGY

Management of Drainage Lines:

- Upon receipt of the specialist's studies and identification of the drainage lines in the proposed mining footprint, the areas of importance must be demarcated with a buffer no-go area and no mining may take place within any of the drainage lines.

Storm Water Mitigation:

- Soil that are to be removed must be done so at right angles to the slope, as this will slow down surface runoff and help to prevent erosion.
- Storm water must be diverted around the topsoil heaps and mining areas to prevent erosion.
- During mining, the outflow of run-off water from the mining excavation must be controlled to prevent down-slope erosion. This must be done by way of the construction of temporary banks and ditches that will direct run-off water. These must be in place at any points where overflow out of the excavation might occur.
- Mining must be conducted only in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management, developed by the Department of Water and Sanitation (DWS), and any other conditions which that Department may impose:
  - Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. You must prevent clean water from running or spilling into dirty water systems.
  - Dirty water must be collected and contained in a system separate from the clean water system.
  - Dirty water must be prevented from spilling or seeping into clean water systems.
  - A storm water management plan must apply for the entire life cycle of the mining activity and over different hydrological cycles (rainfall patterns).
  - The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into a storm water management plan.

AIR AND NOISE AMBIANCE

Fugitive Dust Emission Mitigation:

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

Noise Handling:

- The MR holder must ensure that the employee and visitors to the site conduct themselves in an acceptable manner while on site.
- No loud music may be permitted at the mining area.
- All mining vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).
- Best practice measures shall be implemented in order to minimize potential noise impacts.

MINING, BIODIVERSITY AND GROUNDCOVER

Management of Vegetation Removal and Conservation of Breede Sand Fynbos/CBA:

- The mining boundaries must be clearly demarcated and all operations must be contained to the approved mining area.
- The area outside the mining boundaries must be declared a no-go area, and the operator must be educated accordingly.

- Any no-go/buffer areas proclaimed by the botanist within the mining footprint must be demarcated, with permanent beacons, and no mining may enter into these areas.

Management of Invasive Plant Species:

- An invasive plant species management plan must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the mining activities.
- All stockpiles (topsoil) must be kept free of invasive plant species.
- Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:
  - The plants can be uprooted, felled or cut off and can be destroyed completely.
  - The plants can be treated chemically by a registered pest control officer (PCO) through the use of an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.

FAUNA

Protection of Fauna:

- The site manager must ensure no fauna is caught, killed, harmed, sold or played with.
- Workers must be instructed to report any animals that may be trapped in the working area.
- No snares may be set or nests raided for eggs or young.

CULTURAL AND HERITAGE ENVIRONMENT

Archaeological, Heritage and Palaeontological Aspects:

- All mining must be confined to the development footprint area.
- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.

- The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify Heritage Western Cape (HWC).
- Work may only continue once the go-ahead was issued by HWC.

LAND USE

Loss of agricultural land for duration of mining:

- The temporary loss of agricultural land for the duration of the mining period is acceptable to the landowner as the area has to date not been actively cultivated. If needed, mined-out/rehabilitated areas will revert back to the landowner once the cover species stabilised.

EXISTING INFRASTRUCTURE

Access Road Mitigation:

- Storm water must be diverted around the access road to prevent erosion.
- Vehicular movement must be restricted to the existing access road and crisscrossing of tracks through undisturbed areas must be prohibited.
- Rutting and erosion of the access road caused as a direct result of the mining activities must be repaired by the M holder.
- Overloading of the trucks must be prevented.
- The MR Holder must adhere to the DTPW conditions submitted as part of the land use application.

GENERAL

Waste Management:

- Regular vehicle maintenance, repairs and services may only take place at the off-site workshop and service area. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a closed container/bin to be removed from the emergency service area (same day) to the workshop in order to ensure proper disposal.
- Ablution facilities must be provided in the form of a chemical toilet. The chemical toilet shall be serviced at least once a month for the duration of the mining activities.
- The use of any temporary, chemical toilet facilities must not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal

of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the MR holder.

- If a diesel bowser is used on site, it must be equipped with a drip tray at all times. Drip trays must be used during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling.
- Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site.
- Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility.
- Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. Proof must be filed.
- All general waste must be contained within the site vehicles and daily be removed from the mining area to the general waste storage area at the offices on the farm.
- No waste may be buried or burned on the site.
- It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities is reported to the Department of Water and Sanitation and other relevant authorities.

Management of Health and Safety Risks:

- Adequate ablution facilities and water for human consumption must daily be available on site.
- Worker(s) must have access to the correct personal protection equipment (PPE) as required by law.
- All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).

m) The outcome of the site selection Matrix Final Site Layout Plan

(Provide a final site layout plan as informed by the process of consultation with interested and affected parties)

The most current site activities map was compiled upon assessment of the site specific conditions and contribution of the consultation process and is attached as Appendix 4 to this document.

n) Motivation where no alternative sites were considered

As mentioned earlier, project/site alternatives do not apply to the current Zandberg operation as the mine has been operation since 1994.

For the proposed extension area, the project team identified one site alternative with a possibility of various layout alternatives that will be assessed during the EIA process and discussed in the EIAR.

The position of Site alternative 1 was based on the presence of the sand resource, and the location of the approved mining right on the property. The proposed extension area borders the farm boundaries to the north and south, and moving it to the east or west will move the footprint from the optimal sand reserve. In light of this, Site Alternative 1 is presently deemed the only viable alternative site.

o) Statement motivating the preferred site

(Provide a statement motivation of the final site layout that is proposed)

S1 was identified during the planning phase by the MR holder and project team as the preferred site alternative based on the availability of the mineral resource. Should additional viable site alternatives be identified during the EIA process, the project team will heed the suggestions, and investigate the possible implementation thereof. Such site alternatives (if identified) will be discussed in detail in the draft EIAR to be distributed for public comments.

The layout of the mining area within the footprint of S1, or other site alternative (if identified), will be determined during the EIA process upon receipt of the specialist's input. Once the no-go (sensitive) areas were demarcated various layout alternatives will be investigated to identify the best possible option for the proposed activity.

3. PLAN OF STUDY FOR THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

a) Description of alternatives to be considered including the option of not going ahead with the activity

Site Alternative:

Site Alternative 1 entails the extension of the current mining footprint (17.6826 ha) with 108.3851 ha over Portion 4 of the farm Zandberg fontein No 97, within the boundaries of the GPS coordinates as presented in Table 6. Should additional viable site alternatives be identified during the EIA process, the project team will heed the suggestions, and investigate the possible implementation thereof. Such site alternatives (if identified) will be discussed in detail in the draft EIAR to be distributed for public comments

Layout Alternatives

The layout of the mining area within the footprint of S1, or other site alternative (if identified), will be determined during the EIA process upon receipt of the specialist's input. Sensitive areas, identified by the specialist, will be portrayed on a map of the proposed footprint to deduce the allowable mining areas. Once the no-go (sensitive) areas were demarcated various layout alternatives will be investigated to identify the best possible option for the proposed activity.

No-go Alternative

The no-go alternative entails no change to the *status quo* and is therefore a real alternative that needs to be considered. In the event that the no-go alternative is implemented the land use of the earmarked footprint will remain that of agriculture, and livestock farming with the sand resource unmined. Amongst others, the impact of mining on current, and future land uses of the study area will be compared to the *status quo* and will be considered as part of the EIA process, and discussed in the DEIAR.

b) Description of the aspects to be assessed as part of the environmental impact assessment process

(The EAP must undertake to assess the aspects affected by each individual mining activity whether listed or not, including activities such as blasting, Loading, hauling and transport, and mining activities such as Excavations, stockpiles, discard dumps or dams, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc....etc.)

The aspects to be assessed as part of the environmental impact assessment process that will follow upon approval of the Scoping Report by the DMRE will include, but not be limited to, the following:

1. Various alternatives (site (if applicable), layout etc.) will be considered during the EIA process as supplementary information becomes available. Viable preferred alternatives will in turn dictate the design and layout of the proposed project.

2. Upon deciding on the preferred alternatives, the applicability of the listed activities identified in terms of the NEMA EIA Regulations, 2014 (as amended) will be confirmed and aligned with the most recent proposal.

3. The need and desirability of the proposed activity will be discussed in detail and weighed against the no-go option of upholding the *status quo* at the study area.

4. The inputs received during the public participation process (first- and second phase) will be assessed and considered by the project team during the EIA process.

5. The findings, recommendations and management measure proposed in the Botanical Study, Archaeological Impact Assessment, and the Palaeontological Impact Assessment will be assessed during the EIA process and incorporated into the DEIAR.

6. The impact of the proposed project on the physical-, biological-, and human environments will be assessed. The nature, probability and significance of the potential impacts associated with the project will be determined through the use of the above mentioned methodology.

7. Mitigation measures will be proposed to control, modify, remedy or stop the impacts associated with the proposed activity on the surrounding environment.

8. Any additional requirements submitted by the DMRE will be incorporated into the DEIAR and treated accordingly.

c) Description of aspects to be assessed by specialists

The Screening Report for an Environmental Authorisation or for a part two amendment of an Environmental Authorisation as required by the 2014 EIA Regulations (as amended) proposed the following specialist studies for the intended activity:

- Agricultural Impact Assessment;
- Landscape/Visual Impact Assessment;
- Archaeological and Cultural Heritage Impact Assessment;
- Paleontology Impact Assessment;
- Terrestrial Biodiversity Impact Assessment;
- Aquatic Biodiversity Impact Assessment;
- Hydrology Assessment;
- Noise Impact Assessment;
- Radioactivity Impact Assessment;
- Traffic Impact Assessment;
- Geotechnical Assessment;
- Climate Impact Assessment;
- Health Impact Assessment;
- Socio-economic Assessment;
- Ambient Air Quality Impact Assessment;
- Seismicity Assessment;
- Plant Species Assessment;
- Animal Species Assessment.

In light of the scale and nature of the proposed activity, the above list of studies is deemed excessive and therefore the following is proposed:

- Agricultural Impact Assessment (AIA):

  The screening tool shows the agricultural sensitivity of the footprint is Low. The ENPAT (Environmental Potential Atlas for South Africa) agricultural dataset indicates that the soils of the study area are not suitable for arable agriculture but can still be used for grazing. Sand “blow-outs” is visible in the surface in various places on the property. The temporary loss of agricultural

land for the duration of the mining period is acceptable to the landowner as the area has to date not been actively cultivated. If needed, mined-out/rehabilitated areas will revert back to the landowner once the cover species stabilised. In light of this, no agricultural impact assessment is deemed necessary.

- Landscape/Visual Impact Assessment:
  The Zandberg mining method entails strip mining that is representative of the small scale mining industry where the sand is loaded with one front-end-loader (FEL) directly onto the trucks of clients that transports it from site. Little to no stockpiling is required and no washing of sand is needed. The MR Holder removes the topsoil of a strip of ±0.25 ha within which the sand is mined in a block of approximately 50 x 50 m. Topsoil is replaced over every mined-out strip (±0.25 ha) prior to the opening of the consecutive strip. Each rehabilitated strip is seeded to establish a vegetation cover that stabilise the reinstated topsoil. In light of this, at any given moment approximately ±0.5 ha of the mining area will be devoid/partially devoid of vegetation (±0.25 ha being mined, and ±0.25 ha rehabilitated and in the process of re-vegetating). Due to the small scale of the project, no visual impact assessment is deemed necessary.

- Archaeological and Cultural Heritage Impact Assessment (HIA) & Paleontology Impact Assessment (PIA):
  An archaeologist and palaeontologist will be appointed to conduct the HIA and PIA as requested by Heritage Western Cape.

- Terrestrial Biodiversity Impact Assessment (TBIA) & Plant Species Assessment (PSA):
  Nkurenkuru Ecology and Biodiversity was appointed to conduct a botanical study of the proposed extension area. The findings of the specialist will be incorporated into the draft EIAR.

- Aquatic Biodiversity Impact Assessment (ABIA) & Hydrology Assessment (HA):
  The study area is located within the Upper Breede Sub-Water Management Area which is managed as part of the Breede Water Management Area by the Department of Water and Sanitation (DWS). Portion 4 of Zandberg fontein 97 falls within the H40J quaternary catchment, however it extends over an area classified as a Phase 2 FEPA (Freshwater Priority Area) according to the National Wetlands and NFEPA map of SANBI. Broad scale wetland mapping conducted by the National Wetlands and National Freshwater Ecosystem Priority Areas (NFEPA) initiative does not show any water feature within the earmarked extension boundaries.

  A wetland delineation formed part of the water use application submitted to the DWS in 2017. The study concluded that a nearby wetland area is an anthropologically induced wetland that

could perhaps be classified as “incidental” rather than “artificial”. It bears no special or other any conservation status. The report stated that since the trench (leading to the soil dam on the farm) is entirely artificial with an insignificant conservation status it is of no concern at all and therefore recommended that the mining (approved mining area) should go ahead. In April 2018, the general authorisation of Zandberg Sandput (Pty) Ltd was approved and water use certification 29005996 was issued for Section 21 (c) and (i) activities. It is proposed that buffer areas will be placed around all drainage lines that may transverse the mining area and no mining will be allowed in any watercourse. In light of this, no need was identified for a ABIA or HA.

- Noise Impact Assessment (NIA) & Ambient Air Quality Impact Assessment:
  The sand mine contributes the noise and emissions of one front-end-loader and ±10 trucks/day to the receiving environment. The Zandberg Sand Mine has been operational for the past 26 years and the proposed extension of the mining area will not cause an increase in site machinery. It is therefore believed that the mine has already become a fixture in the area and therefore no noise/air quality impact assessment is needed.

- Radioactivity Impact Assessment & Seismicity Assessment
  No radioactivity impact assessment or Seismicity Assessment is deemed necessary as the sand mining operation will not store any chemicals on site, perform activities of radioactive nature or generate hazardous waste of radioactive nature. The project also entails surface mining of the sand resource and no bedrock will be disturbed.

- Traffic Impact Assessment (TIA):
  As mentioned earlier, the mine has been in existence for the past 26 years and to date no traffic related impacts were identified. The proposed extension of the mining area will not cause an increase in the traffic visiting the site and therefor no TIA is deemed applicable.

- Geotechnical Assessment:
  No reason for a geotechnical assessment could be identified as no permanent infrastructure will be established at the mining area, and mining will not create a deep void with high faces.

- Climate Impact Assessment & Health Impact Assessment:
  The proposed extension of the mining area will not affect the climate or health of the surrounding community. The mine employs one operator and the operation of the mine is in accordance with the Mine Health and Safety Act, 2016. Therefore, no Climate and/or Health Impact Assessment is deemed necessary.

- Socio-economic Assessment (SEA):
  Zandberg Sand Mine operates in accordance with the approved Social and Labour Plan of the mine as required for each mining right holder. The extension of the mining area will not increase the labour component of the MR Holder nor have a cumulative impact on the socio-economic status of the area and therefore a socio-economic assessment is not deemed necessary.

- Animal Species Assessment.
  Due to the small scale of the operation and the mining method that creates open areas into which fauna can move away from the excavation, the impact on the faunal component of the receiving environment is deemed to be of low significance and therefor an animal species assessment is not deemed applicable to this application.

In summary the following specialist studies will be conducted as part of the EIA process:

Botanical Impact Assessment:

- Describe the vegetation communities present within the proposed mining footprint area;
- Identify ESA, CBA or similar areas of concern within the study area and collate the information in a sensitive map overlain by the proposed mining footprint;
- Compile a list of endangered, red data, or otherwise protected plants observed during the study;
- Elaborate on the potential impacts that the proposed activity may have on the receiving ecology as well as the conservation status of the Langeberg CBA;
- Compile recommendations, proposed management actions and mitigation measures to alleviate identified impacts.

Archaeological Impact Assessment:

- The goal of the study will be the compilation of a Phase 1 Heritage Impact Assessment Report (HIA).
- The HIA will describe all archaeological and historical artefacts, structures and settlements documented in the area;
- Establish the level of sensitivity/importance of the archaeological and historical remains in the area;
- Proposed practical mitigation measures for potential impacts;
- Indicate limitations and assumptions; and
- Propose recommendations on the way forward.

Palaeontological Impact Assessment:

- The palaeontologist will conduct a desktop study to determine the sensitivity of the palaeontological environment within the study area.

- Identify any areas of concern and propose recommendations thereof.
- Proposed management and mitigation measure for the proposed project.

d) Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

The impact assessment component of the EIA is subdivided into several environmental aspects to be studied as listed below (preliminary list):

- Topography;
- Visual Characteristics;
- Geology and Soils;
- Hydrology and Geohydrology;
- Air Quality and Noise Ambiance;
- Mining, Biodiversity and Groundcover;
- Fauna;
- Cultural and Heritage Environment;
- Socio-economic Environment / Land Use;
- Existing Infrastructure; and
- Site (if applicable) and Layout Alternatives including the No-go Option.

Greenmined will use in-house specialists to review the environmental aspects which will be assessed as part of the environmental impact assessment process. The environmental aspects briefly described in the Scoping Report will be updated, and site and technology specific impacts and mitigation recommendations will be made and be reviewed by the project team, registered stakeholders and I&AP's, and competent authority (DMRE).

The significance of the impacts will be assessed in terms of the methodology described in *Section 2 j) Methodology Used in Determining and Ranking the Significance.*

e) The proposed method of assessing duration significance

The significance of the identified impacts will be determined using the approach outlined in *Section 2 j) Methodology Used in Determining and Ranking the Significance*. The environmental significance assessment methodology is based on the Overall Consequence x Overall Likelihood.

Consequence analysis is a mixture of quantitative and qualitative information and the outcome can be positive or negative. For the purpose of determining the environmental significance in terms of

consequence, the following factors were chosen: Severity/Intensity, Duration and Extent/Spatial Scale.

The determination of likelihood is a combination of Frequency and Probability.

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

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

Assessing duration significance forms part of the environmental significance determination of the impacts and will be assessed accordingly.

f) The stages at which the competent authority will be consulted

The Section 102 amendment application in terms of the MPRDA, 2002 was submitted to the DMRE on 10 June 2020. This application was also accompanied by an application for environmental authorisation in terms of NEMA, 1998. DMRE acknowledged receipt of the application for environmental authorisation in terms of section 24 of the NEMA, 1998 on 15 July 2020. As competent authority the DMRE was invited to comment on the Draft Scoping Report (DSR) – to date no comments were received that could be incorporated into the final Scoping Report (FSR).

This report is the FSR to be submitted to the DMRE for approval. Should the DMRE approve the FSR, the draft EIA report, including all investigations, assessments and the specialist studies, will be circulated for a 30-day commenting period. Any additional requirements received from the DMRE will be added to the Final EIA report to be submitted for approval.

As stipulated in the NEMA EIA Regulations, 2014 (as amended 2017) read together with the MPRDA, 2002, the EIA process will comprise of the following:

1. Application for Environmental Authorization and a Section 102 amendment of the Mining Right uploaded with accompanying documentation to the online SAMRAD system;
2. The DMRE accepts the application;
3. Draft Scoping Report circulated for perusal by I&AP's and stakeholders (including the DMRE);
4. Final Scoping Report (FSR) submitted to the DMRE;
5. The DMRE decision on FSR;
6. If the FSR is approved, the Draft EIA report is circulated for perusal by I&AP's and stakeholders (including the DMRE);

7. Final EIA report submitted to DMRE;
8. The DMRE decision on Final EIA report;
9. If the FEIAR is approved, the DMRE issues the Environmental Authorizations;
10. Appeal period;
11. Submission of the Financial Provision amount;
12. Approval of supporting documentation including, but not limited to, the amended Mine Works Programme, and -Social and Labour Plan; and finally
13. Execution of the Mining Right amendment.

g) Particulars of the public participation process with regard to the Impact Assessment process that will be conducted

i) Steps to be taken to notify interested and affected parties.

(These steps must include the steps that will be taken to ensure consultation with the affected parties identified in (h) (ii) herein).

The aspects to be assessed as part of the environmental impact assessment process were added to the Draft Scoping Report that was distributed to all registered I&AP's and stakeholders for a 30-day commenting period.

The registered I&AP's and stakeholders were provided with a copy (hard/electronic copy) of the Draft Scoping Report for their perusal, while the rest of the stakeholders and I&AP's (unregistered) were notified of the availability of the DSR should they be interested in commenting. An electronic copy of the document was also available on the Greenmined website.

The comments and recommendations received on the Draft Scoping Report were added to this report, the Final Scoping Report, to be submitted to the DMRE for approval.

ii) Details of the engagement process to be followed

(Describe the process to be 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 the attended public meetings and records of such consultation will be required in the EIA at a later stage).

Public participation during the impact assessment phase of the EIA will entail a review of the findings of the EIA, presented in the Final Scoping Report and Draft EIA and EMPr Reports. These reports will be made available for public comment as described above.

I&APs will be advised of the availability of these reports and how to obtain them. They will be encouraged to comment in writing (mail or email). Any issues, comments or suggestions raised during the comment period will be added to the Comments and Response Report (CRR) that will accompany the draft- and final EIA & EMPR Report.

iii) Description of the information to be provided to Interested and Affected Parties.

(Information to be provided must include the initial site plan and sufficient detail of the intended operation and the typical impacts of each activity, to enable them to assess what impact the activities will have on them or on the use of their land.)

Upon approval of the Final Scoping Report, the Draft EIA report will be compiled. The Draft EIA & EMPR report will be circulated to the registered I&AP's and stakeholders for their perusal over a 30-days period.

The Environmental Impact Assessment Report and Environmental Management Programme Report templates prescribed by the DMRE in terms of the National Environmental Management Act, 1998 in respect of listed activities that have been trigger by this application will be used to assess the information with regard to the proposed extension of the mining footprint.

The research and analysis regarding the project will be processed and interpreted to compile the information required in the abovementioned template to be distributed for public comment.

h) Description of the tasks that will be undertaken during the environmental impact assessment process

The EIA process for the proposed extension project is depicted below:

1. Application for Environmental Authorization and S102 amendment of the Mining Right to the DMRE;
2. The DMRE accepts the application;
3. Draft Scoping Report circulated for perusal by I&AP's and stakeholders;
4. Final Scoping Report (FSR) submitted to DMRE;
5. The DMRE decision on FSR;
6. Impact Assessment Process:
   - Project description and site environmental baseline;
   - Impact assessment;
   - Mitigation measures and recommendations;
   - EMPr compilation;
7. Draft EIA report circulated for perusal by registered I&AP's and stakeholders;
8. Final EIA report submitted to DMRE;
9. The DMRE decision on Final EIA report;
10. Announcement of Environmental Authorization and Appeal Procedure;
11. Opportunity to Appeal;
12. Submission of Financial Provision amount;
13. Execution of the Mining Right amendment.

i) Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored

Table 22: Table listing the identified impacts, residual risks to be managed and monitored.

ACTIVITY Whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply, dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc)	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	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.	POTENTIAL FOR RESIDUAL RISK
⋉ Demarcation of site with visible beacons.	⋉ No impact could be identified.	<u>Control:</u> Implementation of proper housekeeping and site management.	LOW
⋉ Stripping and stockpiling of topsoil.	⋉ Alteration of the agricultural sense of place.	<u>Control:</u> Implementation of proper housekeeping and progressive rehabilitation to ensure the mining area can be returned to agricultural use.	LOW
⋉ Stripping and stockpiling of topsoil.	⋉ Loss of agricultural land for duration of mining.	Should the proposed project be approved, the operation will temporarily alter the zoning of the footprint area, only to be reversed upon the closure of the mine. The impact could be controlled through progressive rehabilitation.	LOW
⋉ Stripping and stockpiling of topsoil. ⋉ Excavation of sand.	⋉ Visual intrusion as a result of mining. ⋉ Visual intrusion associated with the extraction of the mineral.	<u>Control:</u> Proper housekeeping and implementation of progressive rehabilitation.	LOW

ACTIVITY Whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply, dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc)	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	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.	POTENTIAL FOR RESIDUAL RISK
⋉ Stripping and stockpiling of topsoil.	⋉ Loss of Breede Sand Fynbos/CBA to access the mineral.	Control & Modify: Consideration of various layout alternatives, and demarcation and management of no-go areas.	MEDIUM-HIGH
⋉ Stripping and stockpiling of topsoil. ⋉ Excavation of sand. ⋉ Sloping and landscaping (medium- & long term).	⋉ Loss of topsoil and fertility during mining and stockpiling. ⋉ Erosion of the stripped area due to uncontrolled stormwater runoff. ⋉ Facilitation of erosion. ⋉ Erosion of returned topsoil after rehabilitation.	Control & Remedy: Proper housekeeping and storm water management.	LOW
⋉ Stripping and stockpiling of topsoil. ⋉ Sloping and landscaping (medium- & long term).	⋉ Infestation of the topsoil heaps and mining area with invader plant species. ⋉ Infestation of the reinstated area with invader plant species.	Control: Implementing soil- and invader plant control/management.	LOW-MEDIUM
⋉ Stripping and stockpiling of topsoil. ⋉ Excavation of sand.	⋉ Potential impact on fauna within the footprint area. ⋉ Disturbance to fauna within the footprint area.	Control & Stop: Implementing good management practices.	LOW
⋉ Stripping and stockpiling of topsoil. ⋉ Excavation of sand. ⋉ Transporting of mineral.	⋉ Dust nuisance as a result of the mining activities.	Control: Dust suppression methods and proper housekeeping.	LOW

ACTIVITY Whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply, dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc)	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	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.	POTENTIAL FOR RESIDUAL RISK
	⁜ Dust nuisance caused by vehicles transporting the mineral.		
⁜ Stripping and stockpiling of topsoil. ⁜ Excavation of sand.	⁜ Noise nuisance as a result of the mining activities.	<u>Control:</u> Noise suppression methods and proper housekeeping.	LOW
⁜ Stripping and stockpiling of topsoil.	⁜ Potential impact on archaeological artefacts.	<u>Control & Stop:</u> Implementation of a chance-find procedure.	LOW
⁜ Excavation of sand. ⁜ Sloping and landscaping (medium- & long term).	⁜ Creating steep slopes and uneven surfaces. ⁜ Uneven surfaces or steep slopes left upon closure of the site.	<u>Control:</u> Progressive and effective rehabilitation according to the closure plan.	LOW-MEDIUM
⁜ Excavation of sand	⁜ Potential impact on the drainage lines/watercourses within the mining area (without buffers). ⁜ Potential impact on the drainage lines/watercourses within the mining area (without buffers).	<u>Modify:</u> Demarcation of buffer zones to prevent mining in the drainage lines.	LOW
⁜ Excavation of sand. ⁜ Sloping and landscapting (medium- & long terrm).	⁜ Soil contamination from hydrocarbon spills. ⁜ Potential impact associated with littering at the mining area. ⁜ Potential impact associated with litter left at the mining area.	<u>Control & Remedy:</u> Proper housekeeping and implementation of an emergency response plan and waste management plan.	LOW

ACTIVITY Whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply, dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc)	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	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.	POTENTIAL FOR RESIDUAL RISK
⁎ Excavation of sand.	⁎ Potential impact on areas of palaeontological concern.	<u>Control & Stop:</u> Implementing good management practices, as well as the chance-find protocol.	LOW
⁎ Transporting of mineral.	⁎ Degradation of the access roads. ⁎ Traffic impact on the bordering La Chasseur/Agter-Kliphoogte road as a result of the mining activity.	<u>Control & Remedy:</u> Maintaining the access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to mining.	LOW

j) Other Information required by the competent Authority

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

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

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

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

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

  The removal of the vegetation cover to access the sand will impact on the visual character of the study area. The significance of this impact must be fully assessed during the EIA process taking layout alternatives into consideration in an attempt to reduce the impact as much as possible.

- **Impact on the air quality and noise ambiance of the study area:**

  The presence of the sand potentially increases the possibility of dust and noise related impacts on the receiving environment. The degree of impact as well as the significance of dust and noise generation must be assessed during the EIA process. By nature, these impacts require constant monitoring to be implemented throughout the operational-, and decommissioning phases of the project.

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

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

The presence of national estate as referred to in section 3(2) of the NHRA, 1999 will be assessed by the archaeologist and palaeontologist as part of the phase 1 heritage impact assessment and palaeontological impact assessment to follow during the EIA process. The MR holder indicated that should such areas of importance be identified the recommendations of the specialists will be heeded with changes being made to the design and or layout of the proposed project footprint.

k) 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 EAP must attach such motivation as **Appendix 4)**

The alternatives to be considered during the impact assessment process will be done at the hand of information obtained during the site investigation, public participation process, desktop studies as well as the specialist studies conducted of the earmarked area. As discussed earlier the following alternatives will be assessed in the EIAR:

Site Alternatives

Should additional viable site alternatives be identified during the EIA process, the project team will heed the suggestions and investigate the possibility of implementing it. These alternatives (if identified) will be discussed in detail in the draft EIAR to be distributed for public comments.

Layout Alternatives

Various layout alternatives can be considered during the EIA process as supplementary information is obtained, and the stakeholders and I&AP's contribute their knowledge towards the proposed project.

No-go Alternative

Amongst others, the impact of mining on current, and future land uses of the study area will be compared to the *status quo* and will be considered as part of the EIA process, and discussed in the DEIAR.

l) UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I Christine Fouche **herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs form stakeholders and Interested and Affected parties has been correctly recorded in the report.**

Signature of the EAP
DATE: 27 July 2020

m) UNDERTAKING REGARDING LEVEL OF AGREEMENT

I Christine Fouche **herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorder and reported herein.**

Signature of the EAP
DATE: 27 July 2020

REFERENCES

Department of Environmental Affairs, Department of Mineral Resources, Chamber of Mines, South African Mining and Biodiversity Forum, and South African National Biodiversity Institute. 2013. Mining and Biodiversity Guideline: Mainstreaming biodiversity into the mining sector. Pretoria. 100 pages.

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