Stads- en Streekbeplanners
Town and Regional Planners

Yorkstraat 56 York Street | Posbus 1186/P.O. Box 1186 | George 6530 | Tel: (044) 874 5207 | Fax: (044) 8736354
Cell: 082 569 2438 E-pos/E-mail: neldek@mweb.co.za

12 November 2024

The Municipal Manager
P.O. Box 19
George
6530

Sir

PROPOSED CONSENT USE FOR A QUARRY ON PORTION 19 OF THE FARM BUFFELS DRIFT No. 227, SITUATED IN THE MUNICIPALITY AND DIVISION OF GEORGE, WESTERN CAPE.

Duly authorized by the registered owner of Portion 19 of the Farm Buffels Drift No. 227, George, we hereby apply for the following:

Application is being made for a consent use for a quarry in terms of Section 15.(2)(o) of the By-Law on Municipal Land Use Planning of George Municipality, 2023, in order to mine aggregate, sand and gravel from the property.

In support of the application, the following documentation is attached for your consideration:

a) Application form fully completed and signed (Annexure 1);
b) Power of Attorney by the Registered Owner (Annexure 2);
c) Letter by Bondholder (Annexure 3);
d) Motivation Report (Annexure 4);
e) Copy of the General Plan No. 716/53 (Annexure 5);
f) Plan No. G/I/214-1 dd. November 2024 (Annexure 6);
g) Site Development Plan (Annexure 7);
h) Proof of Payment will be provided in due course as it is made available to the applicant (Annexure 8);
i) Copy of Title Deed No. T28967/93 (Annexure 9);
j) Conveyancer certificate by Herman Josias Swanepoel (Annexure 10);

k) Environmental Authorisation dd. 31/07/2024 (Annexure 11);
l) Mining Permit dd. 04/09/2024 (Annexure 12);
m) Basic Assessment Report by Stephen Davey of Klipberg Consulting (Annexure 13);
n) Aquatic Biodiversity Compliance Statement by Debbie Fordham (Annexure 14);
o) Rehabilitation Plan (Annexure 15);
p) Agricultural Assessment by Johan Lanz (Annexure 16);
q) Stormwater Management Plan by M Charl Bester (Annexure 17);
r) Terrestrial Biodiversity Compliance Statement (Annexure 18); and
s) Copy of Pre-Application dd. 24/10/2024 (Annexure 19).

Should any additional information be required you are kindly requested to contact us.

Yours Sincerely

Nel & de Kock Town and Regional Planners
Per: Alexander Havenga A/3313/2023

ANNEXURE 1

GEORGE
THE CITY FOR ALL REASONS

Application Form for Application(s) Submitted in terms of the Land Use Planning By-Law for George Municipality

NOTE: *Please complete this form by using: Font: Calibri; Size: 11*					
PART A: APPLICANT DETAILS					
First name(s)	**Alexander**				
Surname	**Havenga**				
SACPLAN Reg No. (if applicable)	**Pr. Pln A/3313/2023**				
Company name (if applicable)	**Nel & de Kock Town and Regional Planners**				
Postal Address	***P.O. Box 1186,***				
	George		*Postal Code*	**6530**	
Email	**neldek@mweb.co.za**				
Tel	**044 874 5207**	*Fax*	**n/a**	*Cell*	**079 513 3530**
PART B: REGISTERED OWNER(S) DETAILS (if different from applicant)					
Registered owner	**Gerhard Adam Barnard & Marian Lyn Barnard**				
Address	**Farm Buffels Drift**				
	George Rural		*Postal code*	**6529**	
E-mail	**marianbarnard09@gmail.com**				
Tel	**n/a**	*Fax*	**n/a**	*Cell*	**082 808 8585**
PART C: PROPERTY DETAILS (in accordance with Title Deed)					
Property	**Portion 19 of the Farm Buffels Drift No 227, George**				

Description [Erf / Erven / Portion(s) and Farm number(s), allotment area.]								
Physical Address	**Farm Buffels Drift, Sinksabrug, George**							
GPS Coordinates	**34°00'48.60"S 22°20'12.61"E**			*Town/City*	**George Rural**			
Current Zoning	**Agricultural Zone I**		*Extent*	**55.1787ha**	*Are there existing buildings?*	Y	**N**	
Current Land Use	**Agriculture**							
Title Deed number & date	**T28967/93**							
Any restrictive conditions prohibiting application?	Y	**N**	*If Yes, list condition number(s).*					
Are the restrictive conditions in favour of a third party(ies)?	Y	**N**	*If Yes, list the party(ies).*					
Is the property encumbered by a bond?	**Y**	N	*If Yes, list Bondholder(s)?*	**ABSA**				
Has the Municipality already decided on the application(s)?	Y	**N**	*If yes, list reference number(s)?*					
Any existing unauthorized buildings and/or land use on the subject property(ies)?			Y	**N**	*If yes, is this application to legalize the building / land use?*	Y	**N**	
Are there any pending court case / order relating to the subject property(ies)?			Y	***N***	*Are there any land claim(s) registered on the subject property(ies)?*	Y	***N***	

PART D: PRE-APPLICATION CONSULTATION						
Has there been any pre-application consultation?	**Y**	N	*If Yes, please complete the information below and attach the minutes.*			
Official's name	**Robert Janse van Rensburg**	*Reference number*	**Collab no. 3452293**	*Date of consultation*	**24/10/2024**	

PART E: LAND USE APPLICATIONS IN TERMS OF SECTION 15 OF THE LAND USE PLANNING BY-LAW FOR GEORGE MUNICIPALITY & APPLICATION FEES PAYABLE

***Application fees that are paid to the Municipality are non-refundable and proof of payment of the application fees must accompany the application.**

BANKING DETAILS

Name:	***George Municipality***
Bank:	***First National Bank (FNB)***
Branch no.:	***210554***
Account no.:	***62869623150***
Type:	***Public Sector Cheque Account***
Swift Code:	***FIRNZAJJ***
VAT Registration Nr:	***4630193664***
E-MAIL:	***msbrits@george.gov.za***
****Payment reference**:*	**Erven ____, George/Wilderness/Hoekwil…**

PART F: DETAILS OF PROPOSAL

Brief description of proposed development / intent of application:

Application is being made for a consent use for a quarry in terms of Section 15.(2)(o) of the By-Law on Municipal Land Use Planning of George Municipality, 2023, in order to mine aggregate, stone and gravel from Portion 19 of the Farm Buffels Drift No. 227, George.

PART G: ATTACHMENTS & SUPPORTING INFORMATION FOR LAND USE PLANNING APPLICATIONS

Please complete the following checklist and attach all the information relevant to the proposal. Failure to submit all information required will result in the application being deemed incomplete.

Is the following compulsory information attached?

Y	*N*	*Completed application form*		**Y**	N		*Pre-application Checklist (where applicable)*
Y	*N*	*Power of Attorney / Owner's consent if applicant is not owner*		**Y**	N		*Bondholder's consent*
Y	*N*	*Motivation report / letter*		***Y***	*N*		*Proof of payment of fees*
Y	*N*	*Full copy of the Title Deed*		***Y***	*N*		*S.G. noting sheet extract / Erf diagram / General Plan*
Y	*N*	*Locality Plan*		***Y***	*N*		*Site layout plan*

Minimum and additional requirements:

Y	N	*N/A*	*Conveyancer's Certificate*		*Y*	*N*	**N/A**	*Land Use Plan / Zoning plan*
Y	*N*	**N/A**	*Proposed Subdivision Plan (including street names and numbers)*		*Y*	*N*	***N/A***	*Phasing Plan*
Y	N	**N/A**	*Consolidation Plan*		Y	N	**N/A**	*Copy of original approval letter (if applicable)*
Y	N	*N/A*	*Site Development Plan*		Y	N	**N/A**	*Landscaping / Tree Plan*

Y	**N**	N/A	*Abutting owner's consent*		*Y*	N	**N/A**	*Home Owners' Association consent*
Y	N	N/A	*Copy of Environmental Impact Assessment (EIA) /* *~~Heritage Impact Assessment (HIA)~~* *~~Traffic Impact Assessment (TIA) / Traffic Impact Statement (TIS) /~~* *~~Major Hazard Impact Assessment (MHIA) /~~* *Environmental Authorisation (EA) / Record of Decision (ROD)*		Y	N	**N/A**	*1 : 50 / 1:100 Flood line determination (plan / report)*
Y	N	**N/A**	*Services Report or indication of all municipal services / registered servitudes*		**Y**	N	N/A	*Required number of documentation copies* **2 copies**
Y	*N*	N/A	*Any additional documents or information required as listed in the pre-application consultation form / minutes*		Y	N	**N/A**	*Other (specify)*
PART H: AUTHORISATION(S) IN TERMS OF OTHER LEGISLATION								
Y	***N/A***	*National Heritage Resources Act, 1999 (Act 25 of 1999)*					*Specific Environmental Management Act(s) (SEMA)* *(e.g. Environmental Conservation Act, 1989 (Act 73 of 1989), National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004),* *National Environmental Integrated Coastal Management Act, 2008 (Act 24 of 2008), National Environmental Management: Waste Act, 2008 (Act 59 of 2008),* *National Water Act, 1998 (Act 36 of 1998)* *(strikethrough irrelevant)*	
Y	N/A	*National Environmental Management Act, 1998 (Act 107 of 1998)*						
Y	**N/A**	*Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970)*			Y	**N/A**		
Y	**N/A**	*Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)(SPLUMA)*						
Y	**N/A**	*Occupational Health and Safety Act, 1993 (Act 85 of 1993): Major Hazard Installations Regulations*						
Y	**N/A**	*Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA)*			Y	**N/A**	*Other (specify)*	
Y	N/A	*If required, has application for EIA / HIA / TIA / TIS / MHIA approval been made? If yes, attach documents / plans / proof of submission etc.*						
Y	**N**	*If required, do you want to follow an integrated application procedure in terms of section 44(1)of the Land-Use Planning By-law for George Municipality?*						

SECTION I: DECLARATION

I hereby wish to confirm the following:

1. *That the information contained in this application form and accompanying documentation is complete and correct.*
2. *The Municipality has not already decided on the application.*
3. *I'm aware that it is an offense in terms of section 86(1)(d) to supply particulars, information or answers in an application, knowing it to be false, incorrect or misleading or not believing them to be correct.*
4. *I am properly authorized to make this application on behalf of the owner and (where applicable) copies of such full relevant Powers of Attorney/Consent are attached hereto.*
5. *I have been appointed to submit this application on behalf of the owner and it is accepted that correspondence from and notifications by the Municipality in terms of the by-law will be sent only to me as the authorised agent and the owner will regularly consult with the agent in this regard (where applicable).*
6. *That this submission includes all necessary land use planning applications required to enable the development proposed herein.*
7. *I confirm that the relevant title deed(s) have been read and that there are no restrictive title deed restrictions, which impact on this application, or alternatively an application for removal/amendment/suspension forms part of this submission.*
8. *I am aware of the status of the existing bulk services and infrastructure in the subject area and that I am liable for any possible development charges which may be payable as a result of the proposed development.*
9. *I acknowledge that in terms of the Protection of Personal Information Act (POPIA) all correspondence will be communicated directly and only to myself (the applicant). No information will be given to any third party and/or landowner (if the landowner is not the applicant). I herewith take responsibility to convey all correspondence to the relevant parties.*

Applicant's signature:		*Date:*	**12 November 2024**
Full name:	**Alexander Havenga**		
Professional capacity:	**Registered Professional Planner**		
SACPLAN Reg. Nr:	**Pr. Pln A/3313/2023**		

Annexure 2

POWER OF ATTORNEY

We, the undersigned,

Gerhard Adam Barnard and

Marian Lyn Barnard

In our capacity as the registered owners of Portion 19 of the Farm Buffels Drift No. 227, George, situated in the Municipality and division of George, Province of the Western Cape.

hereby nominate and appoint:

NEL & DE KOCK TOWN & REGIONAL PLANNERS

With power of substitution, to be our true and lawful Agent in our name, place and stead, to apply to the George Municipality for a **Consent Use for a quarry on Buffelsdrfit 227/19, George,** and we hereby ratify, allow and confirm, and promise and agree to ratify, allow and confirm all and whatsoever our said Agent shall lawfully do or cause to be done by virtue of these presents.

SIGNED at George on this 30/09/2024 in the presence of the under mentioned witnesses.

.....

(Gerhard Adam Barnard)

.....

(Marian Lyn Barnard)

AS WITNESSES:

1. .....

2. .....

Annexure 3

Relationship and Business Banking

1st Floor Absa Building
106 York Street
George 6529
South Africa

Tel : +27 44 803 3000
Swift Address : ABSA ZA JJ
http://www.absa.co.za

4 November 2024

Confidential

Confirmation of Bond Details

We hereby confirm that the bond in name of GERHARD ADAM BARNARD was paid off but not cancelled.

Account Name	GERHARD ADAM BARNARD
Registration Number	
Absa Account Number	8080132849
Account Type	Bond Account
Branch Name	Absa George
Branch Code	632005
Absa Swift Code	ABSAZAJJ
Business Address	BUFFELSDRIFT, SINKSABRUG 6535

- This report does not confirm the conduct of the account in any way.
- This information is to be treated in the strictest of confidence and may only be used in the context in which it is given.
- This report is a confirmation of the correctness of information supplied by the client dependent on the information contained by the bank's system at the time that the request is submitted to the bank.
- This report is given in confidence and on request of our client.

Absa Bank and/or its employees will not be held responsible for any loss, damage or liability, which may arise directly or indirectly from the provision of this letter of confirmation.

Yours sincerely

Jacques Fourie
Transactional Banker
Relationship Banking

2024/11/04
Relationship Banking
George
3640

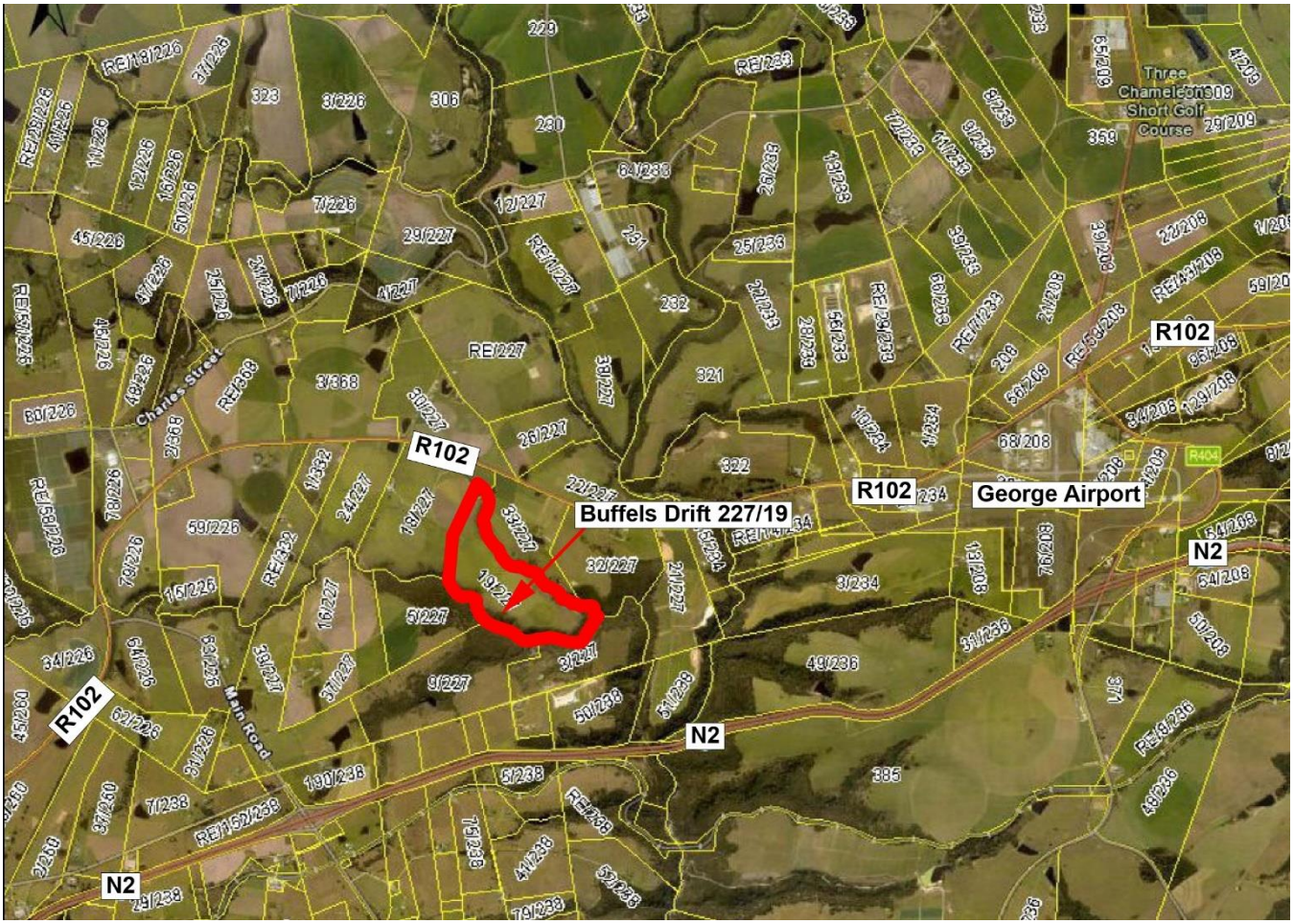
ANNEXURE 4

MOTIVATION REPORT

CONSENT USE FOR A QUARRY: PORTION 19 OF THE FARM BUFFELS DRIFT No. 227, SITUATED IN THE MUNICIPALITY AND DIVISION OF GEORGE, WESTERN CAPE

FOR

KIRSTEN EN TULLEKEN VERVOER CC



Stads- en Streekbeplanners
Town and Regional Planners

TABLE OF CONTENTS

1. APPLICATION

Application is being made for a consent use for the purpose of mining aggregate, stone and gravel on Portion 19 of the Farm Buffels Drift No. 227, George, in terms of Section 15.(2)(o) of the By-Law on Municipal Land Use Planning of George Municipality, 2023.

2. BACKGROUND

Kirsten & Tulleken, an established transport and building material supplier in George and the owner of the subject property came to an agreement to mine a portion of Farm Buffels Drift 227/19 for aggregate, stone and gravel. A mining permit application was submitted to the Department of Mineral Resources and Energy which issued a mining permit on 04/09/2024 for the mining activities and is attached to this application as Annexure 12.

3. PURPOSE

The purpose of this application is to obtain approval for a consent use for a quarry which will allow the owners to operate a quarry in accordance with George Municipality's Integrated Zoning Scheme By-Law, 2023.

4. MOTIVATION

4.1 NEED

The need for this application sprouted from Kirsten & Tulleken's function to provide their customers with aggregate stone and gravel which can be mined on the subject property. Therefore, the need for this application is to obtain the Municipality's approval for the supplementary use of a quarry on the subject property which will allow Kirsten & Tulleken to mine aggregate, sand and gravel and as a result thereof provide it to their customers. Considering the rapid growth of George and environs the availability of building material as now applied for has become a challenge. The extraction of the 'minerals' will bring lower costs of the product in the area as it is locally sourced and will contribute to the economy of George in various aspects. The quarry will result in a financial gain for the owner of the property, the mining company and the workers which will be employed by the quarry. By benefiting these beneficiaries will also be beneficial to the Municipal fiscus.

4.2 DESIRABILITY

PHYSICAL CONDITION:

4.2.1 TOPOGRAPHY

The subject property is situated on top of a crest of a hill and slopes downwards towards valley in a north eastern and south western direction. The topography of the property is at its highest point roughly 183m high while it slopes downwards from its highest point to an unnamed stream and the Brakkloof River roughly 116m high. The slope of the property is approximately 1:54 on its flattest part and 1:3,6 on its steepest part where it slopes down to the Brakkloof River. The area where the proposed mining activities will take place will be manipulated with machinery to extract the materials. Therefore, topography pose to not negatively affect the application.

4.2.2 BOTTOM CONDITIONS

The geology of the of the property is summarised as follows in the Basic Assessment Report by Stephen Davey of Klipberg Consulting (Pty) Ltd and is attached to this application as Annexure 13. “The property is underlain by the Maalgaten Granite. The saprolite consists of a deeply weathered friable granite with a sandy, clayey matrix that grades down into weathered granite of the George pluton. It is between 3 and 19m thick, and has been, or is currently exploited from 14 known sites. The gravel is used for road wearing course, subgrade and fill. In some cases, the underlying, slightly weathered granite has been exploited for stone aggregate.” The bottom conditions pose to not negatively affect this application as it is the content of the bottom conditions which gave rise to this application.

4.2.3 VEGETATION

The area where the quarry is proposed is currently cultivated lands associated with the agricultural activities. Therefore, no conservation worthy vegetation will be negatively impacted by the proposed quarry. The quarry will be rehabilitated after fruition of the mining activities and will be returned to its current state which will be utilised for agricultural activities. Therefore, approval of this application will not have an adverse impact on any natural vegetation.

4.2.4 FLOOD LINES

The proposed quarry is roughly 30m higher than the Brakkloof River. Debbie Fordham of Upstream Consulting compiled a specialist biodiversity compliance statement attached hereto as Annexure 14. According to this specialist report it is stated that if the mitigation measures and stormwater management as proposed are adhered to, these features will not be impacted by the proposed quarry. The mitigation measures include a runoff diversion channel and a Berm Interceptor. In

light thereof it is foreseen that flood lines will not negatively affect the proposed quarry.

4.2.5 SENSITIVITIES

As mentioned earlier in this report, the quarry is proposed on an area of the property currently cultivated. The location of the proposed quarry was identified as the best option due to the fact that it is not situated in an environmental sensitive area. According to the Agricultural Agro-Ecosystem Specialist Assessment by Johan Lanz the area where the quarry is proposed should be classified as very high agricultural sensitivity for the fact that the area is under centre pivot irrigation. The conclusion of the Specialist Report indicated that the proposed mining will not reduce the future agricultural production potential of the site, if effective rehabilitation is implemented. In addition to the above, Debbie Fordham compiled Terrestrial Biodiversity Compliance Statement and according to this report the proposed quarry will have a low impact on terrestrial biodiversity. The Terrestrial Biodiversity Compliance Statement is attached to this application as Annexure 18. Therefore, sensitivities which may be impacted by the proposed quarry can be brought back to life if effective rehabilitation measures are followed.

4.2.6 WATER TABLE

The water table poses to not be an issue with regard to the proposed application as no permanent construction is proposed which can be affected by a high water table. Therefore, since a quarry as a consent use is proposed, it will not be elaborated further on in this report.

4.2.7 DRAINAGE PATTERN

No new construction is proposed and therefore the design of the drainage pattern and how it will connect to the municipal storm water system is not applicable. It should however be mentioned that mitigation measures are proposed in the aquatic biodiversity compliance statement by Upstream Consulting which includes a runoff diversion channel and a berm interceptor. The runoff channel will protect work areas from upslope runoff or divert sediment laden water to an appropriate sediment retention structure. The berm interceptor will divert water to sediment control structures which will divert run-off from sensitive areas. A Stormwater Management Plan by M Charl Bester was compiled to manage stormwater and is attached to this application as Annexure 17. Therefore, this application will not be negatively affected by the drainage pattern should the proposed mitigation measures be implemented.

4.2.8 FILLINGS AND EXCAVATIONS

Application is made for a consent use for a quarry on the subject property. Therefore, excavations and fillings will be present as it is a standard method to mine aggregate, sand and gravel. The area will be rehabilitated in accordance with the rehabilitation plan attached to this application as Annexure 16.

4.3 EXISTING PLANNING AND LEGISLATION

4.3.1 SPATIAL PLANNING AND LAND USE MANEGEMENT ACT, 2013, (S.P.L.U.M.A.)

4.3.1.1 SPATIAL JUSTICE

- **Past spatial and other development imbalances must be redressed through improved access to and use of land.**
  The property which relates to this application is situated in the George rural area known as Sinksabrug. The property was made available on the free market when the owner acquired it in 1993 with his own capital he built this farm up to function as a viable agricultural unit. Therefore, this application pose to not be adequate to address this principle of access to and use of land as the owner acquired it on the free market with the intention of utilising it for agricultural activities.

- **Spatial development frameworks and policies at all spheres of government must address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements, former homeland areas and areas characterises by widespread poverty and deprivation.**
  Due to considerations discussed above, this objective is not readily achievable with this application.

- **Spatial Planning mechanisms, including land use schemes, must incorporate provisions that enable redress in access to land by disadvantaged communities and persons.**
  As discussed above, the location of the property in Sinksabrug does not lend itself to the compliance of this objective and the fact that the property is zoned and actively used for agricultural purposes and not to address the access to land by disadvantaged communities or persons.

- **Land use management systems must include all areas of a Municipality and specifically include provisions that are flexible and appropriate for the management of disadvantaged areas, informal settlements and former homeland areas.**
  A pragmatic approach to the management of land use systems to follow flexible and appropriate processes to facilitate housing for the disadvantaged community is indispensable.

- **Land development procedures must include provisions that accommodate access to secure tenure and the incremental upgrading of informal areas.**
  This aspect has already been discussed above.

- **A Municipal Planning Tribunal considering an application before it, may not be implemented or restricted in the exercise of its discretion solely on the ground that the value of land or property is affected by the outcome of the application.**
  This provision does not apply to the application.

4.3.1.2 PRICIPLE OF SPATIAL SUSTAINABILITY

- **Promote land development that is within the fiscal, institutional and administrative means of the Republic.**
  The proposed development is done with private funding and therefore the fiscal, institutional and administrative capacity of government agencies are not relevant to this application.

- **Ensure that special consideration is given to the protection of prime and unique agricultural land.**
  The property forming the focus of this application is zoned Agricultural Zone I and is currently under centre pivot irrigation for crops. The proposed quarry is situated on a portion of the property currently cultivated for crops. The extraction of the aforementioned is temporary while this consent use will only be valid for the period the mining permit is issued. Therefore, after fruition of the mining activities, the area will be rehabilitated and once again be utilised for agricultural activities.

- **Uphold consistency of land use measures in accordance with the environmental management instruments.**
  An Environmental Authorisation for the proposed quarry was issued on 31/07/2024. Therefore, the consistency of land use was taken into consideration with environmental management instruments before the issue of the relevant Environmental Authorisation.

- **Consider all current and future costs to all parties for the provision of infrastructure and social services in land developments.**
  Approval of this application will not incur any costs with regard to the provision of services as the proposed quarry does not require any new services. Any new infrastructure which may be required will be for the cost of the company managing the mine. Therefore, approval of this application pose to not hold any costs for the Municipality.

- **Promote land development in locations that are sustainable and limit urban sprawl.**
  The nature of this application does not lend itself to be accommodated within the urban edge. Therefore, this principle aimed at limiting urban sprawl is not relevant to this application.

- **Result in communities that are viable.**
  Approval of this application will result in a viable quarry which will produce aggregate, sand and gravel to the community for the period the mining permit is issued. Therefore, approval of this application will contribute to the viability of the community as the proposed quarry will create jobs and supply the development sector with materials required for construction. After fruition of the quarry and the lapsing of the mining permit, the quarry will be rehabilitated and the area will revert back to its current state which is for agricultural activities.

4.3.1.3 PRINCIPLE OF EFFICIENCY

- **Land development optimises the use of existing resources and infrastructure.**
  The intend of this application is obtain approval for a quarry which will extract natural resources i.e. aggregate, sand and gravel and make it available for the building and construction industry in the area. The proposed quarry poses to utilise existing resources and infrastructure for the duration of the mining activity. Therefore, this application poses to be in line with this principle.

- **Decision-making procedures are designed to minimise negative financial, social, economic, or environmental impacts.**
  As a privately funded project, sensible decision making to have minimal negative consequences are indispensable for the successful implementation of the project. As already discussed, it will not have a negative social or economic and impact, but will result in a viable opportunity for the business to extract the ‘minerals’ for their customers.

- **Development applications procedures are efficient and streamlined and timeframes are adhered to by all parties.**
  Adherence to prescribed timeframes vest in the Municipality and therefore the applicant does not have any control over it.

4.3.1.4 PRINCIPLE OF SPATIAL RESILIENCE

This principle, which is primarily aimed at a sustainable way of life for communities that are most vulnerable to economic and environmental setbacks, is not directly applicable to this application.

4.3.1.5 PRINCIPLE OF GOOD ADMINISTRATION

- **All spheres of government ensure an integrated approach to land use and land development that is guided by the spatial planning and land use management systems as embodied in this Act.**
  Authorities involved in this application includes George Municipality, Department of Agriculture, Department of Environmental Affairs and Development Planning, Department of Public Works and the Department of Mineral Resources and Energy. The various departments of the authorities involved function as an integrated team and the applicant has no further comment on this principle of good administration.

- **Policies, legislation and procedures must be clearly set in order to inform and empower members of the public.**
  Procedures of the public participation process for this application will be adhered to as prescribed when the applicant receives a Section 38 Land Use Planning By-Law, 2023, compliance letter and is instructed to start with this process.

4.3.2 LAND USE PLANNING ACT, 2014, (L.U.P.A.)

As far as the proposed development is concerned, there is a great deal of overlap between the principles of spatial justice, sustainability, good administration and resilience that are pursued under this legislation, but which have already been discussed in par 4.3.1 above. To avoid duplication, these principles will not be discussed again.

4.3.3 NATIONAL, PROVINCIAL AND LOCAL GOVERNMENT POLICIES AND GEORGE MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK, 2023

National, Provincial and Local Government policies sets out and put in place coherent policies and frameworks to support Municipalities fulfil their municipal planning mandate in line with national and provincial agendas. Application is made in terms of Section 15 of the Land Use Planning By–Law of George Municipality, 2023. Therefore, the local policies and frameworks of the Municipality took the policies and frameworks of National and Provincial Government into consideration and only the George Municipal Spatial Development Framework, 2023 (MSDF) will be discussed for the purpose of this application.

George Municipality's Spatial Development Framework, 2023, lists mining and quarrying(supported) in Policy B2 which relates to the Primary Sector in the Economic Growth chapter of the document. The policy focusses on forestry areas which should be maintained as an economic sector. Bearing in mind that the proposed quarry is situated in the rural area of Sinksabrug and not within a

proclaimed forestry area it will therefore not detract from this policy and the applicant cannot comment on the policy guidelines as a result thereof.

4.3.4 Western Cape Land Use Planning Guidelines for rural areas, 2019

Chapter 13 of the Western Cape Land Use Planning Guidelines focusses on mining and industry in rural areas. The objectives of this guideline are as follows:

- "To facilitate the development of industrial activity that underpins the rural economy, conservation and tourism.
- Appropriate industrial activity in rural areas includes:
    - Packing, storage and bottling or processing of agricultural products.
    - Small scale production or processing activities associated with tourist facilities.
    - Extracting minerals e.g. salt mining.
    - Processing natural resources e.g. bottling of spring water."

This application proposes the development of an industrial activity in the form of a quarry which will support the economy in the rural area of George. Approval of this application will raise funds not only for the owner of the property, who can invest the extra income back into agricultural activities, but also for the owners of the mine which in turn employs various individuals who will be reimbursed by working on the mine. Therefore, this application is in line with this objective which will contribute and support the rural economy in George.

The Western Cape Land Use Planning Guidelines for rural areas, 2019, gives the following guidance for implementation of mining and industries in rural areas:

- **"Industry in rural areas should only be located in the following SPC'S:**
  Settlement
  Agriculture
  Buffer 2"
    - A portion of property abutting the Brakkloof River is classified as Critical Biodiversity Area 2 which is provided for in a Core 2 Spatial Planning Category. The remainder of the property is not classified as biodiversity areas. In light thereof, the applicant interpreted that it falls under 'Agriculture' SPC and therefore this application is in line with this guideline.

- **"All non-place-bound industry (industries not ancillary to agriculture or serving rural needs e.g. transport contractors, breweries, fabricating pallets, bottling & canning plants, abattoirs, sawmills and builder's yards) should be located within urban areas. The obligation is on the applicant to illustrate why the industry must be located in the rural area rather than in an industrial area of a town."**
    - This application intends to obtain approval for a quarry on the subject property which is place bound due to the availability of aggregate, sand

and gravel in the specific area the quarry is proposed. Therefore, since no industry is proposed with this application, no further elaboration will be made on this guideline.

- **"Industries associated with tourist facilities in the rural areas such as a small scale brewery, butchery or arts and craft factory can be accommodated, depending on local conditions."**
    - This guideline is not applicable to this application as the proposed quarry is not associated with tourist facilities. The mining of raw materials on this farm will, however, be used for the construction of roads and facilities related to tourist amenities in close proximity thereof.

- **"Only activities that are appropriate in a rural context, generate positive socio-economic returns, and do not compromise the environment or ability of the municipality to deliver on its mandate should be accommodated. The long term impact on the municipality (resources and financial); agricultural activities, production and sustainability, risk and finances; and the scenic, heritage and cultural landscape should be considered when decisions are taken."**
    - This guideline is applicable to the Municipality as the decision making authority. It should, however, be mentioned that a quarry is normally associated in a rural context, it will generate positive socio economic returns and will not compromise the environment as the area where the quarry is proposed is not environmentally sensitive.

- **"Extractive industry (i.e. quarrying and mining) and secondary beneficiation (e.g. cement block production, concrete batch plants, pre-mix asphalt plants) have to take place at the mineral or material source. If the mine will result in a significant negative impact on biodiversity, a biodiversity offset must be considered in accordance with National policy and Provincial guidelines."**
    - The minerals (aggregate, sand and gravel) will be excavated and loaded onto trucks that will transport the material. Therefore, this proposal does not provide for secondary beneficiation.

- **"All place-bound agricultural industry related to the processing of locally sourced (i.e. from own and/or surrounding farms) products due to the perishability thereof, should be located within the farmstead precinct in the agricultural area."**
    - The minerals proposed to be extracted in the quarry are not perishable and therefore no further elaboration will be made on this guideline.

- **"Industry in rural areas should not adversely affect the agricultural potential of the property."**

- Indicated on the attached Site Development Plan, Annexure 7, the extent of the proposed quarry pose to not adversely affect the agricultural potential of the property due to its limited size. It should, however, be mentioned that after fruition of the mining activities the quarry will be rehabilitated and crops will be planted. Therefore, it will revert back to agriculture after the completion of the mining activities.

- **"Agricultural industry should be subservient or related to the dominant agricultural use of the property and/or surrounding farms."**
  - The proposed quarry is subservient to the dominant agriculture practices on the subject property as the quarry will be approximately 4.9775ha in size leaving roughly 50ha for agricultural purposes. It should, however, also be mentioned that the owner of the subject property also owns other agricultural land units in the area. Therefore, the granting of rights for the proposed quarry will not have a detrimental impact on the agricultural viability of his agricultural activities.

- **"The employees of an agricultural industry as provided for in Chapter 10.2 Agri Worker Housing can be accommodated on the farm in a sustainable manner, that does not compromise the functionality and integrity of farming landscapes."**
  - This application does not propose a housing component. Therefore, this guideline is not relevant to this application.

- **"Avoid establishing industries with any permanent on-site employees' residential component in rural areas as on the farm accommodation is restricted to agri workers. Employees should be accommodated in existing settlements."**
  - As stated above this application does not propose a housing component for workers which will therefore not establish permanent on-site employees.

- **"Structures accommodating industry should conform to local vernacular, and attention needs to be given to appropriate buffers, and landscaping and screening to reduce their visual impact on the rural landscape. Information on the architectural design must be provided, for the purposes of heritage and visual assessments."**
  - As indicated on Annexure 7, Site Development Plan, the quarry does not propose any structures. Therefore, no further elaboration will be made on this guideline.

- **"Development applications should include a locality plan to indicate how it contributes to the clustering of nodal areas."**
  - A locality plan is attached to this application as Annexure 6. The availability of the minerals proposed to be extracted is the reason for

the location of the quarry. Therefore, it cannot contribute to the clustering of nodal areas as it is site bound.

- **"A site development plan must be submitted to the municipality for consideration. The exact proposed footprint must be shown on the site development plan, it should illustrate the placement of the industry in relation to existing buildings on the property, and provide details on infrastructure provision, engineering services, access and parking arrangements and the position and nature of all proposed signage and landscaping."**
    - A Site Development Plan is attached as Annexure 7. The extent of the proposed quarry is 4.99775ha and does not require any infrastructure provision with regard to engineering services as all of the equipment will be dependent on its own power. Site access is indicated on the Site Development Plan.

- **"The subdivision of agricultural land to accommodate industrial activities should be discouraged and only used as a last resort so as not to fragment the agricultural landscape."**
    - This application does not propose the subdivision of agricultural land. Therefore, no further elaboration will be made in this regard.

- **"Before subdivision is considered, all other options to fund and provide security for loans' and financing, e.g. long term lease agreements, shareholding in the land holding entity or title deed restrictions should be investigated before subdivision is granted."**
    - As stated above, this application does not propose the subdivision of agricultural land. Therefore, no further elaboration will be made in this regard.

- **"Conditions should be imposed to effectively manage waste and effluent."**
    - This guideline is aimed at the Municipality and the quarry will conform to any conditions relating to waste management and effluent which may be imposed by the Municipality.

4.3.4 BY-LAW ON MUNICIPAL LAND USE PLANNING OF GEORGE MUNICIPALITY, 2023

4.3.4.1 According to Section 38(1), the following documents are required in support of the application:

4.3.4.1.1 **Annexure 1**, Application form fully completed and signed;

4.3.4.1.2 **Annexure 2**, Power of Attorney to Nel & de Kock Town and Regional Planners by the registered owner to prepare and submit this application;

4.3.4.1.3 **Annexure 3**, Letter by Bondholder is attached to this application;

4.3.4.1.4 **Annexure 4**, Motivation Report by Nel & de Kock Town and Regional Planners;

4.3.4.1.5 **Annexure 5**, Copy of the Surveyor General Plan No. 716/53 is attached to this application;

4.3.4.1.6 **Annexure 6,** Plan No. G/I/214-1 is attached to this application;

4.3.4.1.7 **Annexure 7,** Site Development Plan is attached to this application;

4.3.4.1.8 **Annexure 8,** Proof of Payment will be provided in due course as it is made available to the applicant;

4.3.4.1.9 **Annexure 9,** Copy of Title Deed No. T28967/93 is attached to this application;

4.3.4.1.10 **Annexure 10**, Conveyancer certificate by Herman Josias Swanepoel is attached to this application;

4.3.4.1.11 **Annexure 11**, Environmental Authorisation dd. 31/07/2024 is attached to this application;

4.3.4.1.12 **Annexure 12**, Mining Permit dd. 04/09/2024 is attached to this application;

4.3.4.1.13 **Annexure 13,** Basic Assessment Report by Stephen Davey of Klipberg Consulting is attached to this application;

4.3.4.1.14 **Annexure 14,** Aquatic Biodiversity Compliance Statement by Debbie Fordham is attached to this application;

4.3.4.1.15 **Annexure 15,** Rehabilitation Plan is attached to this application;

4.3.4.1.16 **Annexure 16,** Agricultural Assessment by Johan Lanz is attached to this application;

4.3.4.1.17 **Annexure 17,** Stormwater Management Plan by M Charl Bester is attached to this application;

4.3.4.1.18 **Annexure 18,** Terrestrial Biodiversity Compliance Statement is attached to this application; and

4.3.4.1.19 **Annexure 19,** Copy of Pre-Application dd. 24/10/2024:
The following comments were received as part of the Pre-Application:

- **Access to the site to be indicated and confirmed.**
    - Access to the proposes quarry is obtained from the R102 via an existing road traversing Buffels Drift 227/18 which is owned by the same owner as the property applicable to this application. The access is indicated on the SDP.

- **Need to confirm and indicate if any structures will be erected (to show location, extent, and internal layout).**
    - This application does not propose any new structures.

- **Need to address compliance with MSDF 2023, SPLUMA, Zoning Scheme etc.**
    - Compliance with the various legislation is discussed extensively in Par. 4.3 of this report.

- **Site layout plan must contain topographical features and landscape measures in terms of the proposed mining activity.**
    - The submitted SDP indicates the topographical features and landscape measures of the proposed quarry.

- **All environmental elements and buffers must be indicated on the Site Layout Plan. To consider all watercourses and wetlands.**
    - According to the Terrestrial Biodiversity Compliance Statement, the area where the quarry is proposed is deemed to be regard as a low Terrestrial Biodiversity. The location of the quarry is furthermore on a ridge well above the Brakkloof River to the south and a tributary river to the north. Authorisation will be obtained in terms of the National Water Act, 1998 (Act 36 of 1998) as the quarry is situated within 100 metres of a river. The aquatic biodiversity compliance statement does however indicate that no aquatic features will be directly impacted by the project. Therefore, it is not essential to indicate the above environmental buffers on the SDP.

- **ROD/ Environmental authorisations as well as EMP to be submitted with the application.**
    - The Environmental Authorisation and Mining Permit is attached to this application as Annexures 11 and 12 respectively.

- **Notification will have to be send to, inter alia, Western Cape Agriculture, DEA&DP, DRE, ACSA during PPP.**
    - The prescribed Public Participation Process will be adhered to once the applicant is instructed to start with this process.

- **The developer may need to require comment from ACSA.**
    - The application will be referred to ACSA should it be a requirement as part of the Public Participation Process.

- **Access: DRE, as road authority, to provide comments.**
    - As mentioned above, the application will be referred to the Department of Roads once the applicant is instructed to begin with the Public Participation Process.

- **Water & Sanitation: Currently the Municipality are not available within this area, and the developer will be required to supply the required services. Should municipal services be extended to this area, the developer will be required, at his cost, to connect to the applicable services, and in addition be required to pay DC's, applicable on the time of connect.**
    - Noted.

- **Stormwater: Developer to adhere to the stormwater by-law.**
    - A Stormwater Management Plan was compiled by M Charl Bester and is attached to this application.

- **Environmental: Developer to obtain the necessary license and/or approval.**
    - An Environmental Authorisation and mining permit has been issued for the proposed quarry and is attached to this application as Annexures 11 and 12.

4.3.4.3 Proposed development parameters (George Integrated Zoning Scheme By-Law, 2023)
Quarry:
4.3.4.3.1 Development parameters applicable to "agriculture' together with additional parameters determined by the Municipality apply:
The focus of this application, a quarry, does not propose any permanent structures which can be evaluated in accordance with the development parameters of the Zoning Scheme. Therefore, the applicant cannot give comment in this regard. The Site Development Plan of the proposed quarry is attached to this application as Annexure 7.

4.3.4.3.2 If a quarry is approved as a consent use in Agricultural Zone I, the consent may only be granted for the number of years equal to the expected lifetime of the quarry concerned:
The mining permit of the proposed quarry is attached to this application as Annexure 12. The aforementioned permit was granted for a period ending 3 September 2026. It should, however, be mentioned that the mining permit may be renewed three periods not exceeding one-year. Therefore, it is proposed that this consent use approval be valid until 3 September 2029 to make provision for any renewals of the mining permit.

4.3.4.3.3 The owner must comply with national and provincial statutory requirements applicable to mining:

The owner of the quarry will abide to the statutory requirements of government as required by this development parameter.

4.3.4.3.4 A Site Development Plan must be submitted to the Municipality for its approval:

A Site Development Plan of the proposed quarry is attached to this application as Annexure 7 which therefore complies with this development parameter.

4.3.5 TITLE DEED

Herman Swanepoel of KLS attorneys compiled a conveyancer certificate which is attached to this application as Annexure 10. In the aforementioned certificate it is stated that the title deed of the property, i.e., Title Deed No. T28967/1993, does not contain any conditions prohibiting this application for a consent use for a quarry on the subject property. The Conveyancer Certificate furthermore list bonds registered on the property. Attached as Annexure 3, is confirmation from the bondholder that the bond was payed off.

4.4 CHARACTER OF THE ENVIRONMENT

The property relevant to this application is situated within the rural area of Sinksabrug where the predominant land use is agriculture which focusses on grazing of cattle/sheep and rotational crops. This application for a consent use for a quarry is temporary as the application will only be valid for the period the mining permit was issued. Quarrying is normally associated within rural areas as it cannot take place within the urban edge of a town. After fruition of the mining activities, the quarry will be rehabilitated and will again be cultivated for agricultural purposes. Therefore, the proposed application for a quarry pose to not detract from the character of the environment on a permanent basis.

4.5 POTENTIAL OF THE PROPERTY

4.5.1 AGRICULTURE

An Agricultural Agro-Ecosystem Specialist Assessment was compiled by Johann Lanz and is attached to this application as Annexure 16. According to Lanz the proposed mining will not reduce the future agricultural production potential of the site, if effective rehabilitation is implemented. It will furthermore not impact on agricultural employment. The proposed mine was therefore found to be acceptable and is from an agricultural impact point of view, supported.

4.5.2 CONSERVATION

As stated earlier in this report, the proposed quarry is proposed on this specific location on the property due thereto that it is not an environmental sensitive area. Therefore, this application poses to not negatively affect any conservation worthy vegetation.

4.5.3 MINING

Aggregate, sand and gravel can be found on the property which is the motive for this application. Therefore, approval of this application will allow the owners to legally operate a quarry from the property. A mining permit was issued on 04/09/2024 by the Department of Mineral Resources and Energy for the proposed mining activities.

4.5.4 RECREATION

As mentioned throughout this report the subject property is zoned for agricultural purposes. The property does not offer recreational activities for the public, but may hold some recreational privileges for the owner. Therefore, since this property is in private ownership and application is made for a quarry it is not reasonably profound to prose any recreational facilities. In light of the aforementioned no further elaboration will be made with regard to recreation.

4.5.5 RESIDENTIAL

The subject property is zoned for agricultural purposes and does currently have any residential units, but the owner is allowed by George Municipality's Integrated Zoning Scheme to construct a dwelling house on the property, should the need or desire persist. This application for a quarry does not propose any residential opportunities and since the primary use of the property is for agriculture no further elaboration will be made in this regard.

4.6 LOCATION AND ACCESSIBILITY

The subject property is situated at 34°00'48.60"S 22°20'12.61"E within the rural area of Sinksabrug outside George. The property is accessed from R102 via an existing road traversing Buffels Drift 227/18 which is another property of the registered owner. This application does not propose the amendment of the access and the existing access will remain in place as is.

4.7 PROVISION OF SERVICES

The subject property currently receives electricity directly from Eskom and water used for irrigation purposes is gathered rainwater. Approval of this application will not require any additional services from the Municipality as the quarry do not require any services. In light of the aforementioned no further elaboration will be made in this regard.

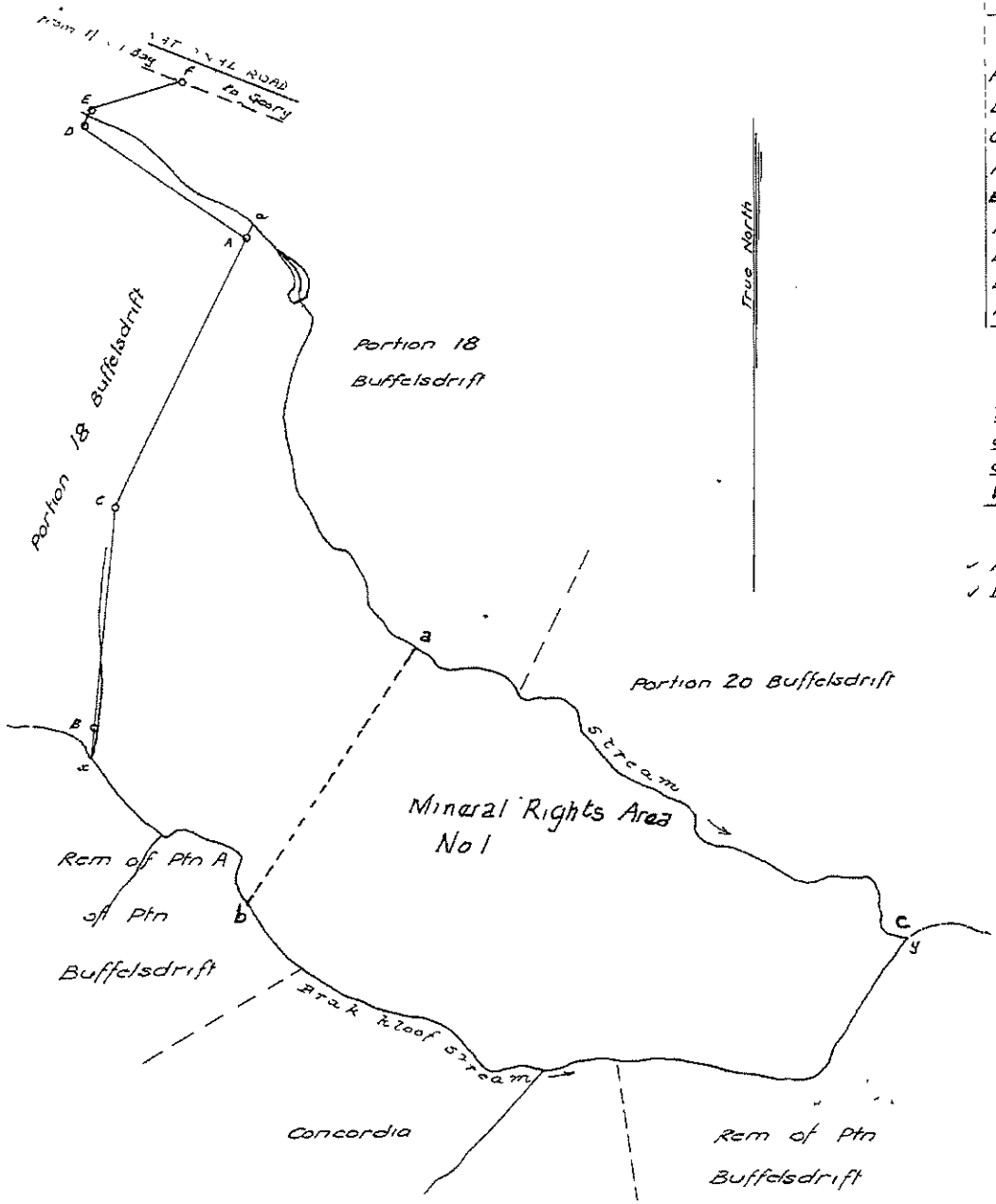
4.8 CONSTRUCTION PHASE

This application does not propose any construction and therefore no elaboration will be made with regard to a construction phase.

5. CONCLUSION

The influx of people to the Garden Route through recent years led to and increased demand for aggregate, sand and gravel which is materials commonly associated with construction. Therefore, approval of this application will contribute to serve the demands for construction materials in the Garden Route, while also contributing to the economy in various forms. The contribution to the economy includes, but is not limited to the following, financial gain for the owner of the farm, financial gain for the mining company, financial gain for the workers of the quarry, financial gain for construction companies requiring the materials, financial gain for the Municipality in the form of additional rates and taxes of new construction, etc. On the strength of the rationalisation followed in this report, it is evident that approval of this application has a substantial benefit not only for the owners of the mine and the owners of the property, but also to the Greater George as it will allow the mining of aggregate, sand and gravel which can be supplied to local customers at more affordable rates which can lead to a well-balanced economy.

Nel & de Kock Town and Regional Planners **November 2024**
Per: Alexander Havenga Pr. Pln A/3313/2023



SIDES Cape Feet		ANGLES OF DIRECTION		SYSTEM Ls23° CO-ORDINATES y C ft	x
		Constant		+100000	+11900000
AB	2307 0	17 4 20	A	+96482 2	+54863 8
BC	994 4	185 7 30	B	+97159 5	+57069
CA	1350 0	205 50 40	C	+97070 7	+56078 7
Aa		205 50 40			
Bx		5 7 30			
AD	876 5	125 23 10	D	+97196 8	+54356 2
DE	81 9	199 31 20	E	+97169 4	+54279 0
EF	420 3	253 5 40	F	+96767 3	+54156 8
FA	762 4	338 2 20			

No 716/53

Annexure 5

Approved

Surveyor-General

21-4-1953

Servitude

The brown line F E D represents the S E boundary and the brown line D A represents the N boundary of a servitude road 25 C ft wide over Portion 18 (remainder) vide diagram No 715/53

Beacons

A B, C 3' x 6" x 7" concrete beacons proj 6"

D E F 3½' x 1" x ¾" iron pegs

on 19 ( )

~~a portion of Portion~~ -) of e and

Buffelsdrift - No 227

George

Scale 1 7500

The figure a middle of stream y middle of Brak Kloof Stream x Ca.

represents 64 4211 Morgen of land being

PORTION 19 of the farm BUFFELSDRIFT

situate in the Division of George Province of Cape of Good Hope.

Surveyed in Nov 1952 by ~~me~~ us

H S Norton Land Surveyors

This diagram is annexed to D/T 14985/53

The original diagram is No 260/1816 annexed to

File No. 8339

S R. No. E 173/53

AL-158

GOOSEN, CLOUGH & LOUW
LANDMETERS — GEORGE

KAART VIR MINERALEREGTE

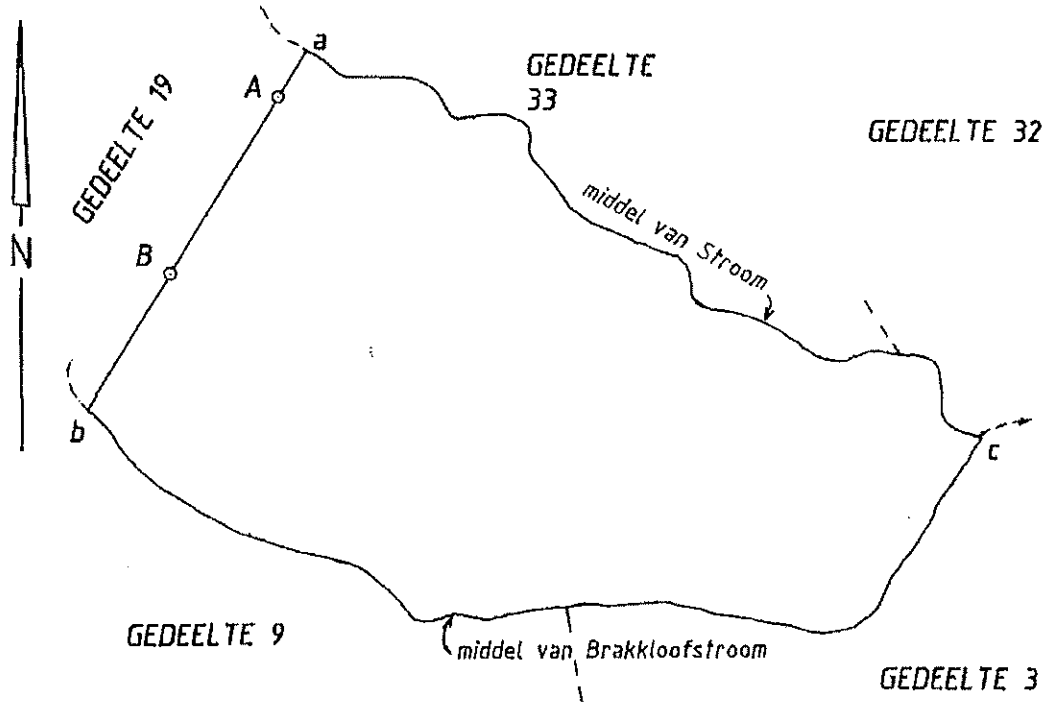
KANTOORAFSKRIF

	SYE Meter	RIGTINGS -HOEKE		KOÖRDINATE Alles plus Y	Stelsel Lo 23° X
		Konstante		0,00	3 700 000,00
AB	213,32	31 18 10	A	61 654,33	64 685,53
			B	61 765,17	64 867,79
		△ Geo 14		59 587,50	64 350,29
		△ Geo 21		65 027,38	63 266,22

L.G.Nr.
7381-87RM
Goedgekeur
Landmeter-generaal
87/11/19

Bakenbeskrywing

A,B 20 mm ysterpen



Skaal: 1 : 7 500

Die figuur a middel van Stroom c middel van Brakkloofstroom b

stel voor 32,1462 hektaar grond, synde
'n Steengroefmyn-gebied, op Gedeelte 19 van die Plaas Buffels Drift No. 227

geleë in die

Administratiewe Distrik George Provinsie Kaap die Goeie Hoop

Opgemeet in September – Oktober 1987 deur my,
~~deur my~~, Vervaardig vir die doel om saaklike reg van steengroefbewerking te registreer (klip en sand)

A.LOUW Landmeter

Hierdie kaart is geheg aan	Die oorspronklike kaart is	Léer Nr. Geor. 227
Nr. K.544/1988 RM gedateer	Nr. 716/1953 geheg aan	M.S. Nr. E 2338/87
t.g.v.	Transport/~~Grondbrief~~	Komp. AL-1BAB (3584)
Registrateur van Aktes	Nr. 1953.300.14985	

DRUKKOR - GEORGE

7381/87 RM

~~E222~~ E2338/87	RM 738 1/87	The figure a b c Represents mineral area no 1. sand & Klip	K. 59 1/88 RM.	

Annexure 6

Locality Map: 1: 50 000

Site Development Plan: (true to scale)

Mining Layout Plan: Located on Portion 19 of Buffels Drift 227 (George RD)

Date: November 2023
Aerial image:
GoogleEarth (14/05/2022)
Boundary information:
SA Surveyor General
www.BoundaryHunter.co.za
Ryk Taljaard (PGP1440)

Coordinate system/s:
Y & X - WG23 (m)
Lat & Long - WGS84 Decimal Degrees

ID	Y	X	Latitude	Longitude
A	61381.25	3765203.52	-34.012107	22.335503
B	61221.48	3765304.22	-34.013024	22.337225
C	61119.50	3765354.28	-34.013482	22.338326
D	61104.42	3765383.34	-34.013744	22.338487
E	61155.24	3765462.53	-34.014455	22.337931
F	61308.30	3765417.60	-34.014041	22.336277
G	61388.89	3765420.62	-34.014064	22.335405
H	61472.42	3765377.47	-34.013670	22.334503

Scale 1 : 2,150 @ A4

PROPOSED CONSENT USE IN TERMS OF SECTION 15 OF THE BY-LAW ON MUNICIPAL LAND USE PLANNING OF GEORGE MUNICIPALITY, 2023, FOR PORTION 19 OF THE FARM BUFFELS DRIFT No. 227, GEORGE:

Application is being made for a consent use for a quarry in terms of Section 15.(2)(o) of the By-Law on Municipal Land Use Planning of George Municipality, 2023, in order to mine aggregate, sand and gravel from Portion 19 of the Farm Buffels Drift No. 227, George.

Remarks:

1. A Mining Permit was issued by the Department of Mineral Resources & Energy on 04/09/2024 which permits the mining of aggregate, stone and gravel from a portion of the subject property.
2. An Environmental Authorisation was issued on 31/07/2024 for the proposed mining activities.
3. Site Development Plan is attached hereto.
4. The subject property is accessed from R102 via an existing access traversing over Buffels Drift 227/18.

Note:
Locality Map obtained from CapeFarmMapper.

PORTION 19 OF THE FARM BUFFELS DRIFT No. 227 GEORGE

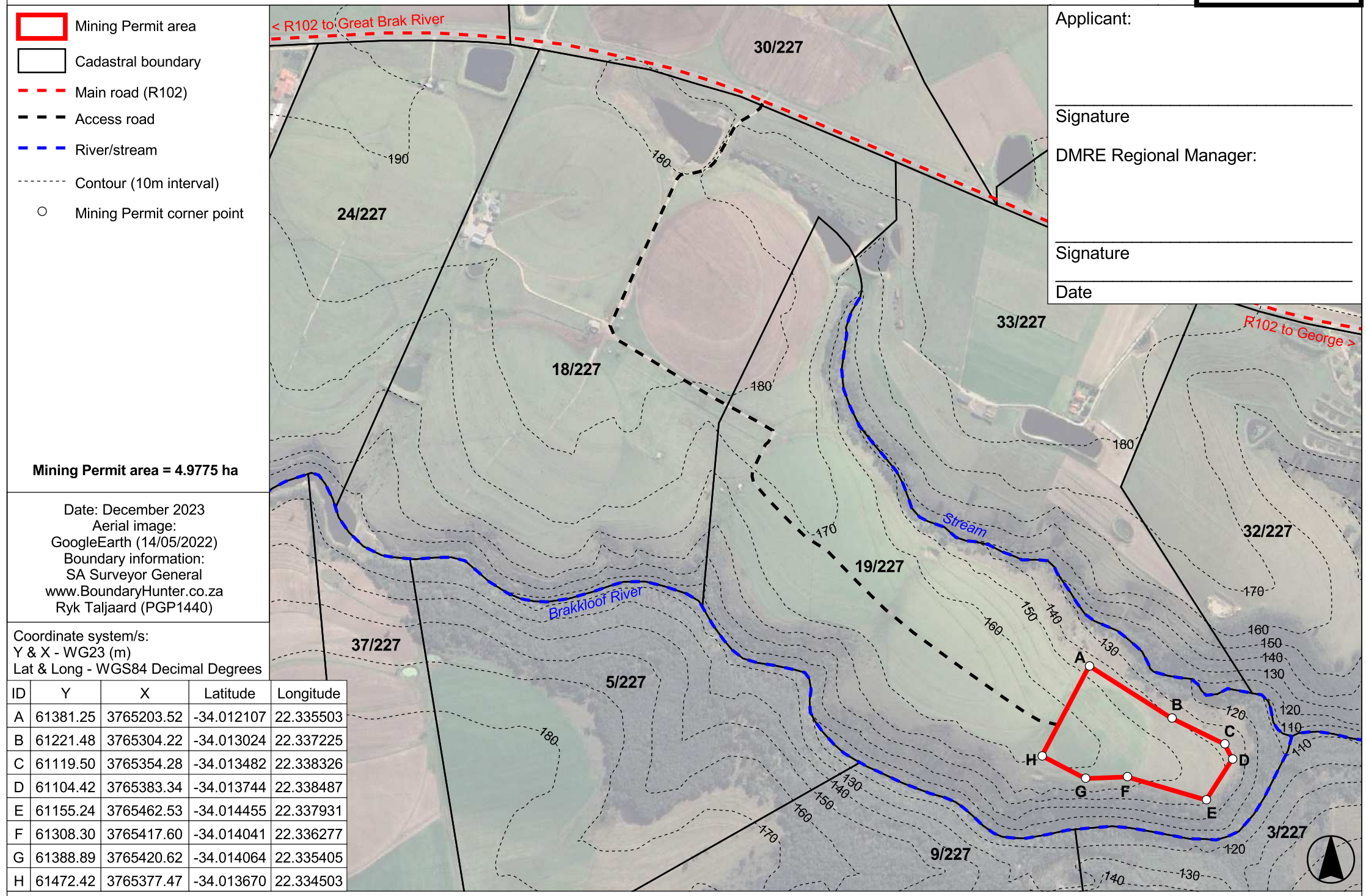
Nel & de Kock
Stads - en Streekbeplanners
Town and Regional Planners

Yorkstraat 56 York Street
Posbus 1186 / P.O. Box 1186
George 6530
Tel: (044) 874 5207
Fax: (044) 873 6354
E-pos / E-mail:neldek@mweb.co.za

SKAAL	1:50 000(A3)	SCALE	
BEPLAN PLANNED	D.N.	PLAN NO	G/I/214-1
GETEKEN DRAWN	A.H.		
DATUM DATE	November 2024		

Regulation 2.(2) Plan: Located on Portion 19 of Buffels Drift 227 (George RD)

Annexure 7



Applicant:

_____

Signature

DMRE Regional Manager:

_____

Signature

_____

Date

Mining Permit area = 4.9775 ha

Date: December 2023
Aerial image:
GoogleEarth (14/05/2022)
Boundary information:
SA Surveyor General
www.BoundaryHunter.co.za
Ryk Taljaard (PGP1440)

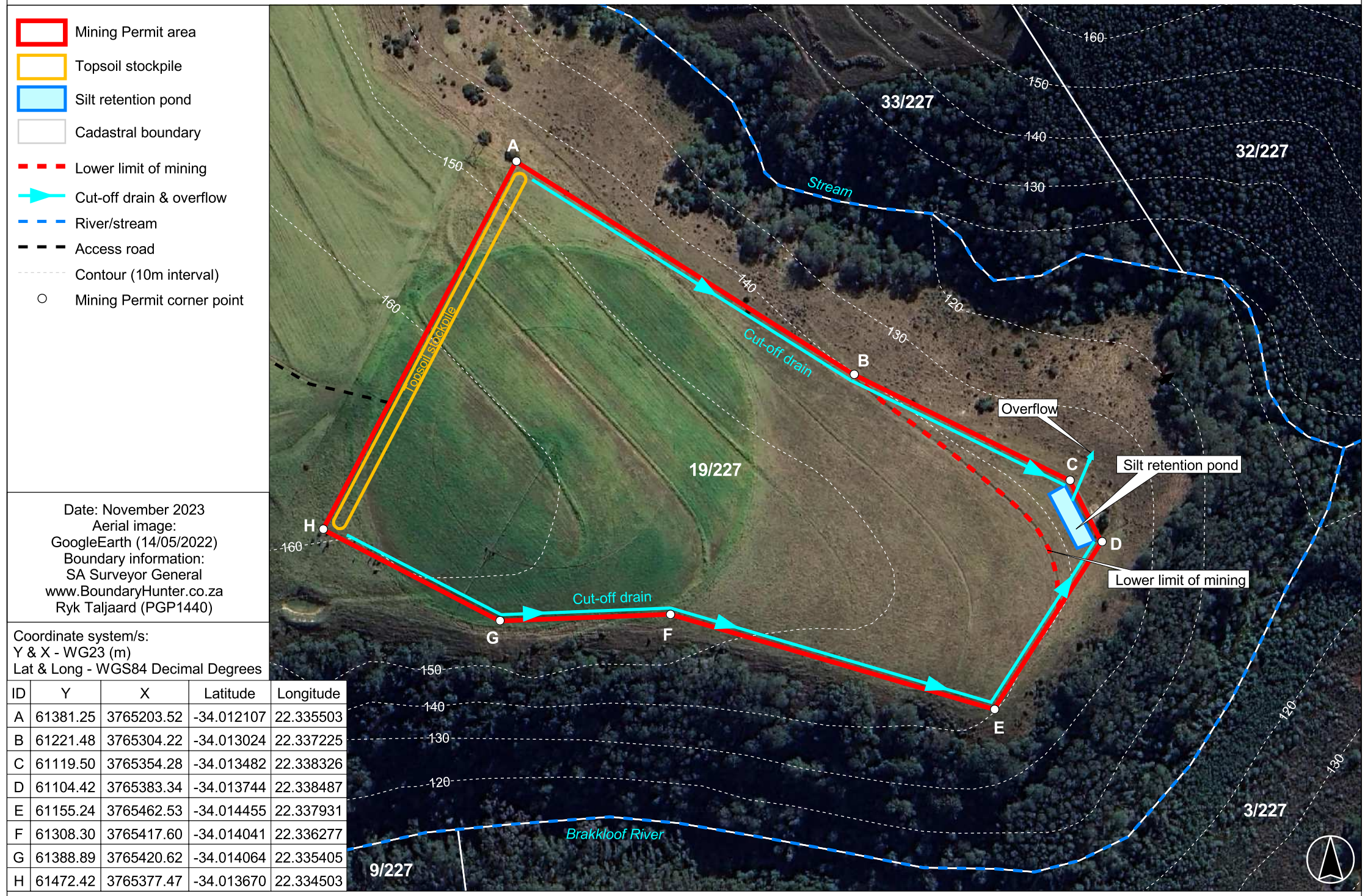
Coordinate system/s:
Y & X - WG23 (m)
Lat & Long - WGS84 Decimal Degrees

ID	Y	X	Latitude	Longitude
A	61381.25	3765203.52	-34.012107	22.335503
B	61221.48	3765304.22	-34.013024	22.337225
C	61119.50	3765354.28	-34.013482	22.338326
D	61104.42	3765383.34	-34.013744	22.338487
E	61155.24	3765462.53	-34.014455	22.337931
F	61308.30	3765417.60	-34.014041	22.336277
G	61388.89	3765420.62	-34.014064	22.335405
H	61472.42	3765377.47	-34.013670	22.334503

Scale 1 : 8,800 @ A4

100 0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 Meters

Mining Layout Plan: Located on Portion 19 of Buffels Drift 227 (George RD)



Date: November 2023
Aerial image:
GoogleEarth (14/05/2022)
Boundary information:
SA Surveyor General
www.BoundaryHunter.co.za
Ryk Taljaard (PGP1440)

Coordinate system/s:
Y & X - WG23 (m)
Lat & Long - WGS84 Decimal Degrees

ID	Y	X	Latitude	Longitude
A	61381.25	3765203.52	-34.012107	22.335503
B	61221.48	3765304.22	-34.013024	22.337225
C	61119.50	3765354.28	-34.013482	22.338326
D	61104.42	3765383.34	-34.013744	22.338487
E	61155.24	3765462.53	-34.014455	22.337931
F	61308.30	3765417.60	-34.014041	22.336277
G	61388.89	3765420.62	-34.014064	22.335405
H	61472.42	3765377.47	-34.013670	22.334503

Scale 1 : 2,150 @ A4

50 0 50 100 150 200 250 300 350 400 450 Meters

Standard Bank
3 Simmonds Street, Johannesburg, 2001
P.O. Box 61344, Marshalltown, 2107
Tel. +27 (0) 860 123 007
Fax: +27 (011) 636 4156
Website: www.businessonline.standardbank.co.za

To: GEORGE MUNISIPALITEIT

Date: 24-11-26

Subject: **Business Online PayAlert**

An electronic payment has been initiated by KIRSTEN to your bank account, details below:

Bank:	FIRSTRAND BANK
Branch:	COMM ACCOUNT SERVICES CUST
Account Number:	62869623150
Reference:	3744062
Amount:	10,465.00

Payments to Standard Bank accounts may take up to one business day to reflect.
Payments to other banks may take up to three business days. Please check your account to confirm you have received this payment.

Regards,

The Business Online team

Annexure 9

61
SILBERBAUERS
(VERW HJM/DS/93/28)

FOR FURTHER ENDORSEMENTS SEE
VIR VERDERE ENDOSSEMENTE SIEN 6

OPGENEEM/ENTERED 2140
GESTAAF/VERIFIED

Landbank

M.A.C.

VERBIND MORTGAGED

VIR FOR R 170 000,00

B 22329 93

31 03 93

REGISTRATEUR/REGISTRAR

Afstand van voorrang van ingebonde geen t.g.v. verbandhouer.

BC 64149 / 2006

GEKANSELLEER CANCELLED

REGISTRATEUR/REGISTRAR

08 AUG 2006

2436

T 28967 93

TRANSPORTAKTE

108

KRAGTENS 'N PROKURASIE

Opgestel deur my,

Transportbesorger
H J MOUTON

SILBERBAUERS
Prokureurs
KAAPSTAD

HIERMEE WORD BEKEND GEMAAK

DAT ~~HENDRIK JOHANNES MOUTON~~ PIER - BRITA BLOMMAERT
verskyn het voor my, Registrateur van Aktes, ~~te Kaapstad, hy die gesegde K~~omparant synde behoorlik daartoe gemagtig deur 'n Volmag uitgevoer te GEORGE op die 18de dag van DESEMBER 1992, aan hom verleen deur

JAMES DEWALD BARNARD
(Identiteitsnommer 600703 5042 00 0)
Getroud buite gemeenskap van goedere

(hierna genoem die Transportgewer)

Van 227
Gedeelte die Buffelsdrift
T7795/93

6

Volledig

M.A.E.

(2)

VERBIND	MORTGAGED
VIR / FOR R 140 000,00	
B 60610/95	
1995-09-07	REGISTRATEUR/REGISTRAR

afstand van voorrang van vruggebruik gedoen t.g.v verbandhouer
~~Afstand van voorkoop gedoen t.g.v gerhandhawer~~

Volledig

(3)

WOP

VERBIND	MORTGAGED
VIR / FOR R 100 000,00	
B 51677/96	
31 07 96	REGISTRATEUR/REGISTRAR

AFSTAND VAN VOORRANG VAN VRUGGEBRUIK T.G.V. V/HOUER

WOP

VERBIND	MORTGAGED
VIR / FOR R 150 000,00	
B 20982 99	
1999-05-31	REGISTRATEUR/REGISTRAR

afstand van voorrang van vruggebruik TGV verbandhouer.

VIR ENDOSSEMENTE KYK BLADSY
FOR ENDORSEMENTS SEE PAGE 7

7.

T 28967/93.

ENDOSSEMENT KRAGTENS ART. 68 (1) VAN WET 47 VAN 1937	ENDORSEMENT BY VIRTUE OF SECT. 68 (1) OF ACT 47 OF 1937
PERSOONLIKE SERWITUUT SI VOORWAARDE OP BLADSY ENDOSSEMENT GEDATEER NIE VERVAL	THE PERSONAL SERVITUDE SI CONDITION C ON PAGE 3 ENDORSEMENT DATED HAS LAPSED.
BC 0000433082/2015	
21 AUG 2015	REGISTRATEUR/REGISTRAR

W.O.P.

VERBIND MORTGAGE	
VIR FOR R 4 000 000.00	
B23412/2015 (4)	
21 AUG 2015	REGISTRATEUR/REGISTRAR

welke Volmag, geteken in die teenwoordigheid van getuie ooreenkomstig die Wet, vandag aan my getoon is;

EN DIE KOMPARANT HET VERKLAAR dat die genoemde Transportgewer op **8 OKTOBER 1992** waarlik en wettiglik aan die ondergemelde Transportnemers verkoop het en dat hy in sy voornoemde hoedanigheid sedeer en transporteer in volle en vrye eiendom aan en ten gunste van:-

GERHARD ADAM BARNARD
(Identiteitsnommer 620106 5068 00 7)
en
MARIAN LYN BARNARD
(Identiteitsnommer 640419 0084 00 2)
Getroud binne gemeenskap van goedere met mekaar

(hierna genoem die TRANSPORTNEMERs)
Hul Erfgename, Eksekuteure, Administrateure of Regverkrygendes

GEDEELTE 19 van die Plaas BUFFELS DRIFT NO 227, Afdeling van GEORGE;

GROOT: 55,1787 (Vyf en vyftig komma een sewe ag sewe) Hektaar.

AANVANKLIK OORGEDRA kragtens Transportakte nr T14985/1953 met kaart 716/53 wat daarop betrekking het en GEHOU kragtens Transportakte nr T7794/1993.

A. **ONDERHEWIG** aan sodanige voorwaardes as na verwys word in Transportakte nr T12246/1955.

B. **ONDERHEWIG VERDER** aan die terme van die endossement gedateer 9 Augustus 1988 op gesegde Transportakte nr T16414/1969, wat soos volg lees:

"Kragtens Notariële Sessie van Saaklike Regte K544/88 gedateer 27-5-1988. Die eienaar van binnegemelde eiendom sedeer hiermee aan HIPPO QUARRIES (EIENDOMS) BEPERK (genoem "die Maatskappy") 'n saaklike reg die uitsluitlike en alleenreg om in op en onder die Klipgebied, groot 32,1462 Hektaar soos aangedui deur die figuur a middel van Stroom c middel van Brakkloofstroom b op serwituutkaart L.G.Nr 7381/1987, klip en sand uit te grawe, uit te haal, te herwin, te verwerk, te verwyder en vir eie rekening of andersins te verkoop of te vervreem. Soos meer volledig sal blyk uit gesegde Notariële Akte."

C. **ONDERHEWIG VERDER** aan die lewenslange vruggebruik ten gunste van GERTRUIDA ELIZABETH BARNARD Identiteitsnommer 371114 0028 00 1, Ongetroud, kragtens klousules 4.5.1. en 4.5.2. van die Gesamentlike Testament van wyle JAMES IZAAK BARNARD en nagelate eggenote GERTRUIDA ELIZABETH BARNARD, gedateer te GEORGE op 10 Julie 1987 met Kodisille daartoe gedateer 5 Augustus 1987, 27 April 1988 en 7 Desember 1990, wat soos volg lees:

4.5.1. "Al die genoemde eiendomme sal onderhewig wees aan 'n lewenslange reg van vruggebruik aan en ten gunste van die Testatrise, die gesegde GERTRUIDA ELIZABETH BARNARD (gebore Terblanche), welke vruggebruik egter slegs op die volgende wyse deur die Testatrise uitgeoefen mag word, naamlik:

4.5.2. Die betrokke eiendom(me) sal aan die drie erfgename van die blote eiendomsreg daarin verhuur word teen 'n jaarlikse huurgeld van R3 500,00 (Drieduisend Vyfhonderd Rand) per jaar per erfgenaam, met jaarlikse stygings van sodanige huurgeld teen 5% saamgesteld, met dien verstande egter dat die Testatrise ook geregtig sal wees op die inkomste uit die klipgroefregte op die plaas Gedeelte 19 van Buffelsdrift tot haar dood."

D. **KRAGTENS** Notariële Akte No K169/93 gedateer 30 Oktober 1992 is die hierinvermelde eiendom geregtig op 'n serwituut reg van toegang tot en waterpypleiding vanuit die Witelsrivier oor Gedeelte 30 van die Plaas Buffels Drift No 227 gehou kragtens Transportakte No T7796/1993.

E. **GEREGTIG** op die ewigdurende serwituut reg van toegang tot en waterpypleiding vanuit die WITELSRIVIER oor die Transportgewer se onroerende eiendom beskryf as:

RESTANT van die Plaas BUFFELS DRIFT NO 227, Afdeling van GEORGE;

GROOT: 86,2311 (Ses en tagtig komma twee drie een een) Hektaar.

GEHOU kragtens Transportakte No T7794/1993.

WESHALWE die Komparant afstand doen van al die regte en titel wat die TRANSPORTGEWER voorheen op die genoemde eiendom gehad het en gevolglik ook erken dat die TRANSPORTGEWER geheel en al van die besit daarvan onthef en nie meer daartoe geregtig is nie; en dat, kragtens hierdie Akte, die TRANSPORTNEMERS, Hul Erfgename, Eksekteurs, Administrateurs of Regverkrygendes, tans en voortaan daartoe geregtig is ooreenkomstig plaaslike gebruik, behoudens die regte van die Staat;
EN TEN SLOTTE erken hy dat die gehele koopskat ten bedrae van **R200 000,00 (TWEEHONDERDDUISEND RAND)** bedra.

TEN BEWYSE WAARVAN ek, die genoemde Registrateur, tesame met die Komparant, hierdie Akte onderteken en dit met die Ampseël bekragtig het.

ALDUS GEDOEN en **VERLY** op die Kantoor van die Registrateur van Aktes in KAAPSTAD op hede die 31ste dag van die Maand Maart in die jaar Eenduisend Negehonderd drie en Negentig (1993).

q.q.

in my teenwoordigheid

REGISTRATEUR VAN AKTES

Annexure 10

TRANSPORTBESORGER SERTIFIKAAT

Ek, die ondergetekende

HERMAN JOSIAS SWANEPOEL (44409)

Transportbesorger en praktiserend te Groot Brakrivier in die Wes Kaap Provinsie sertifiseer op grond van die nodige nasoeke deur my gedoen dat;

GEDEELTE 19 VAN DIE PLAAS BUFFELSDRIFT NO 227,
AFDELING GEORGE
GROOT: 55,1787 (Vyf en vyftig komma een sewe ag sewe) Hektaar
GEHOU KRAGTENS T 28967/93

Onderhewig is aan:

Notariële Sessie van Saaklike Regte nommer K 544/88 S wat toelaat vir die uitgrawe,uithaal,herwin,verwerk,verwyder en vervreem of verkoop van klip en sand soos beskryf in gesegde Notariële Sessie oor gebied naamlik:

"….die figuur a middel van stroom c middel van die Brakkloofstroom b op serwituutkaart LG nommer 7381/1987,…."

Transportakte no T 28967/93 is verder ondersoek en sertifiseer ondergetekende dat daar geen verdere beperkende voorwaardes teen die eiendom geregistreer is nie.

Die volgende verbande is teen die eiendom geregistreer:

1. B60610/1995 tgv ABSA BANK LTD ten bedrae van R 140 000 (met ander eiendomme)
2. B51677/1996 tgv ABSA BANK LTD ten bedrae van R 100 000 (met ander eiendomme)
3. B20982/1999 tgv ABSA BANK LTD ten bedrae van R 150 000 (met ander eiendomme)
4. B23412/2015 tgv ABSA BANK LTD ten bedrae van R 4 000 000 (met ander eiendomme)

Geteken te Groot Brakrivier op 4 November 2024

TRANSPORTBESORGER
HERMAN JOSIAS SWANEPOEL (LPC NOMMER 44409)

Annexure 11

mineral resources
& energy
Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

WESTERN CAPE REGION
Tel: 021 427 1000; **Fax:** 021 427 1046
Private Bag X9 Roggebbaai, 8012; 7th Floor, MAP House, 44 Strand Street, Cape Town, 8012
From: Mineral Regulation **Sub-Directorate:** Mine Environmental Management
Enquiries: Linda Njemla **EAPASA Reg No:** 2019/1312 **E-mail:** Linda.Njemla@dmre.gov.za
Ref No.: WC30/5/1/3/2/10339MP

For Attention: Jasper van Der Westhuizen E-mail: Jasper@tulleken.co.za
CC: sdavey@klipberg.co.za

The Directors
Kirsten & Tulleken Vervoer CC
P. O. Box 1200
George
6530

APPROVED

Dear Sir/Madam

ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (NEMA) AS AMENDED, AND THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGULATIONS, 2014 AS AMENDED FOR MINING PERMIT APPLICATION IN RESPECT OF AGGREGATE, STONE AND GRAVEL AND RELATED INFRASTRUCTURAL ACTIVITIES ON PORTION 19 OF FARM BUFFELS DRIFT 227 SITUATED IN THE MAGISTERIAL DISTRICT OF GEORGE: THE WESTERN CAPE REGION

With reference to the abovementioned application, please be advised that the Department has decided to **grant** environmental authorisation in terms of the National Environmental Management Act (Act 107 of 1998). The environmental authorisation and reasons for the decision are attached herewith.

In terms of regulation 4(2) of the Environmental Impact Assessment Regulations of 2014, you are instructed to notify all registered interested and affected parties, in writing within 14 (Fourteen) calendar days, from the date of the Department's decision in respect of your application and the relevant provisions regarding the lodgement of appeal must be provided for in terms of the National Appeal Regulations of 2014.

Should you wish to appeal any aspect of the decision, **you must submit the appeal to the Minister of Forestry, Fisheries and the Environment a copy of such appeal to**

the Department of Mineral Resources and Energy (Western Cape Regional Office), within 20 days from the date of notification, and such appeal must be lodged as prescribed in by Chapter 2 of the National Appeal Regulations of 2014, by means of the methods as prescribed below:

Appeal to the Department of Forestry, Fisheries and the Environment:

Attention : Directorate Appeals and Legal Review
Email : appeals@dffe.gov.za
By post : Private Bag X 447, **PRETORIA**, 0001
By hand : Environmental House, Corner Steve Biko and Soutpansberg Street, Arcadia, **Pretoria,** 0083

In addition, please provide a copy of the lodged appeal to the Department of Mineral Resources and Energy.

Attention : Regional Manager: Western Cape Region
By facsimile : (021) 427 1046
E-mail : Pieter.Swart@dmre.gov.za
By post : Private Bag X 09, ROGGEBAAI, 8012
By hand : 7th Floor, MAP House, 44 Strand Street, Cape Town, 8001

Should you decide to appeal, you must comply with the National Appeal Regulation of 2014 in relation to notification of all registered interested and affected, and a copy of the official appeal form can be obtained from the Department of Environmental Affairs.

Kind Regards,

.....
REGIONAL MANAGER: MINERAL REGULATION
WESTERN CAPE REGIONAL OFFICE
DATE: 31/7/2024

APPROVED

mineral resources
& energy
Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

WESTERN CAPE REGION
Tel: 021 427 1000; **Fax:** 021 427 1046
Private Bag X9 Roggebaai, 8012; 7th Floor, MAP House, 44 Strand Street, Cape Town, 8012
From: Mineral Regulation **Sub-Directorate:** Mine Environmental Management
Enquiries: Linda Njemla **EAPASA Reg No:** 2019/1312 **E-mail:** Linda.Njemla@dmre.gov.za
Ref No.: WC30/5/1/3/2/10339MP

ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) AS AMENDED ("NEMA") AND THE 2014 EIA REGULATIONS AS AMENDED FOR AGGREGATE, STONE AND GRAVEL AND RELATED INFRASTRUCTURAL MINING ACTIVITIES:

Reference number:	WC30/5/1/3/2/10339MP
Last amended:	First issue
Holder of authorisation:	Kirsten & Tulleken Vervoer CC
Location of activities:	Portion 19 of farm Buffels Drift 227 situated in George Magisterial District.

DECISION

ACRONYMS

DEPARTMENT:	Department of Mineral Resources and Energy
ECO:	Environmental Control Officer
EA:	Environmental Authorisation
EIA:	Environmental Impact Assessment
EIA REGULATIONS:	EIA Regulations, 2014 as amended
EIR:	Environmental Impact Report
EMPr:	Environmental Management Programme
HWC:	Heritage Western Cape
I&AP:	Interested and Affected Parties
MPRDA:	Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), as amended
NEMA:	National Environmental Management Act, 1998 (Act 107 of 1998), as amended
NEMWA:	National Environmental Management: Waste Act, 2008 (Act 59 of 2008), as amended

APPROVED

SAHRA: South African Heritage Resources Agency

The Department is satisfied, on the basis of information available to it and subject to compliance with the conditions of this environmental authorisation, that the applicant should be authorised to undertake **NEMA EIA** listed activities specified below. Details regarding the basis on which the Department reached this granting decision are set out in **Annexure "1"** and **"2"** of this environmental authorisation.

ACTIVITY APPLIED FOR

By virtue of the powers conferred on it by NEMA, the Department of Mineral and Energy Resources hereby **Grants** an Environmental Authorisation (EA) to **Kirsten & Tulleken Vervoer CC** with the following contact details –

Physical Address:

26 Binnestraat
George
Industria

Postal Address:

P. O. Box 1200
George, 6530

Contact person: Jasper van der Westhuizen
Cell: 079 268 6365
Telephone: 044 875 8035
Fax: 044 875 0273
Email: jasper@tulleken.co.za

APPROVED

to undertake the following activities listed in the NEMA:EIA Regulations:

LISTED ACTIVITIES AUTHORISED:

Listed Activities	Activity and/or project description
Activity 21 of Government Notice No. R. 327 of April 2017 as amended by GNR 517 of 11 June 2021.	
Any activity including the operation of that activity which requires a mining permit in terms of Section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as well as any other applicable Activity, contained in this Listing Notice or Listing Notice 3 of 2014 required to exercise a permit.	The development of an open cast 4.9775 hectares of aggregate, stone and gravel mine.

Detailed description of the activity are as follows:

The holder is hereby authorised to undertake mining activities including the above listed activities as it relates to the development as follows:

Topsoil will be stripped and stockpiled and then the underlying granite gravel/aggregate will be dug out by an excavator and directly loaded onto trucks. Topsoil will be returned to the surface on completion of mining. Rehabilitation activities will be concurrently with mining operations. Final rehabilitation of slopes to not more than 1:3. Shaping the floor. Replacing topsoil, re-establishing agricultural contours, stabilising the soil surface and rehabilitating the area so that it can continue to be used for agricultural purposes.

Site description and location:

Mining activities will be conducted on Portion 19 of the farm Buffels Drift 227 in Magisterial district of George. The site is located 13 km south-west of the centre of George. Access to the site is obtained over a farm road from the R102 at the following co-ordinates as described in page 11, 12 & 13 of the BAR/EMPr:

ID.	X	Y	Latitude	Longitude
A	61381.25	3765203.52	-34.012107	22.335503
B	61221.48	376504.22	-34.013024	22.337225
C	61119.50	3765354.28	-34.013482	22.338326
D	61104.42	3765383.34	-34.013744	22.338487
E	61155.24	3765462.53	-34.014455	22.337931
F	61308.30	3765417.60	-34.014041	22.336277
G	61388.89	3765420.62	-34.014064	22.335405
H	61472.42	3765377.47	-34.013670	22.334503

The SG code for the farm portion is as follows:

C02700000000022700019

Granting of this EA is subject to the conditions set out below (site specific) and in **Annexure 2** (Departmental Standard Conditions). The Environmental Management Programme (EMPr) attached as part of the reports for the above development submitted as part of the application for an EA complies with Section 24N of NEMA, Appendix 4 of the EIA Regulations, 2014 as amended and is hereby approved and must be adhered to throughout the life cycle of the operation.

APPROVED

ENVIRONMENTAL AUTHORISATION SITE-SPECIFIC CONDITIONS

1. Mining activities must be conducted in accordance with the approved Environmental Management Programme and the attached site layout plan and keep the impact on the receiving environment as low as possible.

2. The total extent of the mining permit is strictly limited to 4.9775 ha. This includes the excavations, stockpiles, processing and any mining activity applied and authorised.

3. Mining activities must strictly be conducted within the demarcated area and other areas outside of the mine layout boundary must be treated as the no-go areas.

4. Visible semi-permanent markers must be placed on the mining boundary before mining activities commences and must be kept for the duration of mining.

5. Concurrent mining and rehabilitation must be done in the mining area so that the size of the active mining area should not be larger than one hectare, and at the end of mining, the EA holder must ensure that the site returns to its agricultural state by ensuring that:

    5.1 the topography and surface have been smoothed;
    5.2 that topsoil has been spread on the surface;
    5.3 the pre-mining contour banks have been re-established to suitable specifications (height, slope, distance apart) at least as intensive as prior to disturbance, and that the integrity of the contour bank system as a whole is in place;
    5.4 there is no visible erosion across the area, or down-slope of it as a result of mining, and that no part of the area has been left unacceptably vulnerable to erosion;
    5.5 a successful crop has been established across the entire area.

This shall be done as per the recommended rehabilitation plan.

6. 400mm of topsoil must be removed and stockpiled to be returned after mining and spread evenly over the mined area.

7. The stockpiled topsoil must be protected from and/or against losses by water and wind erosion. Driving over stockpiled topsoil is prohibited.

8. All alien and invasive species must be removed within the mining area and 50m away from the mining area prior to mine closure.

APPROVED

9. Noise generated during mining and rehabilitation operations must comply with the Western Cape Noise Control Regulations (Province notice 200/2013).

10. Vehicular movement must be restricted to the existing access road and the one authorised by the PGWC: Department of Transport & Public Works and driving through undisturbed and inactive areas is prohibited.

11. All recommendations and conditions set out in the approved EMPr must be strictly adhered to.

APPROVED

ANNEXURE 1: REASONS FOR THE DECISION

1. Key factors considered in making the decision

All the information submitted to the Department were considered when evaluating this application. Below is a summary of the main topics that in the Department's view were of most significance in making this decision.

a) The environmental impacts associated with the proposed activity outlined in the BAR will be addressed through the implementation of the proposed mitigation measures outlined in the EMPr compiled by Mr Stephen Davey of Klipberg Consulting (Pty) Ltd.

b) The screening tool report which shows various sensitivities for various themes.

c) The Public Participation Process (PPP) Report is contained in the submitted BAR & EMPr received by the Department on 19 June 2024 (attached as Appendix 1). The PPP that was undertaken by the EAP & Applicant has satisfied the minimum requirements prescribed in the EIA Regulations R982 of 2014 as amended by (GN 326) for public involvement and the PPP results shows that the concerns raised by the I&APs and Government Authorities such as Department of Agriculture Western Cape, National Department of Water and Sanitation, Heritage Western Cape, Garden Route Municipality, George Municipality, and the Department of Environmental Affairs and Development Planning were addressed by the EAP in the BAR and EMPr. Additionally, comments were also received internally from the Principal Inspector of Mines from the Mine Health and Safety Inspectorate, with no objection.

d) The Terrestrial Biodiversity Impact Assessment, the Agricultural Compliance Statement; Aquatic biodiversity assessment and motivation was provided for the studies that were not conducted.

APPROVED

2. Findings

After consideration of the information and factors listed above, the Department made the following findings –

a) The need and desirability of the project was addressed.

b) The potential impacts on the proposed site were clearly investigated and mitigation measures were outlined in the BAR and EMPr.

c) The application area is located on agricultural land and is zoned for agricultural use.

d) Public Participation Process complied with Chapter 6 of the 2014 EIA Regulations R.982. The PPP included, *inter-alia*, the following:

- A newspaper advertisement was placed in the local newspaper "**George Herald" on 07 March 2024.**
- A register of all the interested and affected parties was created.
- Site Notices were placed in public areas.
- Notices were sent to all key stakeholders and the registered interested and affected parties;
- The landowner submitted his letter of consent for this mining permit application.

There were two objections from the neighbouring farm owners, which were based on the direct impact on their farm and environmental impact by the mine which may affect their agricultural activities, decrease in quality of life for their families and community situated on the surrounding farms due to the expected mining, processing and logistical activities and the general air, noise, visual, soil, traffic flow and water pollution that is created due to the expected mining activities. The EAP adequately addressed these concerns in the BAR response section.

e) Agricultural theme sensitivity was rated as high by the screening tool. This has been downgraded to low by the specialist and a compliance statement has been prepared (Attached as Appendix 2 of the BAR). It was concluded that the proposed mining will not reduce the future agricultural production potential of the site, if effective rehabilitation is implemented. It will have no impact on agricultural employment. APPROV

f) Aquatic biodiversity assessment was undertaken by Debbie Fordham of Upstream Consulting (see Appendix 3) and it was confirmed that the site had a 'low' sensitivity with respect to aquatic biodiversity. The site assessment determined that there are no aquatic features within the proposed mining permit area. Within the 500m radius study area there are five watercourses and numerous small contour dams. The mining area is located on a hillslope between the Brakkloof River and a small tributary stream. The Brakkloof River merges with the Maalgate River approximately 2km downstream. However, with the implementation of mitigation measures and stormwater management, these features will not be impacted by the project. The assessment also revealed that there are two watercourses within 100m of the mining permit area, therefore, an application for Section 21 (c) and (i) water use authorisation in terms of the National Water Act (Act 36 of 1998) should be undertaken prior to commencement. Recommendation was made that a condition of approval be the compilation of a detailed stormwater management plan for inclusion in the EMP to ensure that no aquatic habitat is indirectly impacted by the mining activities. This stormwater management plan has been prepared and attached as appendix 6 of the BAR.

g) Terrestrial biodiversity compliance stated has been complied by Debbie Fordham of Upstream Consulting as this was identified as very high (see Appendix 4) but the site assessment revealed that the sensitivity of the site with respect to terrestrial biodiversity is low. The site has been transformed by farming activities. The sensitivity

with respect to plant species and animal species is low. The site is a transformed area that is used for agricultural activities. It was discovered that the mapping of a small part of the area as an Ecological Support Area 2 (ESA2) is incorrect. The original natural vegetation was cleared by farming activity many years ago.

h) A NID was submitted to HWC. HWC has confirmed that no further studies are required. The sensitivity of the site is 'low' with respect to heritage resources.

i) The applicant has complied with section 24P of NEMA and submitted the financial provision for rehabilitation and remediation of environmental damage caused by mining operations.

APPROVED

ANNEXURE 2: DEPARTMENTAL STANDARD CONDITIONS

1 SCOPE OF AUTHORISATION

1.1 The holder of EA shall be responsible for ensuring compliance with the conditions contained in the EA. This includes any person acting on the holder's behalf, including but not limited to an agent, servant, contractor, subcontractor, employee, consultant or any person rendering a service to the holder of EA.

1.2 Any changes to, or deviation from the project description set out in this EA must be approved in writing by this department before such changes or deviation may be affected. In assessing whether to grant such approval or not, the department may request such information as is deemed necessary to evaluate the significance and impacts of such changes or deviation and it may be necessary for the holder of the EA to apply for further authorisation in terms of the EIA Regulations.

1.3 The activities, which are authorised, may only be carried out at the property indicated in the EA and or on the approved EMPR.

1.4 When any of the holder of the EA contact details change including name of the responsible person, physical or postal address/ or telephonic details, the holder of the EA must notify the department as soon as the new details become known to the holder of the EA.

1.5 The EA does not negate the responsibility of the holder to comply with any other statutory requirements that may be applicable to the undertaking of such activities.

1.6 The holder of EA must ensure that all areas where the authorised activities occur have controlled access to ensure safety of people and animals.

2 APPEAL OF AUTHORISATION

APPROVED

2.1 The holder of EA must in writing, within 14 (fourteen) calendar days from the date of this decision and in accordance with EIA Regulation 4(2) do the following:
Notify all registered I&APs of –

2.1.1 The outcome of the application;
2.1.2 The date of the decision;
2.1.3 The date of issue of the decision and;
2.1.4 The reasons for the decision as included in Annexure 1 and Departmental Standard Conditions in Annexure 2.

2.2 Draw the attention of all registered I&APs to the fact that an appeal may be lodged against the

decision in terms of the National Appeals Regulations,

2.3 Draw the attention of all registered I&APs to the manner in which they may access the decision.

2.4 Provide the registered I&APs with:

2.4.1 Name of the holder (entity) of this EA
2.4.2 Name of the responsible person for this EA
2.4.3 Postal address of the holder;
2.5.4 Telephonic and fax details of the holder and
2.5.5 E-mail address of the holder if any

APPROVED

3 COMMENCEMENT OF THE ACTIVITIES

3.1 In order to ensure safety, all employees must be given the necessary personnel protective equipment (PPE) and any employee without PPE must not be allowed on site.

3.2 This EA must be provided to the site operator and the requirements thereof must be made fully known to him or her.

3.3 Appropriate notification sign must be erected at the mining site, warning the public (residents, visitors etc.) about the hazard around the mining site and presence of heavy vehicles and machinery.

3.4 Mitigation measures must be implemented to reduce the risk of erosion and alien species invasion.

3.5 Existing topsoil stockpiles and any new topsoil stripped from mining area must be protected from erosion, contamination and/or pollution.

3.6 If any soil contamination is noted at any phase of the proposed activities, the contaminated soil must be removed to a licensed waste disposal facility designed for such waste and the site must be rehabilitated to the satisfaction of the department and Department of Water and Sanitation. The opportunity for the onsite remediation and re-use of contaminated soil must be investigated prior to the disposal and this department must be informed in this regard.

3.7 An integrated waste management approach must be implemented that is based on waste minimization (waste management hierarchy) and must incorporate avoidance, reduction, recycling, treat, reuse and disposal where appropriate. Ensure that no refuse generated on the mining area is placed, buried, dumped or deposited on the adjacent properties or public places and open space.

3.8 The waste storage site must have a firm, impermeable, chemical resistant floors and a roof to prevent direct sunlight and rainwater from getting in contact with the waste.

3.9 In terms of sections 28 and 30 of NEMA, and sections 19 and 20 of the National Water Act, 1998 (Act No. 36 of 1998) as amended, any costs incurred to remedy environmental damage must be borne by the person responsible for the damage. It is therefore imperative that the holder of the EA reads through and understands the legislative requirements pertaining to the project. It is the holder of EA responsibility to take reasonable measures which include informing and educating contractors and employees about environmental risks of their work and training them to operate in an environmentally acceptable manner.

3.10 Operational vehicles for mining must be serviced and maintained in the manner whereby excessive smokes and noise production is reduced to acceptable levels, and to prevent oil leaks. Servicing of machinery and vehicles must not take place on site.

3.11 Residents (if any) on the property and surrounding areas must be informed if any unusual noise activities are planned.

3.12 Dust suppression measures must be implemented on all exposed surface access road to minimize and control airborne dust.

3.13 Should any heritage remains be exposed during operation or any actions on the site, these must immediately be reported to the South African Heritage Resource Agency (SAHRA) and/or Heritage Western Cape (HWC) (in accordance with the applicable legislation). Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from the South African Heritage Resource Agency (SAHRA) and/or Heritage Western Cape (HWC).

APPROVED

Heritage remains include: archaeological remains (including fossil bones and fossil shells); coins; middens, indigenous and/or colonial ceramics; any articles of value or antiquity; marine shell heaps; stone artifacts and bone remains; structures and other built features; rock art and rock engravings; shipwrecks; and graves or unmarked human burials. A qualified archaeologist must be contracted where necessary (at the expense of the applicant and in consultation with the relevant authority) to remove any human remains in accordance with the requirements of the relevant authority.

3.14 Chemical sanitation facilities or system such as toilets that do not rely on the seepage of liquids must be provided with a ratio of 1 for every 15 workers. These must be placed such that they prevent spills or leaks to the environment and must

be maintained according to the operating instructions and the content thereof must be disposed of at an authorised wastewater treatment works.

3.15 The holder of EA must ensure that any water uses listed in terms of Section 21 of National Water Act must get authorization from Department of Water and Sanitation prior to the commencement of such activities.

3.16 This EA does not purport to absolve the holder of EA from its common law obligations towards the owner of the surface of land affected.

3.17 The holder of EA must ensure that rehabilitation of the disturbed areas caused by operation at all times comply with the approved EMPR.

3.18 This EA may be amended or withdrawn at any stage for non-compliance and provides no relief from the provisions of any other relevant statutory or contractual obligations.

3.19 The holder of EA must note that in terms Section 20 of the National Environmental Management: Waste Act, 2008 (Act No.59 of 2008), no person may commence, undertake or conduct a waste management activity, except in accordance, with the requirements of norms and standards determined in terms of Section 19 (3) for that activity or a waste management license is issued in respect of that activity if license is required.

3.20 An appeal under Section 43 (7) of the National Environmental Management Act (NEMA), Act 107 of 1998 (as amended) suspend an EA or exemption or any provisions of conditions attached hereto, or any directive unless the Minister directs otherwise.

3.21 Should you be notified by the Minister of a suspension of the authorisation pending appeal procedure, you may not commence with the activities until such time that the Minister allows you to commence with such activities in writing.

3.22 The department reserves the right to audit and/or inspect the activities without prior notification at any reasonable time and at such frequency as may be determined by the Regional Manager.

3.23 Subject to the commencement and duration requirements of the MPRDA, the EA is valid for the period for which the aforesaid permit/right is granted. When the renewal application of the permit/right is lodged; the EA validity, obligations and liabilities which were attached thereto immediately before the date on which it lapsed continue to be valid until the decision of the renewal is made and become valid again with the intervals of the approved renewal period.

APPROVED

3.24 This EA will only be effective on the event that a corresponding mining right/permit is issued in terms of MPRDA as amended and none of the activities listed in this EA may commence without a mining right/Permit.

3.25 The listed activities, including site preparation, must not commence within 20 (twenty) calendar days of the date of the notification of the decision being sent to the registered I&APs. In the event that an appeal is lodged with the appeal administrator, the effect of this environmental authorization is suspended until such time as the appeal is decided.

3.26 Should there be any conflicting conditions between this EA and other approval granted by other authorities, it is upon the holder of EA to bring it to the attention of the department for resolution.

4 MANAGEMENT OF ACTIVITIES

APPROVED

4.1 A copy of the EA and EMPR must be kept at the property or on-site office where the activity (lies) will be undertaken. The EA and EMPR must be produced to any authorised officials of the department who request to see it and must be made available for inspection by any employee or agent of the holder of the EA who works or undertakes work at the property.

4.2 The content of the EMPR and its objectives must be made known to all contractors, subcontractors, agent and any other people working on the site, and any updates or amendments to the EMPR must be submitted to the department for approval.

4.3 Any complaint received from the I&AP during all phases of the operation must be attended to as soon as possible and addressed to the satisfaction of all concerned interested and affected parties.

4.4 Material leaving the site must be covered with a cloth during transportation to prevent sand from being blown away by wind and causing pollution.

4.5 The holder of the EA must prevent nuisance conditions or health hazards, or the potential creation of nuisance conditions or health hazards.

4.6 The holder of the EA must ensure that all non-recyclable waste is disposed of at waste management facilities licensed to handle such waste and all recyclable waste is collected by licensed waste management facilities for recycling, reuse or treatment.

4.7 Non-compliance with any condition of this EA or the approved EMPR is an offence in terms of section 49A(1)(c) of NEMA and may result in criminal proceedings and issuing of a directive in terms of section 28 and or a compliance notice in terms of section 31L of NEMA.

4.8 Only listed activities that are expressly specified in the EMPR that forms part of this EA may be conducted, and additional or new activities not specified herein must be applied for by the holder and authorized by the competent authority in the form of an amendment of the EA and the EMPR before such activities may be commenced with. This condition is also applicable in the case of the amendment, addition, substitution, correction, and removal or updating of any detail in the aforesaid EA and EMPR.

4.9 Rehabilitation of the disturbed surface caused by operation must comply with the approved EMPR.

4.10 The Holder of EA must appoint the ECO before commencement of mining activities and ensure that the name and contact details of the ECO is made available to the Regional Manager within 30 days of commencement. The holder of EA must also ensure that an ECO is always available on site to ensure that activities at all times comply with the issued EA and approved EMPR. APPROVED

4.11 The ECO must:

4.11.1 Keep and maintain a detailed incidents register (including any spillages of fuels, chemicals or any other material

4.11.2 Keep a complaint register on site indicating the complaint and how the issues were addressed, what measures were taken and what the preventative measures were implemented to avoid re-occurrence of complaints.

4.11.3 Keep records relating to monitoring and auditing on site and avail them for inspection to any relevant authorised officials.

4.11.4 Keep copies of all environmental reports submitted to the department.

4.11.5 Keep the records of all permits, licences and authorisations required by the operation.

4.11.6 Compile a monthly monitoring report and make it available to the department if requested.

4.12 The duties and responsibility of the ECO should not be seen as exempting the holder of the EA from the legal obligations in terms of the NEMA.

4.13 The footprint of the activities must be limited on the areas authorized for the actual mining works and operational activities and all areas outside of the footprint must be regarded as a "no go" areas.

4.14 Erosion and soil loss must be prevented by making sure that mining is only confined to one phase at a time.

4.15 In order to prevent nuisance conditions, the holder of the EA must ensure that all storage skips and bins are not overfilled. The holder of the EA must also make sure that littering of waste within the mining area is prohibited.

5 REPORTING TO THE DEPARTMENT

5.1 The holder of EA must:

5.1.1 submit and Environmental Audit Report to this department biennially and such report must be done by qualified Environmental Assessment Practitioner and the audit report must specify whether conditions of this environmental authorisation and EMPR/closure plan are adhered to;

5.1.2 The audit report must be in accordance to appendix 7 of the 2014 EIA regulations;

5.1.3 identify and assess any new impacts and risks as a result of undertaking the activities, if applicable

5.1.4 identify shortcomings in the EMPR/closure plan, if applicable;

5.1.5 identify the need, if any, for any changes to the management, avoidance and mitigation measures provided for in the EMPR/closure plan;

5.1.6 if applicable, specify that the corrective action/s taken for the previous audit's non-conformities, was adequate; and,

5.1.7 Be submitted by the holder to the competent authority within 30 days from the date on which the auditor finalised the audit.

5.2 Should any shortcomings in terms of Regulation 34(4) be identified, the holder must submit recommendation to amend the EMPR/closure plan in order to rectify any shortcomings identified with the aforementioned audit report.

5.3 The holder of the EA must annually assess the environmental liabilities of the operation by using the master rates in line with the applicable Consumer Price Index (CPI) at the time and address the shortfall on the financial provision submitted in terms of section 24P of NEMA.

5.4 The holder of the EA must, within 24 hours of any incidents occurring, notify the Competent Authority of the occurrence or detection of any incident on the site, or incidental to the operation of the site, which has the potential to cause, or has caused pollution of the environment, health risks, nuisance conditions or water pollution.

5.5 The holder of the EA must, within 14 days, or a shorter period of time, if specified by the Competent Authority from the occurrence or detection of any incident referred to in condition 5.4, submit an action plan, which must include a detailed time schedule, and resource allocation signed off by top management, to the satisfaction of the Competent Authority of measures taken to –

APPROVED

5.5.1 Correct the impact resulting from the incident;

5.5.2 Prevent the incident from causing any further impact; and

5.5.3 Prevent a recurrence of a similar incident.

5.5.4 In the event that measures have not been implemented within 21 days of the incident referred to in condition 5.4, or measures which have been

implemented are inadequate, the Competent Authority may implement the necessary measures at the cost of the holder of the EA.

6 SITE SECURITY AND ACCESS CONTROL

6.1 The holder of the EA must ensure effective access control on the site to reasonably prevent unauthorised entry. Signs indicating the risks involved in unauthorised entry must be displayed at each entrance.

6.2 The mining area must be demarcated, and lockable gates must be installed to restrict unauthorized access to the mining site.

6.3 Weatherproof, durable and legible notices in at least three official languages applicable in the area must be displayed at each entrance to the Site. These notices must prohibit unauthorised entry and state the hours of operation, the name, address and telephone number of the holder of the EA and the person responsible for the operation of the site.

7 EMERGENCY PREPAREDNESS PLAN

7.1 The holder of the EA must maintain and implement an emergency preparedness plan and review it biennially when conducting audit and after each emergency and or major accident. The plan must, amongst others, include:

7.1.1 Site Fire

7.1.2 Spillage

7.1.3 Natural disasters such as floods

7.1.4 Industrial action

7.1.5 Contact details of police, ambulances and any emergency centre closer to the site.

APPROVED

7.2 The holder of EA must ensure that an up-to-date emergency register is kept during all phases of the operation. This register must be made available upon request by the department.

8 INVESTIGATIONS

8.1 If, in the opinion of the Competent Authority, nuisances or health risks may be or is occurring on the site, the holder of the EA must initiate an investigation into the cause of the problem or suspected problem.

8.2 If, in the opinion of the Competent Authority, pollution may be or is occurring, the holder of the EA must initiate an investigation into the cause of the problem or suspected problem. Such investigation must include the monitoring of the water quality variables and air quality, at those monitoring points and such frequency as may be specified by the Competent Authority.

8.3 Investigations carried out in terms of conditions 8.1 and 8.2 above must include the monitoring of the relevant environmental pollution, nuisance and health risk variables, at those monitoring points and such frequency to be determined in consultation with the Competent Authority.

8.4 Should the investigation carried out as per conditions 8.1 and 8.2 above reveal any unacceptable levels of pollution, the holder of the EA must submit mitigation measures to the satisfaction of the Competent Authority.

8.5 The holder of the EA must comply with Section 28 of the NEMA and conduct mining in an environmentally friendly manner.

9 COMMISSIONING AND DECOMMISSIONING

9.1 The commissioning and decommissioning of individual activity within the overall listed Mining activity must take place within the phases and timeframes as set out in EMP or EMPR.

10 SITE CLOSURE

10.1 The holder of EA must apply for a closure certificate in terms of Section 43 of Mineral and Petroleum Resources Development Act (Act 28 of 2002), as amended within 180 days of occurrence of lapsing, abandonment, cancellation, cessation, relinquishment and completion of development.

10.2 The application for closure indicated above must be submitted together with all relevant documents as indicated in Section 43 of Mineral and Petroleum Resources Development Act (Act 28 of 2002), as amended.

10.3 No exotic plants may be used for rehabilitation purposes only indigenous plant can be utilized for rehabilitation purposes.

10.4 The holder of EA remains responsible for any environmental liability, pollution or ecological degradation, the pumping and treatment of extraneous water, compliance with the conditions of EA and the management and sustainable closure thereof until the Minister has issued a Closure Certificate in terms of Section 43 of Mineral and Petroleum Resources Development Act (Act 28 of 2002). Where necessary the Minister may retain certain portion of financial provision for residual, health or environmental impacts that might be known in future.

APPROVED

11 NEMA PRINCIPLES

The NEMA Principles (set out in Section 2 of NEMA, which apply to the actions of all Organs of State, serve as guidelines by reference to which any Organ of State

must exercise any function when taking any decision, and which must guide the interpretation, administration and implementation of any other law concerned with the protection or management of the environment), *inter alia*, provides for:

- the effects of decisions on all aspects of the environment to be taken into account;
- the consideration, assessment and evaluation of the social, economic and environmental impacts of activities (disadvantages and benefits), and for decisions to be appropriate in the light of such consideration and assessment;
- the co-ordination and harmonisation of policies, legislation and actions relating to the environment;
- the resolving of actual or potential conflicts of interest between Organs of State through conflict resolution procedures; and
- the selection of the best practicable environmental option.

12 DISCLAIMER

The Department of Mineral Resources in terms of the conditions of this environmental authorisation shall not be responsible for any damages or losses suffered by the holder, developer or his/her successor in any instance where construction or operation subsequent to construction is temporarily or permanently stopped for reasons of non-compliance with the conditions as set out herein or any other subsequent document or legal action emanating from this decision.

13 RECOMMENDATIONS

In view of the above, the NEMA principles, compliance with the conditions stipulated in this EA, and compliance with the EMPR/closure plan, the competent authority is satisfied that the proposed listed activities will not conflict with the general objectives of Integrated Environmental Management stipulated in Chapter 5 of NEMA, and that any potentially detrimental environmental impacts resulting from the listed activities can be mitigated to acceptable levels. **The authorisation is accordingly granted.**

Your interest in the future of our environment is appreciated.

Kind Regards

APPROVED

.....
REGIONAL MANAGER: MINERAL REGULATION
WESTERN CAPE REGIONAL OFFICE
DATE:.....5/7/2024.....

Annexure 12

mineral resources
& energy

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag X9, Rogge Bay, 8012,

7TH Floor, 44 Strand Street, Cape Town, 8012

Tel: 021 427 1058 **Fax :021 427 1046** **Email: Curtis.Wright@dmre.gov.za**

Enquiries: Curtis Wright **Ref No. WC30/5/1/3/2/10339MP**

KIRSTEN EN TULLEKEN VERVOER CC

PO Box 1200

George

6530

Email:jasper@tulleken.co.za

Cell: 079 268 6365

Dear Sir/Madam

APPLICATION OF A MINING PERMIT IN TERMS OF SECTION 27 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002):TO MINE AGGREGATE, STONE, GRAVEL: OVER PORTION 19 OF BUFFELS DRIFT 227 SITUATED IN THE MAGISTERIAL DISTRICT OF GEORGE.

Herewith, attached is your issued mining permit No.08/2024 and sketch plan No.08/2024 for a period ending 03 RD September 2026. Please ensure that the permit is always available and that a copy is kept on site at your mining operation. The said mining permit is subject to the conditions of your approved Environmental Authorisation

The mining operation must be conducted in accordance with your approved Environmental Authorisation. The mining area must be clearly demarcated by means of beacons at its corners and along its boundaries.

Permanent beacons as indicated on the layout plan or a prescribed by the Regional Manager must be firmly erected and maintained in their position throughout the life of the operation.

Further note that:

I. Any authorized person may during office hours without warrant enter the mining area.

II. The required permit holder or person in charge must produce a book or record, statement or data relating to matters dealt with in the Act for inspections.

III. It is an offence to submit inaccurate, incorrect, or misleading information in connection with any matter required to be submitted under the Act.

It must be borne in mind that in terms of section 98, any person convicted of an offence in terms of this act will be liable for a penalty which includes a fine or imprisonment or both, as stated in section 99 of the Act.

Kindly note that your permit is issued and may not be transferred, ceded, let, sublet, alienated or disposed of in any manner whatsoever, but may be encumbered or mortgaged only to attain funding of financing for the mining operation in question subject to the minister's consent.

Yours faithfully

.....

REGIONAL MANAGER:

MINERAL REGULATION

WESTERN CAPE REGION

DATE: 4/9/2024

DMRE 58

mineral resources
& energy

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

DEPT. OF MINERAL RESOURCES AND ENERGY
PRIVAATSAK / PRIVATE BAG X9
04 SEP 2024
Official Office Stamp
ROGGEBAAI 8012
REGIONAL MANAGER
WESTERN CAPE REGION

MINING PERMIT

[issued in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)]

Permit No.	08/2024	Region	Western Cape
Office reference	WC/30/5/1/3/2/10339MP		

Permission is hereby granted under and subject to the provisions of the Mineral and Petroleum Resources Development Act, 2002 to [full name] KIRSTEN EN TULLEKEN VERVOER CC

Identity number in case of a natural person

In the case of a person other than a natural person please indicate:

Co		Cc	X	Partnership/Joint venture		Other *	

* If other, specify

Registration number of Co. or Cc. 1988/007167/23

To mine for [name of mineral] AGGREGATE,STONE, GRAVEL

On [full name of farm and subdivision, registration division and no.] PORTION 19 OF BUFFELS DRIFT 227

SITUATED IN THE MAGISTERIAL DISTRICT OF GEORGE

as indicated on the attached plan No. 08/2024 signed by the Regional Manager on 04/09/2024

Unless this permit is suspended, cancelled, abandoned or lapses, it shall be valid for a period (not more than two years) which shall extend from the date of issuing to 03/09/2026 and may be renewed for three periods each which may not exceed one year.

This permit does not exempt the holder from the requirements of any provision of any other law or from any restrictive provisions or conditions contained in the title deed of the land concerned, nor does it encroach upon the rights of any person who may have an interest in the land concerned.

Signed at Cape Town this 04th day of September 2024

MINISTER OF MINERAL RESOURCES AND ENERGY

RENEWALS

Official
Office Stamp

First renewal approved for the period from to [not more than one year].

AS WITNESSES

1. _____
(Signature)

_____
MINISTER OF MINERAL RESOURCES AND ENERGY

2._____
(Signature)

DATE: _____

Official
Office Stamp

Second renewal approved for the period to [not more than one year].

AS WITNESSES

1. _____
(Signature)

_____
MINISTER OF MINERAL RESOURCES AND ENERGY

2._____
(Signature)

DATE:_____

Official
Office Stamp

Third renewal approved for the period to [not more than one year].

AS WITNESSES

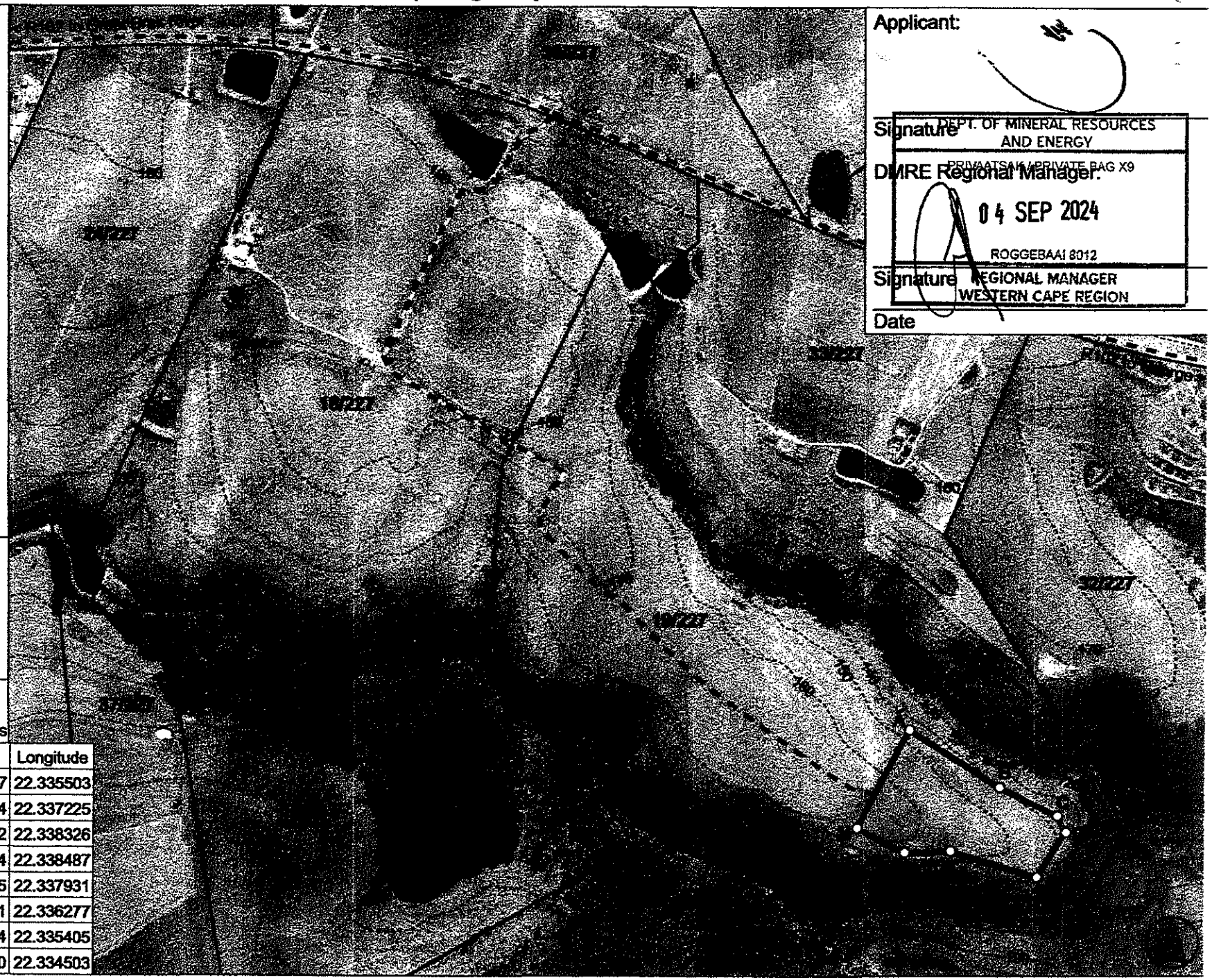
1. _____
(Signature)

_____
MINISTER OF MINERAL RESOURCES AND ENERGY

2._____
(Signature)

DATE:_____

Regulation 2.(2) Plan: Located on Portion 19 of Buffels Drift 227 (George RD)



Applicant:

Signature

DMRE Regional Manager:

DEPT. OF MINERAL RESOURCES AND ENERGY
PRIVAATSAK / PRIVATE BAG X9
04 SEP 2024
ROGGEBAAI 8012
REGIONAL MANAGER
WESTERN CAPE REGION

Signature

Date

Mining Permit area = 4.9775 ha

Date: December 2023
Aerial image:
GoogleEarth (14/05/2022)
Boundary information:
SA Surveyor General
www.BoundaryHunter.co.za
Ryk Taljaard (PGP1440)

Coordinate system/s:
Y & X - WG23 (m)
Lat & Long - WGS84 Decimal Degrees

D	Y	X	Latitude	Longitude
A	61381.25	3765203.52	-34.012107	22.335503
B	61221.48	3765304.22	-34.013024	22.337225
C	61119.50	3765354.28	-34.013482	22.338326
D	61104.42	3765383.34	-34.013744	22.338487
E	61155.24	3765462.53	-34.014455	22.337931
F	61308.30	3765417.60	-34.014041	22.336277
G	61388.89	3765420.62	-34.014064	22.335405
H	61472.42	3765377.47	-34.013670	22.334503

Annexure 13

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

FINAL BASIC ASSESSMENT REPORT

and

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (NEMA) IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY A MINING PERMIT APPLICATION IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA).

DMRE Reference Number: WC30/5/1/3/2/10339MP

Type of application: Application for a mining permit

Applicant: Kirsten & Tulleken Vervoer CC

Property: Portion 19 of the farm Buffels Drift 227

Magisterial District: George

Local authority: George Municipality

Date: 18 June 2024

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 a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

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

THE OBJECTIVE OF THE BASIC ASSESSMENT PROCESS
(As described in Appendix 1 of the EIA Regulations, 2014)

The objective of the basic assessment process is to, through a consultative process–
(a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

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

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

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:
- (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
- (ii) the degree to which these impacts—
  - (aa) can be reversed;
  - (bb) may cause irreplaceable loss of resources; and
  - (cc) can be managed, avoided or mitigated;

(e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
- (i) identify and motivate a preferred site, activity and technology alternative;
- (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
- (iii) identify residual risks that need to be managed and monitored.

NOTE ON THE SCOPE AND CONTENT OF BASIC ASSESSMENT REPORTS AND THE CONTENTS OF ENVIRONMENTAL MANAGEMENT PROGRAMMES

The scope and content of Basic Assessment Reports and the contents of Environmental Management Programmes are specified in Appendix 1 and Appendix 4 of the Environmental Impact Assessment Regulations, 2014 (as amended). Where relevant, extracts from the EIA Regulations, 2014 are shown in italics below each heading in this report.

Note: The EIA Regulations were amended in GN 517 published on 11 June 2021.

BAR & EMPr

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

PART A: BASIC ASSESSMENT REPORT

1. CONTACT PERSON & CORRESPONDENCE ADDRESS

1.1 Details of the Environmental Assessment Practitioner

ITEM	CONTACT DETAILS
Name of the EAP:	Stephen Davey
Company:	Klipberg Consulting (Pty) Ltd
Postal address:	PO Box 46, Darling, 7345
Mobile no:	082 782 3727
E-mail:	sdavey@klipberg.co.za
Web site:	www.klipberg.co.za

1.2 The expertise of the EAP, including a curriculum vitae

A summarised CV of the EAP (including qualifications and past experience) is provided below:

EDUCATION

M. Phil (Environmental Management)	University of Cape Town	2001
B.Sc Honours (Geochemistry)	University of Cape Town	1984
B.Sc (Geology)	University of Cape Town	1981

PROFESSIONAL EXPERIENCE

Klipberg Consulting (Pty) Ltd (2013 – Present)
Klipberg Consulting (Pty) Ltd was started by the EAP during 2013.

Klipberg Consulting provides geological and environmental consulting services with a focus on prospecting and mining applications.

Amathemba Environmental Management Consulting CC (2001 – 2013)
The EAP was a founder member.

Projects included:

- EIA processes for the closure of the Brackenfell Landfill Site, the construction of a Refuse Transfer Station in the Oostenberg area and the upgrading of the Bellville Wastewater Treatment Works – for the City of Cape Town.
- Sustainable Coastal Management Plans for the City of Cape Town.
- EIAs and EMPs for phosphate, silica sand, diamond & heavy mineral sands Prospecting Right applications.
- EIAs and EMPs for numerous Mining Right applications (sand, gravel, aggregate and clay i.e. construction materials) in the Western Cape Province.
- EIA for the Mothae Diamond project in Lesotho.

- Guest lecturer for a module in Environmental Management for Geography (Honours) students at the University of the Western Cape between 2004 and 2020.

Billiton Argentina and Billiton Ecuador (1994 - 1999) - Exploration Manager

Gencor (1991 - 1993) - Regional and International Exploration

Impala Platinum and Karee Platinum Mine (1985 – 1990) - Mine Geologist and Chief Geologist

Anglovaal Exploration (1981 – 1983) – Field Geologist (Barberton)

PROFESSSIONAL REGISTRATION & AFFILIATIONS

- Registered as an Environmental Assessment Practitioner (EAP) by EAPASA (Registration Number 2019/159)
- Registered as a Professional Natural Scientist - (Registration Number 400087/88) with the South African Council for Natural Scientific Professions (SACNASP)
- Fellow of the Geological Society of South Africa (GSSA)
- Member of the International Association for Impact Assessment (IAIAsa).

2. LOCATION OF THE ACTIVITY

Full particulars of the applicant:

ITEM	CONTACT DETAILS
Name of the Applicant:	Kirsten & Tulleken Vervoer CC
Tel no:	044 875 8035
Fax no:	044 875 0273
Cellular no:	079 268 6365
Contact person:	Jasper van der Westhuizen
E-mail address:	jasper@tulleken.co.za
Postal address:	PO Box 1200, George, 6530
Physical address:	Binnestraat 26, George Industria

Registered description of the land:

Registered Property Name:	Portion 19 of the farm Buffels Drift 227
Local Authority:	George Municipality
Magisterial District:	George
Extent of the property:	55.1787 hectares
Extent of mining permit application area:	4.9775 hectares
Landowners:	Gerhard Adam Barnard & Marian Lyn Barnard
LPI 21-digit code:	C02700000000022700019
Distance and direction from the nearest town	The site is located 13 km south-west of the centre of George.

3. PLANS

The location of the farm is shown in **Figure 1**, the plan of the land in **Figure 2,** the mining layout plan in **Figure 3** and the rehabilitation plan in **Figure 4**.

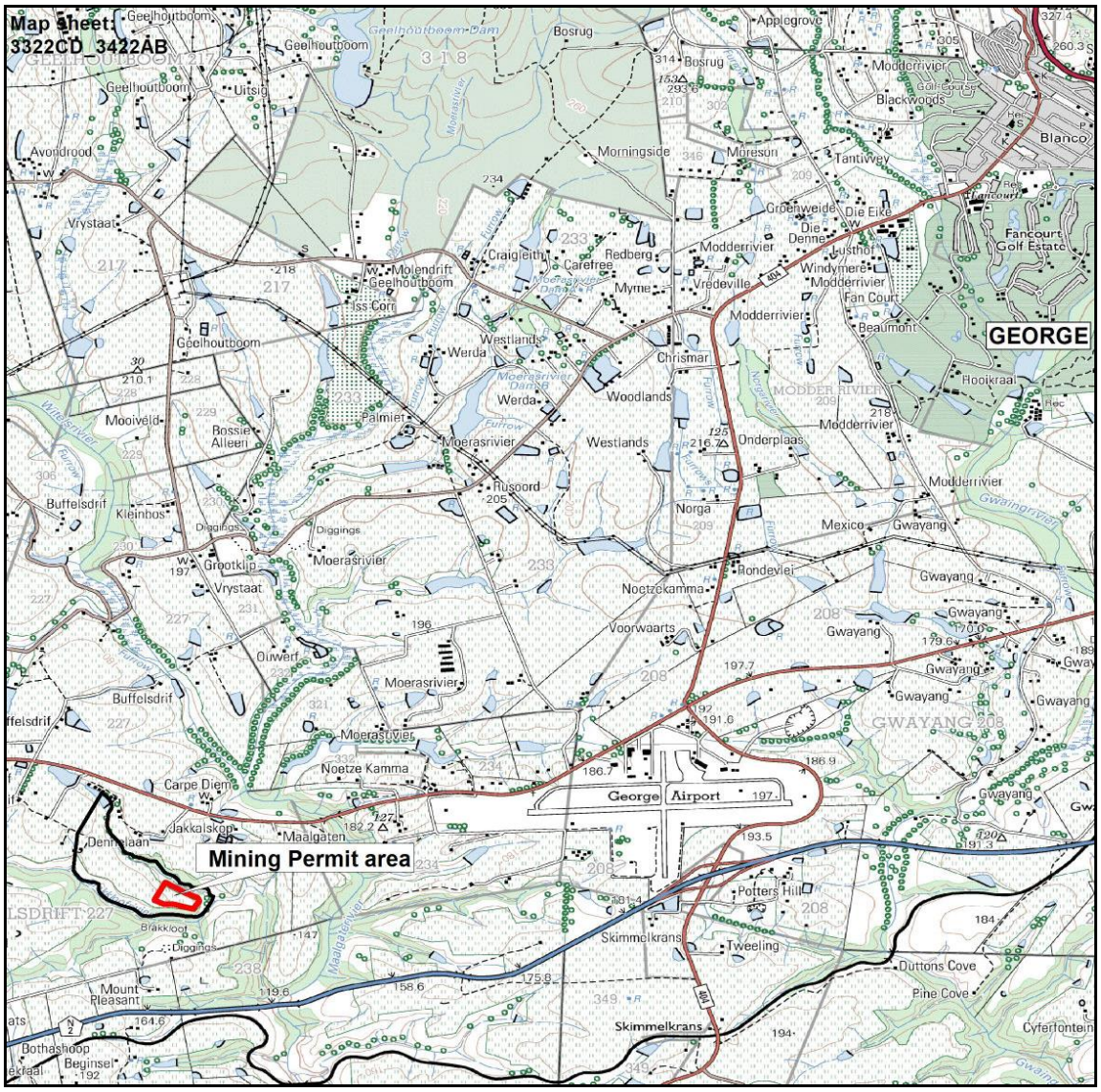
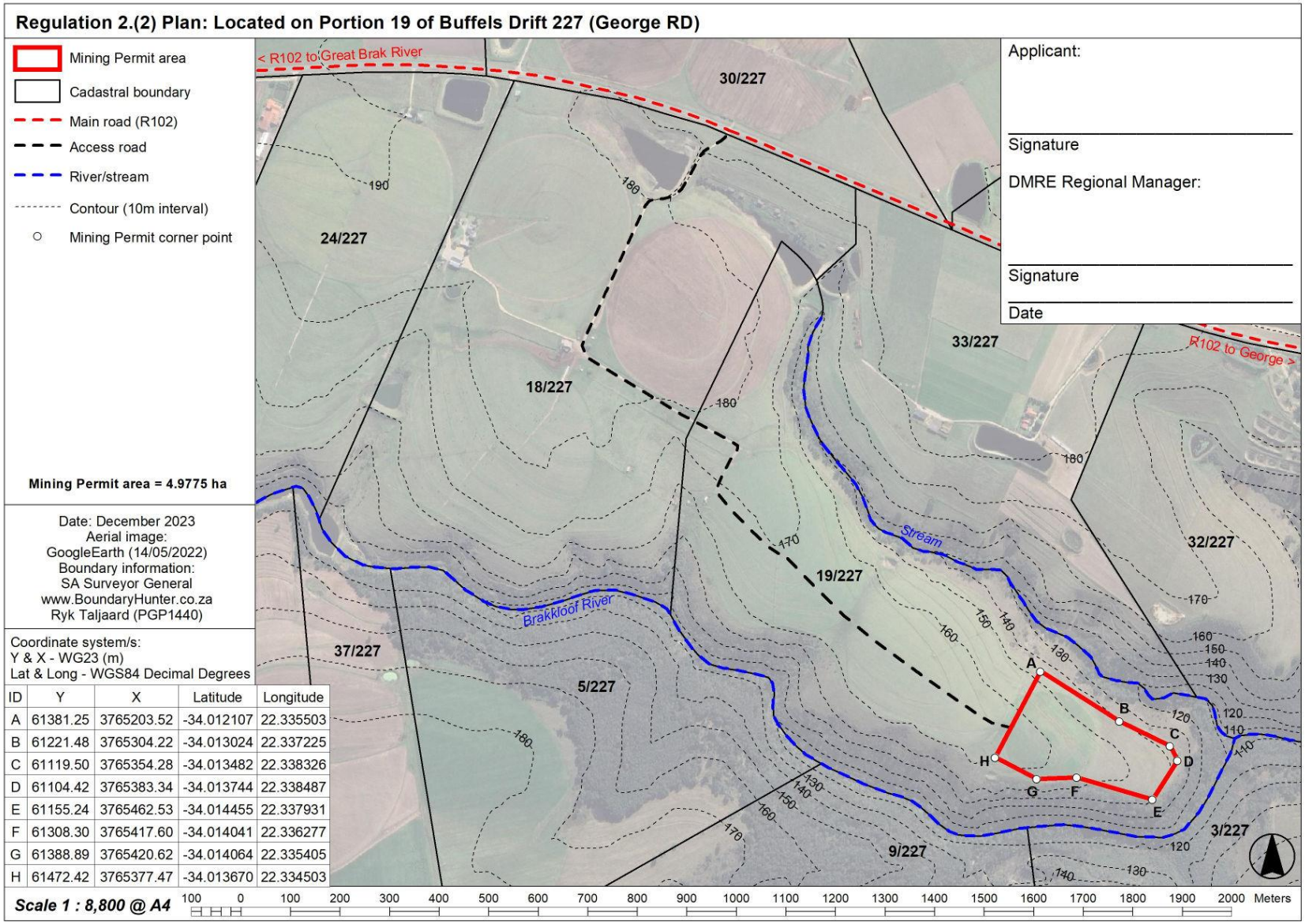


Figure 1: Locality plan



ID	Y	X	Latitude	Longitude
A	61381.25	3765203.52	-34.012107	22.335503
B	61221.48	3765304.22	-34.013024	22.337225
C	61119.50	3765354.28	-34.013482	22.338326
D	61104.42	3765383.34	-34.013744	22.338487
E	61155.24	3765462.53	-34.014455	22.337931
F	61308.30	3765417.60	-34.014041	22.336277
G	61388.89	3765420.62	-34.014064	22.335405
H	61472.42	3765377.47	-34.013670	22.334503

Figure 2: Plan of the land

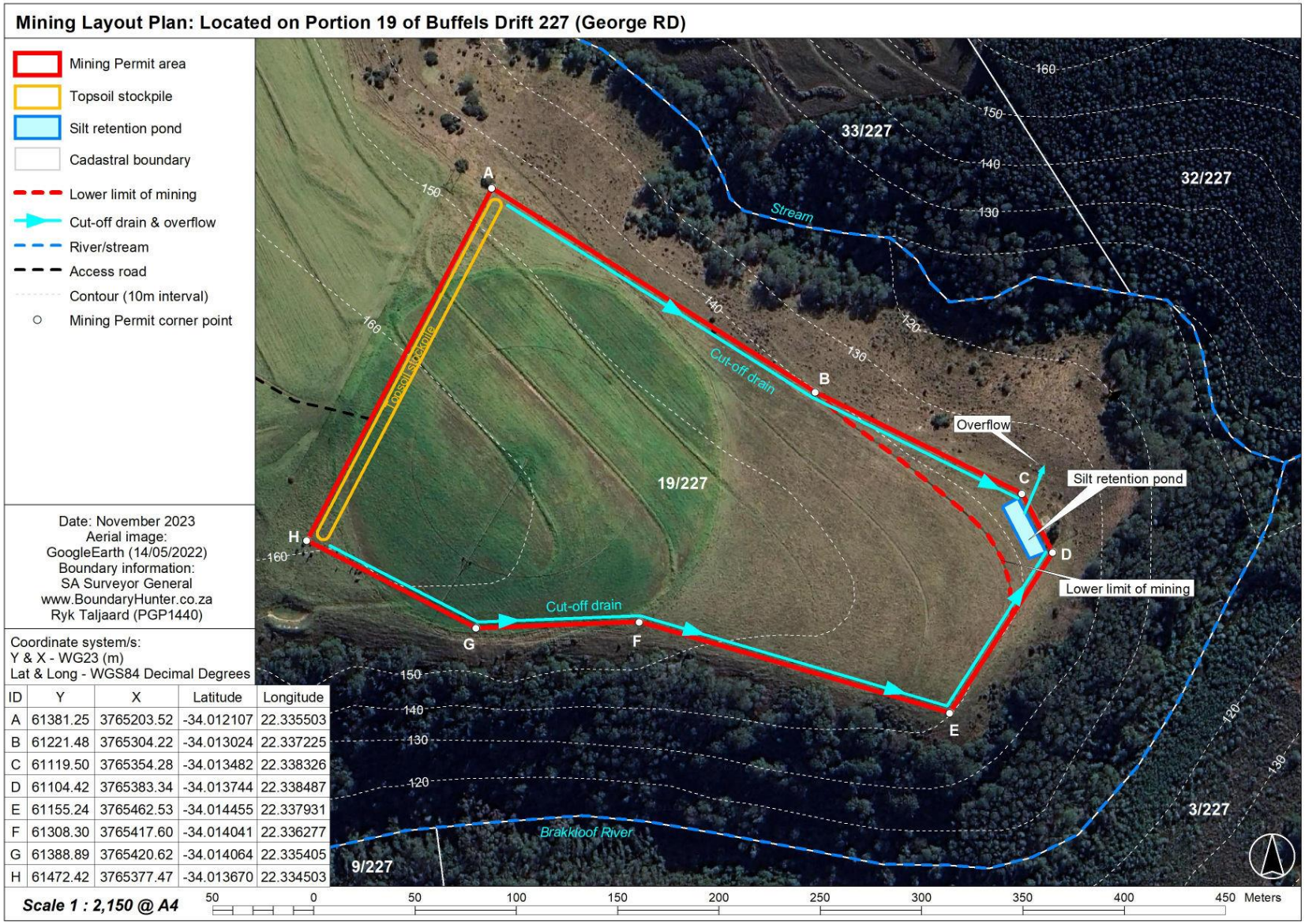


Figure 3: Mining layout plan

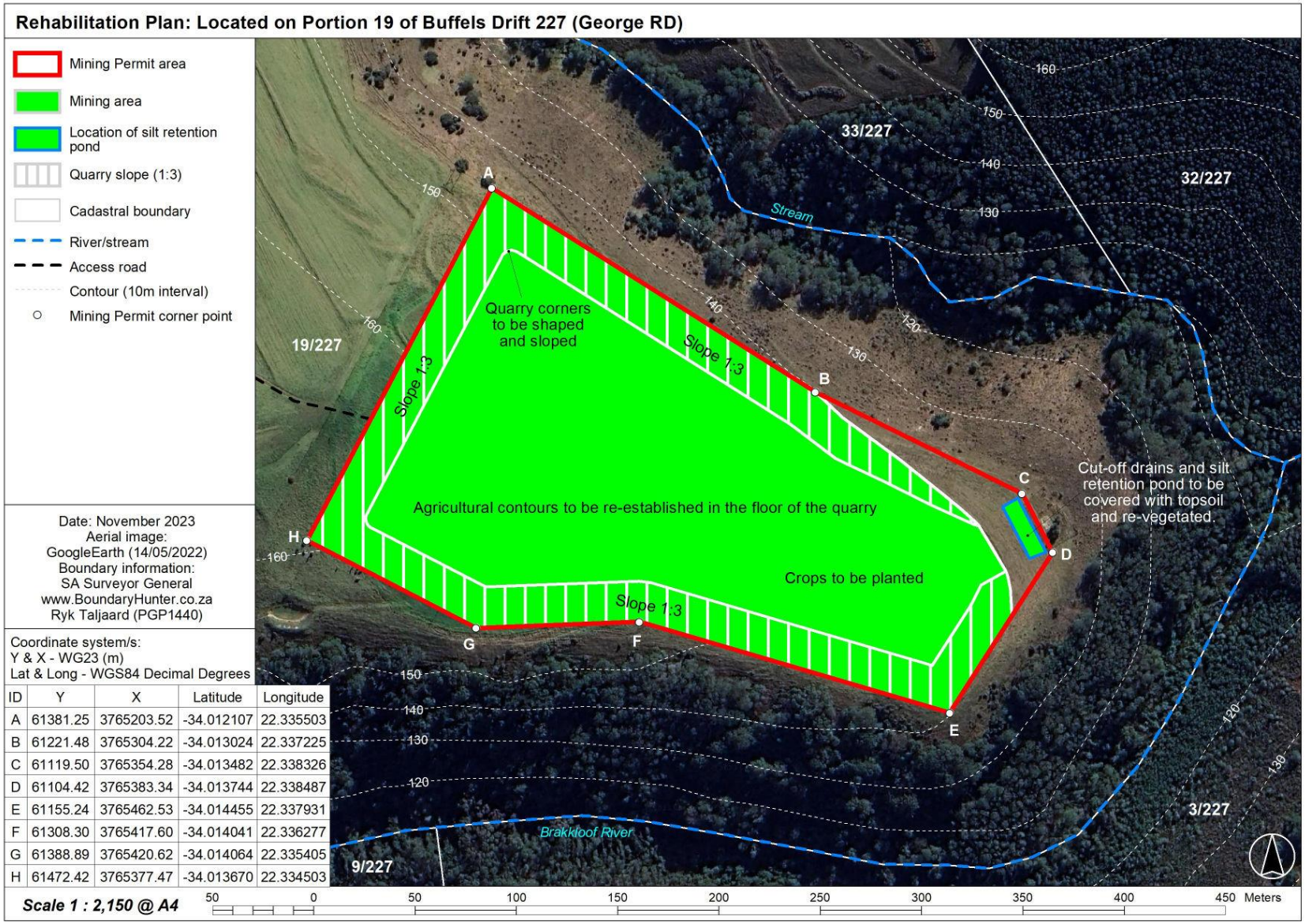


Figure 4: Rehabilitation plan

4. DESCRIPTION OF THE PROPOSED ACTIVITIES

4.1 The scope of the proposed activities

4.1.1 Listed and specified activities applied for

Listing Notice	Activity no.	Description
LN1	21	Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the mining permit.

Note: The EIA Regulations were amended on 11 June 2021 in GN 517.

Activity 21 in LN1 includes all listed activities in LN1 or LN3 that will be required to exercise the mining right.

Activity 22 in LN1 has been deleted. This was previously for the decommissioning of any activity requiring a closure certificate in terms of Section 43 of the Mineral & Petroleum Resources Development Act, 2002 (Act 28 of 2002). Mine closure is now covered by means of the "Financial Provisioning Regulations".

4.1.2 Description of the activities to be undertaken

The extent of the proposed mining permit area is 4.9775 hectares. The site is located on transformed farm land that is used for growing vegetables as well as pasture crops.

It is proposed to mine weathered granite gravel (aggregate) that will be used by customers for road construction and maintenance projects as well as for other construction and development projects in the area.

The site is located on transformed farm land **(see Figure 3)**.

The proposed mining sequence is as follows:

- Overburden clearing and stockpiling of topsoil.
- Loading of weathered granite gravel/aggregate into trucks using an excavator.
- Recording volumes in trucks.
- Final rehabilitation of slopes to not more than 1:3.
- Shaping the floor.
- Replacing top soil, re-establishing agricultural contours, stabilising the soil surface and rehabilitating the area so that it can continue to be used for agricultural purposes.
- Concurrent mining and rehabilitation is planned so that any one time the size of the active mining area should not be larger than one hectare.

5. POLICY & LEGISLATIVE CONTEXT

Applicable legislation, policies, plans, guidelines, spatial tools and municipal IDPs that are applicable	Reference where applicable	How the proposed activity complies with and responds to the policy and legislative context
National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998).	This BAR and EMPr.	The application for environmental authorisation, the compilation of this Basic Assessment Report and the Public Participation Process are required in terms of NEMA.
EIA Regulations, 2014	This BAR and EMPr.	The listed activities that are triggered determine the Environmental Authorisation (EA) application process to be followed.
The "Financial Provisioning Regulations" published in terms of NEMA in GN 1147 of 20 November 2015 (as amended)	The required reports have been included as supporting documents together with the BAR & EMPr.	The BAR must include any specialist reports, an EMPr & the plans, report and calculations contemplated in the "Financial Provisioning Regulations".
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)	Sections 9.2.6 and 11.3	There are no mapped Critical Biodiversity Areas on the site.
National Environmental Management: Waste Act, 2008 (Act 59 of 2008)	Sections 11.6 and 18.15	An integrated waste management approach that incorporates the waste management hierarchy is included in the EMPr.
National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004). National Dust Control Regulations in GN R827 of 1 November 2013	Sections 11.4, 18.12 and 19.3	Dust control measures are included in the EMPr
National Water Act, 1998 (Act 36 of 1998)	Sections 10.3 and 11.2	There are no wetlands or watercourses on the mining permit area. However, there are river valleys within 100 metres of the site. A Section 21 (c) and (i) water use application will be submitted to the BOCMA.
Mineral and Petroleum Resources Development Act, 2008 (Act 28 of 2002)	Section 4	An application for a mining permit in terms of section 27 was submitted to the DMRE. This determines that the DMRE is the Competent Authority (CA) for this NEMA application.
Mine Health and Safety Act, 1996 (Act	Sections 11.4 and 11.5	The objects of the MHSA are to

29 of 1996)		protect the health & safety of mine workers. All mining activities described in this report must comply with the MHSA.
Western Cape Noise Control Regulations (PN 200/2013) of 20 June 2013	Sections 11.5 and 18.13	Noise control measures are included in the EMPr
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	Sections 10.1 and 11.7	A final comment in terms of the NHRA was provided by Heritage Western Cape.
Promotion of Administrative Justice Act, 2000 (Act 3 of 2000)	Decision by the Competent Authority	Gives effect to section 33 of the Constitution that requires that "Everyone has the right to administrative action that is lawful, reasonable and procedurally fair"
Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA)	Section 6	Consent use in terms of the George Municipal Planning By-law, 2015 is required to allow a quarry on a property that is zoned as Agriculture 1.
George Municipality SDF	Section 6	The "Need & Desirability" of the project is described with respect to the George SDF.
George Municipality Integrated Development Plan (IDP)	Section 6	The "Need & Desirability" of the project is described with respect to the IDP.
DEA and DEA&DP Guidelines e.g. Need & Desirability, Public Participation, Using Specialists and Alternatives.	This BAR and EMPr	The relevant DEA and DEA&DP guidelines were used to compile this report, conduct the Public Participation Process (PPP) process and to guide specialist input.

6. NEED & DESIRABILITY OF THE PROPOSED ACTIVITIES

Before completing this section, the following documents were consulted: The DEA&DP's Circular EADP 0028/2014 on the "One Environmental Management System" and the EIA Regulations, 2014 and subsequent circulars and guidelines as well as the Guideline on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2010 published by the national Department of Environmental Affairs on 20 October 2014.

The "Need & Desirability" of the project is described by answering the same questions that are required by the Western Cape Provincial Department of Environmental Affairs & Development Planning (DEA&DP).

Q1. Is the activity permitted in terms of the property's existing land use rights?	Yes	No ✓
Explain: The property is zoned as Agriculture 1 by the George Municipality. Land use approval from the George Municipality is required.		

Q2. Will the activity be in line with the following?		
(a) Provincial Spatial Development Framework (PSDF 2014)?	Yes ✓	No
Explain: The PSDF (2014) promotes sustainable farming and mining (i.e. activities that generate positive socio-economic returns and do not pose significant risks to the environment). The applicable policy is listed below. Policy R3: Safeguard the Western Cape's Agricultural and Mineral Resources and manage their sustainable use: 1. Record unique and high potential agricultural land in municipal SDFs, demarcate urban edges to protect these assets, and adopt and apply policies to protect this resource. 2. Record the location of mineral deposits and known reserves of construction materials in municipal SDFs, and introduce and apply land use policies that reserve these assets for possible use (subject to environmental authorization). Response The proposed mining permit area is located on transformed agricultural land.		
(b) Urban edge / Edge of built environment?	Yes ✓	No
Explain: The property is located outside the urban edge. The proposed mining project will have no impact on the urban edge.		
(c) Integrated Development Plan (IDP) of the Municipality	Yes ✓	No
Explain: The approved George IDP (5th generation IDP for 2022 - 2027) has the following strategic objectives: SO1: Develop and grow George SO2: Safe, clean and green SO3: Affordable quality services SO4: Participative partnerships SO5: Good governance and human capital		

The gravel mine will contribute to local economic development and employment. The gravel is required for construction and development projects that are needed to help diversify the economic base of the municipality. The weathered granite gravel resources of the site have the potential to generate revenue and employment opportunities.

The gravel mine will support SO1 because gravel is required for construction and development.

(d) Spatial Development Plan / Structure Plan of the Municipality	Yes ✓	No

Explain:
The final George Municipal SDF 2023/2027 (dated May 2023) provides no information about potential sources of construction material for infrastructure development in the municipal area.

According to SDF Theme B (Economic Growth) in Policy 4.5.2.2 Primary Sector economic activities i.e. Agriculture, Forestry, Fisheries, Mining & Quarrying Policy are supported.

Manage rural land use in terms of the Western Cape Government's rural development guidelines and the Spatial Planning Categories (SPC) identified therein

a) In line with Western Cape Government's guidelines for rural land use development, new investment in rural areas should not:
i. Have significant impact on biodiversity;
ii. Alienate or compromise unique or high value agricultural land;
iii. Compromise existing farming activities;
iv. Compromise the current and future use of mineral resources;
v. Be inconsistent with cultural and scenic landscapes within which it is situated;
vi. Involve extensions to the municipality's reticulation networks;
vii. Impose real costs or risks to the municipality delivering on their mandate.

(e) Environmental Management Framework (EMF) adopted by the DEA&DP	Yes N/A	No

Explain:

There is no approved EMF adopted by the DEA&DP for this area

Q3. Is the proposed land use considered within the timeframe intended by the existing approved Spatial Development Framework (SDF)?	Yes…..✓	No

Explain:

Gravel mining and subsequent agricultural land use is consistent with the George Municipality's SDF. There are no specified time frames.

Q4. Should development of the area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time?	Yes…..✓	No

Explain:

Gravel is needed for construction and development. This site is conveniently located to provide gravel to the market in the George area.

Q5. . Does the community/area need the activity and the associated land use concerned (is it a societal priority)?	Yes…..✓	No

Explain:

Gravel is a basic material that is needed for construction and development. If gravel is not obtained from this site it will still need to be obtained from somewhere else.

Q6. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?	Yes…..N/A	No
Explain: No municipal services are required at all for this proposed small-scale mining project.		

Q7. Is this development provided for in the infrastructure planning of the municipality	Yes…..N/A	No
Explain: The municipality does not need to provide any services.		

Q8. Is this project part of a national programme to address an issue of national concern or importance?	Yes…..	No ✓
Explain: No, it is only a mining permit application. However, it will support construction and development projects in the George area.		

Q9. Do location factors favour this land use (associated with the activity applied for) at this place?	Yes…..✓	No
Explain: The resources on this farm are favourably positioned to supply the market in the George area.		

Q10. Will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	Yes…..	No ✓
Explain: The area is not located within a mapped Critical Biodiversity Area (CBA). Furthermore, there are no sensitive heritage resources located on the site. The activity will take place on previously transformed farm land. The site is located within 100m of the Brakkloof River and a specialist aquatic biodiversity compliance statement has been prepared.		

Q11. Will the development impact on people's health and wellbeing (e.g. in terms of noise, odours, visual character and sense of place, etc)?	Yes…..✓	No
Explain: There will be noise and dust impacts occurring over a short term duration and limited extent during the operational life of the mine. Once the area has been rehabilitated the area will continue to be used for agricultural purposes and will fit in with the existing rural character and sense of place.		

Q12 Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?	Yes…..	No ✓
Explain: There will be no unacceptable opportunity costs.		

Q13 Are there any cumulative impacts (positive and negative) of the proposed land use associated with the activity applied for, be?	Yes…..	No ✓
Explain: There will be no significant cumulative impacts.		

Q14. Is the development the best practicable environmental option for this land/site?	Yes…..✓	No
Explain: The land has already been transformed. The area will be rehabilitated so that it can continue to be used for farming activities.		

Q15. What will the benefits be to society in general and to the local communities?	Yes…..✓	No
Explain: Gravel will be provided for construction and development projects.		

Q16 Any other need and desirability considerations related to the proposed activity?	Yes…..	No ✓
None		

Q17. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account:
Explain: The principles of Integrated Environmental Management (EIM) as set out in s23 of NEMA have been considered in this environmental assessment and EMPr. Potential impacts on the environment, socio-economic conditions, and cultural heritage have been assessed, and steps have been taken to mitigate negative impacts, and enhance positive impacts. Adequate and appropriate opportunity has been provided for public participation. Environmental attributes have been considered, and environmental management practices have been identified and established to ensure that the proposed activities would proceed in accordance with the principles of IEM.

Q18. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account:
Explain: In accordance with the s2 NEMA Principles this assessment has placed people and their needs at the forefront of its concern. The importance of sustainable development, in terms of social, environmental and economic factors has been carefully considered. The participation of all potential interested and affected parties has been encouraged. The social, economic and environmental impacts of activities, including disadvantages and benefits, have been considered, assessed and evaluated. Recommendations made are considered to be appropriate in the light of this consideration and assessment. The applicant is aware that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or health effects must be paid for by those harming the environment.

7. A MOTIVATION FOR THE PREFERRED SITE, ACTIVITY & ALTERNATIVE

Kirsten & Tulleken Vervoer requires viable mineral resources in order to sustain its business and to provide gravel and sand for construction and development projects in the George and Garden Route area.

Kirsten & Tulleken Vervoer is continually evaluating alternative sites and locations in the area. Many of these alternatives are rejected at an early stage due to the identification of potential fatal flaws e.g. the mineral resources do not comply with customer specifications or the site is located in an environmentally sensitive area.

The mining permit area was selected because it is not located in a sensitive environment (i.e. it is not located in a Critical Biodiversity Area and there are no concerns about heritage resources).

The core business of Kirsten & Tulleken Vervoer is to provide construction materials and so when an area is investigated the primary focus is to evaluate the viability of mining the mineral resource from a financial, technical and environmental point of view.

Kirsten & Tulleken Vervoer is not the land owner, so it would not be realistic for Kirsten & Tulleken Vervoer to propose another type of activity on the land e.g. for housing or commercial or industrial activities.

The land will be rehabilitated so that it can continue to be used for agricultural purposes.

The “preferred alternative” takes into account location alternatives, activity alternatives, layout alternatives, technology alternatives and operational alternatives.

8. PUBLIC PARTICIPATION PROCESS

8.1 Details of the public participation process

The public participation process has been conducted according to the requirements as prescribed in Regulations 40 to 44 of the EIA Regulations, 2014. Full details of the public participation process conducted including copies of all supporting documents (e.g. the information provided to interested & affected parties and the comments received) are included in **Appendix 1**.

The landowners (Mr & Mrs Barnard) provided consent for the application on 4 December 2023.

The notice and a Background Information Document (BID) were e-mailed on 7 March 2024 to the authorities and interested & affected parties including the neighbours and the Ward Councillor.

A bilingual notice (English and Afrikaans) was placed in the George Herald of 7 March 2024.

A site notice was placed at the entrance to the site on 7 March 2024.

Authorities and Interested and Affected Parties were requested to provide initial comments by 12 April 2024.

When the BAR & EMPr had been prepared it was made available on the public participation page of the EAP's website: i.e. www.klipberg.co.za .

A hard copy was placed in the George Public Library.

Notices were e-mailed to the Authorities and the Registered Interested & Affected Parties on 29 April 2024. Authorities and Interested and Affected Parties were requested to provide comments on the BAR & EMPr by 3 June 2024.

8.2 Summary of the issues raised by interested & affected parties

The issues and concerns that were raised during the public participation process to date as well as the responses to these issues are summarised in **Table 1** (starting on the next page):

Table 1: Comments – response summary table

NAME	ISSUES AND CONCERNS	RESPONSE
LAND OWNER		
Mr & Mrs GA Barnard *(Portion 19 of Buffels Drift 227)*	The landowner provided consent in a letter dated 23 December 2023.	Noted.
TENANTS:		
DABCO (Pty) Ltd (DA Barnard) *Initial comment*	E-mail dated 12 April 2024 (translated). As a director of DABCO (Pty) Ltd, I request to be registered as an interested & affected party. DABCO (Pty) Ltd rents Portions 19, 18, 24 and RE 332 from GA & M Barnard, with a sub-rental to Skimmelkrans Boerdery. We farm with Dormer sheep & only registered rams are used & also beef cattle. The branching into sheep is busy expanding and the plan is to register a Dormer stud. GA Barnard told us that an application has been submitted for gravel mining, but he did not think it would be within the next 3 years. He also mentioned that the long term plan is mine granite. Concerns, amongst others, are as follows: 1. After I contacted my vet, I was informed about the dust (from mining & trucks that will drive through the farm) that will have a high risk for septic lung infections for sheep & cattle. 2. Biosecurity: Animals will make use of the same tracks to be moved on foot as where the trucks will drive. 3. The disturbance and shock to animals (dust, noise & movement). 4. Dust on grazing land (pasture) – We want to establish pastures on certain parts of the farm that will be specifically used to make bales that will be used to feed animals on Portion 33 as well as on other land that we are renting.	 Registered. Noted. Noted. This application is to mine weathered granite gravel only. The applicant is required to comply with the National Dust Control Regulations, 2013. The applicant will be responsible to ensure that the truck drivers drive slowly and carefully across the farm. Farming activities such as ploughing and planting causes dust & noise and this does not disturb farm animals. Similarly, an earth moving operation will not shock animals. The applicant is required to comply with the National Dust Control Regulations, 2013 and dust control methods are included in the Environmental Management Programme (EMPr).

NAME	ISSUES AND CONCERNS	RESPONSE
	5. General security – at present we keep all gates to the rental land closed if we are not on the farm. The entrance gate will now need to be open during the day so that the trucks can move through.	A small-scale well controlled operation is planned by the applicant and there will be no need for the gates to be open throughout the day.
	6. Security (i.e. theft) is a big concern with different persons who may gain access to the farm and the mine.	The only persons who will gain access to the farm will be the applicant's employees (operators and truck drivers). There will only be 2 or 3 employees on the farm at any one time during normal operations and security will be well controlled by the applicant.
	As per the maps in Background Information Document that my father (co-Director of DABCO (Pty) Ltd) received, the road to the proposed mine will go through the pastures and this will make the used of the existing and planned irrigation points impossible.	The applicant can make of an alternative access track on the outside of the pivot irrigation circles that will not interfere with pastures or irrigation. Day to day access arrangements can easily be discussed directly between the applicant and DABCO (Pty) Ltd in order to minimise the impacts on farming activities.
	GA Barnard mentioned that if the mine is approved that the planned road will go next to the Brakkloof River. In that case the irrigation points will not be affected.	No, there is no planned road next to the Brakkkloof River.
DABCO (Pty) Ltd (DA Barnard) *Comment on BAR & EMPr*	E-mail dated 3 June 2024. Please see attached our response from DABCO (PTY) LTD in yellow. The second attachment is a letter from our veterinarian (Dr M. Strydom). The response items in yellow are listed below:	
	Noted, if a further application for the mining of granite would be submitted while the gravel is mined, we assume that the same public participation process will have to be followed? The reason why we are referring to the mining of granite is because Andre Tulleken and Jasper told us in person that they will submit an application to mine granite while they are in the process of mining gravel, should the application to mine weathered granite gravel be approved.	This application is only for the mining of gravel.
	Dust: Will this be monitored and by whom?	Dust mitigation & monitoring is described in the EMPr. If dust monitoring is required by the Air Quality Officer at the Municipality, then

NAME	ISSUES AND CONCERNS	RESPONSE
		dust-fall monitoring will be done by an air quality specialist.
	Please see attached a letter from my vetinarian, Dr. Muller Strydom from George Animal Hospital, regarding the effect of dust on animals.	The issues raised by the vet have been addressed in the EMPr.
	I know that bio security sounds stupid, but for background: Foot and mouth disease has broken out in the Humansdorp area and is spreading. The gravel trucks will pass through areas that where cattle graze. Currently our farm is under "lockdown" and all visitors need to follow biosecurity rules. If a truck theoretically passes through an area that has infected animals, it could pass diseases on to our animals. It can destroy our business. Trucks will have to be sanitised or disinfected before entering the property.	Noted, DABCO's own farm trucks would also need to be sanitised or disinfected before entering the property in that case.
	Ploughing and planting are not daily activities and when we do cultivate fields, animals are moved away from the area being worked in. Trucks will make use of the same route day in and day out, thus the dust and noise factor will be much greater than with normal daily farming activities.	Noted.
	If dust becomes a problem, will the applicant wet the access roads or provide alternative solutions to minimize the effect?	Dust mitigation methods are included in the EMPr.
	Access gates needs to be closed at all times. Truck drivers will need to open and close gates every time they move through them. This should stop cattle accidentally getting onto public roads.	Agreed.
	Great news, please show proposed new route.	The new route will simply go on the outside of the pivot irrigation circles.
	Also, the gravel road leading to the main road (R102) leads over a dam wall which is quite narrow. With daily traffic of multiple trucks, who will be responsible for general road maintenance and who will be responsible if the dam wall breaks? …….etc. etc……	This is an existing road also used by large farm trucks. Kirsten & Tulleken will be responsible for general road maintenance. It is very unlikely that the dam wall will break.
	All of these factors have major financial effects directly and indirectly. We bought these specific pivots from GA Barnard in 2023 and as mentioned before, the road wasn't going to interfere with pastures. If pivots will now move/be reduced in size, the arable land size will be reduced.	The pivots will not be moved or reduced in size.
Skimmelkrans Boerdery BK (George Kuyler)	Letter dated 12 April 2024. We would herewith like to be registered as an interested and affected parties. We are	 Noted & registered.

NAME	ISSUES AND CONCERNS	RESPONSE
Initial comment	currently leasing the land in question. We operate a dairy farm milking more than a thousand cows. We would like to have more information on the project. Our concerns are (among others): • Access roads. • Traffic. • Dust settling on pastures. • Disturbance of cattle. • Handling of cattle grazing on access roads as well as the risk of cattle getting onto public roads. • Bio security risks. • Access control as well as monitoring of parties visiting and or working on site (for farm security reasons).	See the responses to DABCO (above). These concerns have been addressed in more detail in the Basic Assessment Report (BAR) & EMPr.
Skimmelkrans Boerdery BK (George Kuyler) *Comment on BAR & EMPr*	E-mail dated 22 May 2024. Thank you for the detailed response. To make things easier I commented on the pdf that you sent. Once again on record we do not want to be difficult, just want to make sure that if/when the mine starts concerns, and best operating practices are in place. See attached comments on your PDF. Good luck with your process. The inserted comments are summarised below: *This application is to mine weathered granite gravel only.* Noted, if an further application for the mining of granite would be submitted wile the gravel is mined. We take it that the same public participation process will have to be followed. *The applicant is required to comply with the National Dust Control Regulations, 2013.* Will this be monitored and by whom? *The applicant will be responsible to ensure that the truck drivers drive slowly and carefully across the farm.* I know that bio security sounds stupid, but for background etc..	It is not easier to receive comments inserted directly into a pdf as a call-out. These comments cannot be read in the final hard copy reports submitted to the DMRE. Noted. Thank you. A further application would require a totally new public participation process. If dust monitoring is required by the Air Quality Officer at the Municipality, then dust-fall monitoring will be done by an air quality specialist. This is exactly the same comment as from DABCO (see the response above).

NAME	ISSUES AND CONCERNS	RESPONSE
	Farming activities such as ploughing and planting causes dust & noise and this does not disturb farm animals. Similarly, an earth moving operation will not shock animals. Noted. *The applicant is required to comply with the National Dust Control Regulations, 2013 and dust control methods are included in the Environmental Management Programme.* If dust becomes a problem, will the applicant wet the access roads to minimize the effect. The remaining comments are identical to comments the comments made by DABCO.	Noted. Yes, this is one of the mitigation methods that could be considered. Noted.
NEIGHBOURING LAND OWNERS:		
Mr & Mrs GA Barnard *(Farm 18/227)*	Consent provided (see above).	Noted.
Mr AD Barnard *(Farm 33/227)* *Initial comment:*	E-mail dated 12 April 2024 (translated). As a direct neighbour, I request to be registered as an interested & affected party. We farm with beef cattle and now branching into Dormer sheep with the goal of establishing a registered stud. Furthermore, I rent, as a bonafide farmer and in partnership with my son, DABCO (Pty) Ltd, and with a sub-rental to Skimmelkrans Boerdery, Portions 19, 18, 24 and RE 332 from GA & M Barnard. Concerns, amongst others, are as follows: 1. The visual impact from my farm. 2. The only portion directly bordering the proposed mine where natural bush is present and various birds and animals have made their home. 3. Farm safety in totality. 4. The disturbance and shock on animals especially during lambing and calving season.	 Registered. Noted. Noted. The proposed mine is on the other side of a wooded river valley. The river valleys closest to the proposed mining area are heavily infested with black wattle, blue gums and other invasive alien trees. Very few workers and drivers will gain access to the farm and mine and security will be well controlled by the applicant. An earthmoving operation will not result in the disturbance and shock to farm animals.

NAME	ISSUES AND CONCERNS	RESPONSE
	5. Dust on pastures, our house and washing etc.	The applicant is required to comply with the National Dust Control Regulations, 2013 and dust control methods are included in the EMPr.
	6. Within the application, with reference to discussions with Andre & Jasper of KTV there will be an application within 5 years for a granite mine where explosives, crushers etc. will be involved.	This application is to mine weathered granite gravel only.
	7. In the past, with such dynamite explosions, significant damage is caused to brick structures – i.e. houses, stores and cement dams. Our insurance company has already put in writing that they will not cover such damages.	Not applicable. No blasting will take place.
	8. The noise factor.	The applicant will be required to comply with the Western Cape Noise Control Regulations, 2013.
	9. The destruction of agricultural land in relation to food security.	The area will be rehabilitated so that it can continue to be used for agricultural purposes.
	10. Concern: Have any studies with respect to visual impact been done?	No. There will be a short-term visual impact during the operational phase of the proposed small-scale mining operation. However, the area will be rehabilitated so that it can continue to be used for agricultural activities.
	11. Safety of workers in relation to the removal of fire wood.	The applicant will ensure that mine workers do not remove any fire wood.
Mr AD Barnard *(Farm 33/227)* *Comment on the BAR & EMPr:*	E-mail dated 3 June 2024 (translated & summarised) I think that it is pathetic, weak and unprofessional when an affected party comments in Afrikaans and you respond in English.	It is a requirement that the reports prepared for the DMRE are in English.
	As long as this remains a gravel mine, although I question that, seeing that Jasper & Andre Tulleken have told me & my son that they will apply for a granite mine where explosives will be used. I believe that the applicant knows what is being planned for the future. In other words this is an absolute false proposal.	Noted; but this application is for a gravel mine only.
	I do not have a problem with a gravel mine, in principle.	Noted, Mr AD Barnard does not have a problem with a gravel mine.
	1. The visual impact from my farm. As long as gravel is mined and the area is rehabilitated back to agriculture then the	This application is for a gravel mine only.

NAME	ISSUES AND CONCERNS	RESPONSE
	visual impact will be short term. However if the application is for a granite mine using explosives then there will definitely be a visual impact from my farm & more specifically my storage areas where I am planning to build a flat or house.	
	2. The only portion bordering the proposed mine where natural bush is present and various birds and animals have made their home. I am aware of the vegetation. My concern is the bird life and buck that have made there homes here. However as long as it remains a gravel mine that is rehabilitated within 5 years , the animals will certainly be able to return again.	Noted.
	3. Farm safety in totality. Seeing that we are farming with small stock, I request that the applicant passes on my concerns to the workers the responsibility to ensure that information about the properties and farm activities be kept strictly confidential in order to prevent possible theft.	Agreed.
	4. The disturbance and shock on animals especially during lambing and calving season See report by Dr Muller Strydom (Vet) as sent to you.	Received from DABCO (see above).
	5. Dust on pastures, our house, washing etc. I take note of your response. Also see the report by Dr Muller Strydom (Vet) with respect to dust on pastures and the effect on animals in the immediate environment.	Mr Barnard's house is more than 450 metres away from the mining permit area on the other side of a river valley. It is very unlikely that there will be any dust impact at all.
	The noise factor I take note of your response, thank you.	Noted.
	The destruction of agricultural land in relation to food security I take note of your response, thank you.	Noted
	Concern: Have any studies with respect to visual impact been done? I take note of your response, thank you. As long as it remains a gravel mine.	This application is for a gravel mine only.
	Safety of workers in relation to the removal of fire wood. I refer specifically to farmworkers, specifically those living on Portion 18 who come and collect wood in the valley between Portion 33 and Portion 19. It must be made certain that these workers as well as children, for safety reasons, should not enter the mining area in order to prevent possible injuries or death.	Agreed.
	A further point of concern. Is the dam wall that the trucks will drive over suitable for trucks. If the dam wall breaks who will be responsible for the damage.	This is an existing road that is used by large farm trucks. It is very unlikely that the dam wall

NAME	ISSUES AND CONCERNS	RESPONSE
		will break.
	I HOPE, BELIEVE AND TRUST THAT THERE REALY WILL BE GOOD CO-OPERATION IN THE INTERESTS OF EVERYONE INVOLVED.	Agreed.
Mr AD Barnard *(Farm 33/227)* *Comment on the BAR & EMPr:*	Additional e-mail sent on 3 June 2024. Hope you are well. Please find hereby attached another report by Mr BA Robertson, agronomist, to add to the concerns already sent. Please take note that this correspondation, as well as the correspondation already sent, is on behalf of AD Barnard, in capacity as neighbouring owner of portion 33 of Buffelsdrift, George, as well as Dabco Trading Pty Ltd. Please add it to the rest of the correspondation.	 Added to the correspondence. Noted. Added.
Sabulela Properties 1 CC *(Farm 32/227)* *Ilia Gyltidis* *Andre Joubert* *Michael Howells* *Rhyan Howells* *Dean Howells* *Jean Du Raan* *Initial comment:*	Letter received on 12 April 2024. We, shareholders of farm 32/227 Buffelsdrift hereby wish to object to the proposed mining of weathered granite gravel near our portioned farm area for the following reasons pointed out. **1. The direct impact on our farm and environmental impact** a. The area where the subject property is located is exclusively indicated as an Agricultural Zone 1. According to the George Integrated Zone Scheme By-Law, Schedule 1, Agricultural Zone 1 (AZI). And the objective is to promote and protect agriculture on farms as an important economic, environmental and cultural resource and that limited provision will be made for non-agricultural uses to create the opportunity to increase the economic potential of these properties. We believe that any mining activity on the proposed mining area will directly contradict the objective of Agricultural Zone 1, therefore having a direct impact on our farm portions and surrounding farms' consented use rights in future as per Schedule 1. b. The direct impact that the weathered granite gravel mine will have in the area is a general decrease in quality of life for our families and community situated on the surrounding farms. This decrease will be due to the expected mining, processing and logistical activities and the general air, noise, visual, soil, water pollution that is created due to the expected mining activities. c. As future residents we aspire to ensure that the Zoning of the area does not change, as we are 5 young families that are building our permanent homes on our	 The objection is noted. These are town planning issues that will be addressed by a Town Planner in a land use planning application to be submitted to the George Municipality. A small-scale earthmoving operation is planned. There will be no processing or logistical activities on site. Noted.

NAME	ISSUES AND CONCERNS	RESPONSE
	farm and the proposed mining will conclude not even 1 kilometre away from where our homes will be situated, which will lead to our farm not being able to increase the economic potential of the area.	
	d. The subject property is directly adjacent to our property and the influx of people as well as increase of traffic flow on the R201 heavy vehicles going to and from the mining area possibly past our farm entrance. This alone will have a detrimental effect on the safety of our families and farm workers as the road/bridge is under construction for years at this point and can barely sustain the existing traffic currently.	The R102 already has fairly high traffic volumes and this includes farm lorries and construction vehicles. The additional trucks from the proposed mine will not result in a significant increase in the traffic volume.
	e. As indicated, the area will be mined using excavators, which does not make sense as if you look at the way granite is extracted, there will be the use of drilling machines and explosives at some point of the mining process.	Only excavators will be used to mine the weathered granite gravel. There will be no drilling & blasting.
	f. This will have a huge impact on the general surrounding structures, our farm's planned ventures economically and personally, as well as on our farm animals which include donkeys, cattle, cats, and dogs, birds.	The proposed ± 5 hectare mining area is situated on the other side of a wooded river valley & will have no impact on any farm animals on Farm 32/227.
	g. The impact of mining to the air quality and dust will be a huge health risk to us and our children, farm workers and surrounding neighbours.	The applicant is required to comply with the National Dust Control Regulations, 2013 and dust control methods are included in the EMPr.
	h. The intended mining will have a worrying negative impact on the already fragile ecosystem of the adjacent Maalgate river due to sewage disposal etc.	There will be no sewage disposal in any rivers & a stormwater management plan is included in the EMPr to ensure that impacts to aquatic ecosystems are minimised.
	As residents of the Farm Buffelsdrift 227/32, We are deeply concerned about the potential negative impacts this project could have on our community, environment, and quality of life.	Noted. The applicant is required to comply with the mitigation measures included in the EMPr in order to minimise the impacts on the neighbours.
	The proximity of the proposed mining site to our area raises serious concerns about noise pollution, air pollution, and increased vehicle traffic. The noise generated by mining operations including drilling, blasting & truck movements would disrupt the peace and tranquillity of our neighbourhood. Additionally, the emissions from mining equipment and vehicles could degrade air quality, posing health risks to residents, especially children, the elderly, and individuals with respiratory conditions.	As per the previous responses. No drilling & blasting is proposed.
	Furthermore, the environmental consequences of mining weathered granite gravel cannot be overlooked. This type of mining activity has the potential to disrupt local ecosystems, damage natural habitats, and threaten wildlife populations. Clearing	Impacts on the natural environment have been assessed and included in the BAR & EMPr.

NAME	ISSUES AND CONCERNS	RESPONSE
	vegetation and excavating large areas of land can lead to soil erosion, sedimentation of water bodies & contamination of groundwater sources. As responsible stewards of the environment, we must prioritise the preservation of our natural resources for future generations.	
	In addition to environmental concerns, the proposed mining project poses significant risks to property values and the overall desirability of our area. The presence of a mining operation in close proximity to homes can deter potential buyers and diminish the appeal of our community as a safe and peaceful place to live. This could have serious implications for homeowners who have invested their savings in their properties and rely on the equity in their homes for financial security.	The proposed small-scale mining operation with a maximum duration of 5 years will not pose any risk to property values. The site will be rehabilitated so that it can continue being used as agricultural land.
	It is essential that the concerns and interests of the community are taken into consideration and that transparent communication is maintained between the project proponents and the residents who will be directly impacted by the mining activities.	Agreed.
	Additional Questions to be replied to:	
	1. Define Mine working Hours.	7:30 to 16:30 (Mondays to Thursdays) 7:30 to 15:00 (Fridays)
	2. Confirm amount of excavator/s that will be in operation at any one time.	Normally only one excavator, but occasionally there might be two.
	3. Will any lights be erected at the mining site.	No lights will be erected.
	4. Will there be any drilling or blasting.	There will be no drilling & blasting.
	5. Is there approval from the Western Cape Agriculture Department.	The Department of Agriculture is consulted during this process.
	6. Supply pictures of similar mining operation in the George area.	Pictures of a similar mining operation were sent to the I&AP.
	7. Is there a Mining Recovery Program available?	A rehabilitation & closure plan is included in the BAR & EMPr.
Sabulela Properties 1 CC *(Farm 32/227)* *Ilia Gyltidis* *Andre Joubert* *Michael Howells*	No further comments on the BAR & EMPr were submitted.	Noted.

NAME	ISSUES AND CONCERNS	RESPONSE
Rhyan Howells *Dean Howells* *Jean Du Raan*		
SANRAL *(Farm 3/227)*	No comment submitted.	Noted.
Lagoonbay Lifestyle Estate (Pty) Ltd *(Dr Werner Roux)* *(Farms 5/227 & 9/227)*	E-mail dated 12 April 2024. I refer to the attached and proposed mining permit application and wish to record as a neighbouring property owner, we will most definitely object to this proposed land use. The area is mostly used for agricultural and leisure activities and the proposed mine will negatively impact on the area, the environmental and the adjacent Maalgate River is also at risk. Please send all further correspondence to myself and our environmental consultant, SW van der Merwe (in copy) and please register us as an I&AP and register our objection to this proposed land use.	The objection is noted. Full details of the potential impacts and risks are provided in the BAR & EMPr. Agreed.
Lagoonbay Lifestyle Estate (Pty) Ltd *(Dr Werner Roux)* *(Farms 5/227 & 9/227)*	No further comments on the BAR & EMPr were submitted.	Noted.
JI Barnard Familietrust *(Farm 30/227)*	No comment submitted.	Noted.
OTHER I&APs		
SW van der Merwe (Consultant)	E-mail dated 12 April 2024. I have been appointed by Gerhard Christo van Tonder of Farm Carpe Diem, George, to act on his behalf in this matter. Kindly register Mr van Tonder and myself as I&APs in your process. I will submit initial issues for adjudication during next week.	Noted. Registered.
Martha Lombard	E-mail dated 12 April 2024. I would like to register as an interested and affected party both myself and the Outeniqualand Farm Watch. Martha M. Lombard: marteleen@lombards.za.net	Registered.

NAME	ISSUES AND CONCERNS	RESPONSE
	Outeniqualand Farm Watch: admin@olfw.co.za	
WARD COUNCILLOR		
Mr Bronwen Johnson (Ward 23)	No comment submitted.	Noted.
AUTHORITIES:		
Heritage Western Cape	Final response dated 13 March 2024. You are hereby notified that, since there is no reason to believe that the proposed mining permit to mine weathered granite gravel (aggregate) for road construction, maintenance projects and development projects in the area on Portion 19 of Farm Buffels Drift 227, off R102, George will impact on heritage resources. No further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities, all works must be stopped immediately and Heritage Western Cape must be notified without delay.	Noted. Agreed.
DEA&DP: Directorate Development Management (Region 3)	Letter dated 3 June 2024. 3. The Draft BAR notes that various potential alternatives were considered. The process to reach the preferred alternative has been described and it appears that only the preferred and no-go alternative have been assessed. It is noted that the impacts and risks associated with the identified reasonable and feasible alternatives have been comparatively assessed, but it excludes an assessment of the cumulative impacts to inform the best practicable environmental option to implement. 4. It is further noted that the Department of Agriculture will be consulted for their inputs. It is strongly recommended that comment be obtained from the Department of Agriculture on the Site Sensitivity Verification and Agricultural Agro-Ecosystem Specialist Assessment compiled by Johann Lanz dated 25 February 2024. Their comment should be included in the Final BAR. 5. It is noted that concurrent rehabilitation will be undertaken. Please note the following: 5.1. Indigenous vegetation seeds that occur naturally in the area should be harvested	Noted. The Department of Agriculture has not yet provided a comment. As soon as a comment is received it will be forwarded to the DMRE. The site is located on transformed farm land

NAME	ISSUES AND CONCERNS	RESPONSE
	prior to the commencement of mining activities, and indigenous vegetation or a suitable agricultural crop should be reintroduced during the rehabilitation process. No "alien plant" species is to be introduced into the area.	and will be revegetated with a suitable agricultural crop.
	5.2. The roles and responsibilities of parties that will be responsible for the implementation of the proposed rehabilitation measures should be clearly articulated in the Rehabilitation and Closure Plans & Reports.	Noted. The applicant is responsible for the implementation of the rehabilitation measures.
	5.3. All waste material should be disposed of at a suitably licenced facility and no waste should be used as fill material.	Agreed.
DEA&DP: Directorate Development Facilitation	6. This Directorate supports the implementation of the Stormwater Management Plan. It is recommended that the closure objective 1 indicated in the Draft BAR and the Final Rehabilitation and Mine Closure Plan be amended to specifically include the rehabilitation measure proposed in the Stormwater Management Plan, being: "*Upon completion of mining the cut-off drains / trenches and the silt retention pond must be filled with the material used for the berms and overburden*."	Agreed. This has been included in the Final BAR and Rehabilitation & Mine Closure Plan.
DEA&DP: Directorate Waste Management	7. The EMPr indicates that an integrated waste management approach will be followed during operations. This approach applies to both general and hazardous waste generated on-site and involves source separation, recycling, re-use and recovery of waste, where possible, before disposal at a licensed waste disposal facility. Safe disposal certificates must be kept on-site.	Agreed.
	8. Where relevant, a letter regarding George Municipality's solid waste management department's capacity to accept and dispose of solid waste generated during mining operations, should be included in the Final BAR.	Not applicable. This mine will not generate a large volume of waste.
	9. Waste storage must comply with the National Environmental Management: Waste Act, 2008 (Act No.59 of 2008) National Norms and Standards for the Storage of Waste published in Government Notice No. 926 of 29 November 2013, if the storage of general waste exceeds 100m3 or that of hazardous waste exceeds 80m3.	Not applicable. There will be no storage of large volumes of general or hazardous waste on site.
	10. Any green waste should be taken to an approved municipal or private green waste facility as the Department initiated a 100% ban of organics to landfill by 2027. The applicant is advised to separate organics from the general waste stream and implement beneficiation initiatives where possible.	Not applicable. No green waste will be generated.
	11. The applicant must ensure to compliance to the National Dust Control Regulations, 2013 and implement the dust control methods as indicated in the EMPr.	Agreed.
	12. A complaints register must be kept on-site to record any complaints received from the surrounding communities, and how the complaint was resolved.	This is already included in Section 18.4 of the BAR & EMPr.

NAME	ISSUES AND CONCERNS	RESPONSE
DEA&DP: Directorate Pollution & Chemicals Management	13. This Directorate supports the stormwater management actions presented in the Stormwater Management Plan (Appendix 5) to prevent soil erosion and sediment-laden runoff from entering any nearby water resources (rivers). 14. Following from above, this Directorate does not anticipate significant impacts to water and groundwater resources due to the proposed mining activities.	Noted. Noted.
DEA&DP: Directorate Air Quality Management	15. Dust suppression methods as indicated in the EMPr must be implemented on-site to minimise excessive dust emissions into the atmosphere. 16. Mining operations should occur during the hours stipulated in the EMPr. 17. Excessive noise pollution should be monitored on-site, especially during peak operating periods, to prevent noise nuisance from occurring.	Agreed. Agreed. Agreed.
DMRE	The DMRE acknowledged receipt of the application on 7 March 2024.	Noted.
George Municipality	Letter dated 21 May 2024. Based on the information available to us, it is our derivation that the applicant intends to obtain rights to operate a mine, for the extraction of gravel that will be used by customers for road construction purposes, on Farm 227/19. According to our records Farm 227/19 is zoned “Agricultural Zone I” in terms of the George Integrated Zoning Scheme By-Law, 2023 (Zoning Scheme). **Prospecting, mining and quarrying is not a primary land use right in terms of the Zoning Scheme**. Thus, the applicant needs to submit the following development application to the George Municipality, Directorate: Human Settlement, Planning & Development for evaluation and approval: “*Consent in terms of Section 15(2)(o) of the Land Use Planning By-Law for George Municipality,2023 for a quarry*”. Note that should the application mentioned above be approved, the approval will only be granted for a number of years, as determined by the Municipality. Taking the above into consideration the applicant still needs to apply for the relevant land use rights before operation can take place.	 Noted. According to the Surveyor General Diagram LG7381/1987 a mineral rights area to allow for the mining of stone and sand on the property was registered in the Deeds Office in 1987. A Town Planner will need to investigate and determine if this is an existing legal land use right on the property. The applicant has been informed. Noted. Agreed.
Cape Nature	No comment submitted.	Noted.

NAME	ISSUES AND CONCERNS	RESPONSE
Department of Agriculture Western Cape	No comment submitted.	Noted.
Breede-Olifants Catchment Management Agency (BOCMA) *Initial comment:*	Letter dated 25 March 2024. 1. The proposed mining development will occur adjacent to the Brakkloof river which is within the regulated area of a watercourse, thus it will trigger water uses in terms of section 21(c) & (i) of the National Water Act, 1998 (Act 36 of 1998) ("NWA"). These sections refer to the impeding or diverting the flow of water in a watercourse and altering the bed, banks, course or characteristics of a watercourse. 2. If there is water found underground during the mining operations and the applicant intends to remove and discharge that water; please note that the removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people is a water use in terms of section 21(j) of the NWA and must be authorised prior to commencement of the activity. 3. If water for the mining development and operations will be supplied by a Water Services Provider (WSP), there must be an agreement between Kirsten & Tulleken Vervoer CC and a WSP and water charges must be paid directly to the WSP. 4. Please note that no water shall be derived from the Brakkloof river or any other water resource and used on Portion 19 of the farm Buffels Drift 227 for any purpose without prior approval by means of a water use authorisation in terms of section 22 of the NWA. 5. The applicant is advised to take all reasonable control measures to prevent any potential degradation and sedimentation of the Brakkloof river and the nearby stream during the operational phase of the mine. 6. Please note if there will be storage of oil, diesel, hydraulic fluids and/or grease onsite used for construction heavy machinery; it is recommended that the storage areas for these fluids be bunded with cement and in such a manner that any spillages can be contained and reclaimed without causing any pollution to the ground and surface water resources. 7. Pollution: the applicant is referred to section 19(1) of the NWA to report any pollution incidents that may occur/originate from the proposed mining development to the BOCMA Office within 24 hours. 8. As required by section 22 of the NWA, a Water Use Authorisation is required prior to commencement with any water use activity contemplated in section 21 of the	 Noted. The applicant will apply for the required water use authorisations. Noted, however due to the shallow mining method & the nature of the underlying geology it is very unlikely that any groundwater will be encountered. No water for mining will be required. Agreed. Agreed. A Stormwater Management Plan is included in the BAR & EMPr. Agreed. Noted. Noted. The applicant will apply for the required Water Use Authorisations.

NAME	ISSUES AND CONCERNS	RESPONSE
	NWA. Moreover, commencement with any water use activity without authorisation constitutes an offence in terms of section 151(1)(a) of the NWA. In terms of section 151(2) of the NWA, any person who contravenes is guilty of an offence and liable, on first conviction to a fine or an imprisonment of a period not exceeding five years or both such a fine and imprisonment. 9. In light of the above, you are advised that the onus remains with the property owner to adhere to the NWA, prior to commencement with any water use contemplated in section 21 of the NWA that is associated with the proposed development.	 Agreed.
Breede-Olifants Catchment Management Agency (BOCMA) *Comment on the BAR & EMPr:*	Letter dated 7 May 2024 The following are BOCMA comments related to the BAR & EMPr. 1. Please note that the comments dated 25 March 2024 provided by BOCMA are still applicable to the proposed mining development and must be adhered to. The Breede-Olifants Catchment Management Agency has no objections to the proposed mining development. 2. As required by section 22 of the NWA, a Water Use Authorisation is required prior to commencement with any water use activity contemplated in section 21 of the NWA. Moreover, commencement with any water use activity without authorisation constitutes an offence in terms of section 151(1)(a) of the NWA. In terms of section 151(2) of the NWA, any person who contravenes is guilty of an offence and liable, on first conviction to a fine or an imprisonment of a period not exceeding five years or both such a fine and imprisonment. 3. In light of the above, you are advised that the onus remains with the property owner to adhere to the NWA, prior to commencement with any water use contemplated in section 21 of the NWA that is associated with the proposed development.	 Noted. The BOCMA has no objections. The applicant has appointed a consultant to facilitate the water use application process & the pre-application water use enquiry has been submitted. Agreed.
Department of Water & Sanitation (e-WULAAS)	E-mail dated 1 May 2024. A request for consultation for the following Pre-Application Water Use Enquiry has been submitted to the department. Granite gravel quarry on Portion 19 of the Farm Buffels Drift 227, near George (WU36379) Your request for consultation was submitted to : Name: Mr C. Abrahams (WUL Manager/WUAAAC Chairperson) e-Mail: cabrahams@bocma.co.za Tel: 0233468031	 The consultant has commenced with the water use application process.

NAME	ISSUES AND CONCERNS	RESPONSE
Garden Route Biosphere Reserve	No comment submitted	Noted.
ESKOM	Letter dated 15 May 2024. a) Eskom has no objection to the proposed work and include a drawing indicating Eskom Overhead and underground services in close proximity. b) Please note that underground services indicated are only approximate and the onus is on the applicant to verify its location. c) There may be LV overhead services / connections not indicated on this drawing. d) The successful contractor must apply for the necessary agreement forms and additional cable information not indicated on included drawing, in order to start construction. Application for Working Permit must be made to: Customer Network Centre: George Pretty Betela 011 864 5376 / 079 523 6269 BetelaNB@eskom.co	Eskom has no objection to the proposed work. The site is 20m away from the centreline of an 11kV overhead line. There are no underground services near the site. Noted. The applicant is required to comply with all of Eskom's requirements.
Garden Route District Municipality	Letter dated 22 April 2024. The department has no objections against the above-mentioned developments. Ensure that the mining is not in contravention with the Garden Route District Municipality Health Services By-laws, P.G. No 8018 of 10 December 2018, Chapter 2: General Provisions Relating to Health Nuisances.	Noted. Agreed.

8.3 Discussion

All comments received have been provided to the applicant (Kirsten & Tulleken Vervoer CC).

Kirsten & Tulleken Vervoer CC has confirmed that they are taking the concerns and interests of local residents very seriously and that they are committed to maintaining open and transparent communication with the local residents as well as with DABCO (Pty) Ltd and Skimmelkrans Boerdery BK (who are renting the land for farming purposes).

Many of the concerns raised appear to be related to a suggestion that drilling & blasting activities were proposed. This is not correct, no drilling & blasting activities at all are proposed.

A simple earth moving operation is planned using an excavator and trucks. The applicant has many years of experience with similar mining operations and will ensure that noise and dust levels are kept below the legal limits and will not be a nuisance to neighbouring landowners.

The applicant has experience with operating in other farming areas including an intensive poultry (egg laying) farm where biosecurity issues are also important and there have not been any negative impacts on the farm animals.

The applicant could make use of an alternative access track on the outside of the centre pivot irrigation circles that will not interfere with pastures or irrigation. Day to day access arrangements will be made directly between the applicant and the renters of the land (i.e. DABCO and Skimmelkrans Boerdery) in order to minimise the impacts on farming activities.

The only persons who will gain access to the farm will be employees of Kirsten & Tulleken Vervoer (operators and truck drivers). There will only be 2 or 3 employees on the farm at any one time during normal operations and security will be well controlled by Kirsten & Tulleken. Security arrangements will be made in consultation with the companies who are renting the land.

There will be no need for the gates to be open throughout the day. If necessary, it could be possible to install an automatic gate that can only be opened and closed using a remote control. This or any other access control measure will only be implemented after discussions with the landowners and the companies renting the land for farming purposes.

The R102 already has high traffic volumes and this includes farm lorries and construction vehicles. It is anticipated that during working hours only that there will be an average of two (2) trucks per hour from the mine. These additional trucks from the proposed mine will not result in a significant increase in the traffic volume on the R102.

Kirsten & Tulleken are a well-known and respected company that has been supplying and transporting building materials to sites around the Garden Route since 1984. More information about the company can be found on their website: https://www.tulleken.co.za/about-us/

Kirsten & Tulleken has an open-door policy that extends to all their employees and clients. Kirsten & Tulleken would like to maintain good relations with the local residents and farmers in the area and commits to this same open-door policy in order to resolve any issues or concerns raised during the operational life of the proposed gravel mine.

9. PROCESS TO REACH THE PROPOSED PREFERRED ALTERNATIVE

9.1 Details of the alternatives considered

(Note: "Alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives 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 ("the no go alternative").

9.1.1 Location or site alternatives

Kirsten & Tulleken Vervoer requires viable mineral resources in order to sustain its business and to provide gravel and sand for construction and development projects in the George and Garden Route area.

Kirsten & Tulleken Vervoer is continually evaluating alternative sites and locations in the area. Many of these alternatives are rejected at an early stage due to the identification of potential fatal flaws e.g. the mineral resources do not comply with customer specifications or the site is located in an environmentally sensitive area.

The mining permit area was selected because it is not located in a sensitive environment (i.e. it is not located in a Critical Biodiversity Area and there are no concerns about heritage resources).

9.1.2 Activity alternatives

The core business of Kirsten & Tulleken Vervoer is to provide construction materials and so when an area is investigated the primary focus is to evaluate the viability of mining the mineral resource from a financial, technical and environmental point of view.

Kirsten & Tulleken Vervoer is not the land owner, so it would not be realistic for Kirsten & Tulleken Vervoer to propose another type of activity on the land e.g. for housing or commercial or industrial activities.

The holder of a mining permit is required to rehabilitate the environment affected by mining to its natural state or to another predetermined land use. The mining activity takes place over a relatively short time period, so the selection of the best post-mining long term land use is an important consideration.

In the case of this application the best post-mining land use alternative is for agricultural purposes as this is in line with the defined primary land uses for the area as determined by the agricultural zoning of the land.

9.1.3 Design or layout alternatives

The design or layout of a mining project is determined by the shape, position and orientation of the mineral resource.

There would be two feasible ways of mining this resource. It could be mined from west to east or from east to west.

The significance of the environmental impacts associated with different possible design or layout alternatives would be very similar, therefore layout alternatives are not considered any further.

9.1.4 Technology alternatives

The technology used in a mining project is determined by the shape, position and orientation of the mineral resource e.g. if a mineral deposit is situated below the surface then an underground mining method would be appropriate.

For surface mining in the Western Cape essentially two alternative mining methods are used. Where the mineral resources occur below the current land surface then an excavator is used to reach down and mine the material.

Where dunes are mined, a front end loader is normally used.

An excavator will be used for this project.

The significance of the environmental impacts associated with different possible technology alternatives would be very similar, therefore technology alternatives are not considered any further.

9.1.5 Operational alternatives

From an operational point of view it could be possible to mine this mineral resource on a continuous basis (i.e. by using a double shift over 24 hours). The reality is that there would be additional health & safety considerations (e.g. requiring extra lighting at night). Mining operations will therefore take place during normal working hours only.

9.1.6 The “no go” alternative

The assessment of alternatives must at all times include the “no go” option as a baseline against which all other alternatives must be measured. The “no go” alternative is therefore assessed together with the preferred alternative.

9.2 The environmental attributes associated with the alternatives (i.e. the Baseline Environment)

(The description of the baseline environment should focus on the geographical, physical, biological, social, economic, heritage and cultural aspects)

9.2.1 Geographical

The proposed mining permit area is located is located 13 km south-west of the centre of George. Access to the site is obtained over a farm road from the R102.

The site is situated on transformed agricultural land at the far eastern end of a gently rounded ridge.

The elevation of the site varies from 160m above sea level in the west to 140m above sea level in the east.

9.2.2 Climate

The climate for the area originally covered by Garden Route Granite Fynbos is described in Mucina and Rutherford (2006) as follows:

“Mean Annual Precipitation 350–880 mm (mean: 600 mm), with a slight low in early winter. Mean daily maximum and minimum temperatures 27.8°C and 6.8°C for January–February and July, respectively. Frost incidence 2 or 3 days per year.”

The predominant wind direction is from the southeast, although the northwester does blow from May to August. The average wind speed is gentle.

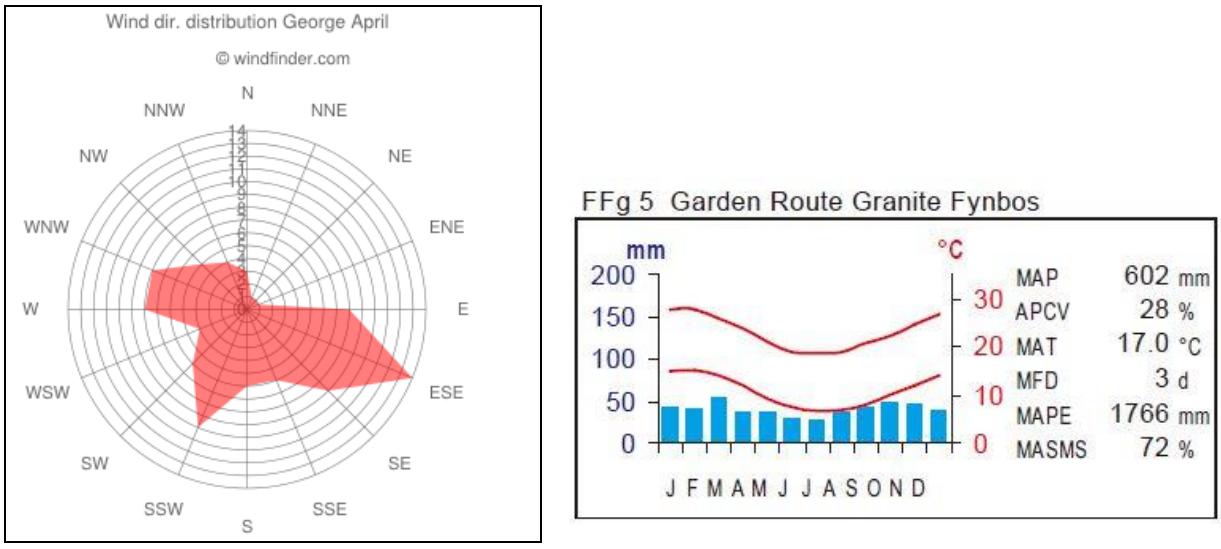


Figure 5: Wind rose and climate diagram for the area

(Sources:www.windfinder.com & Mucina and Rutherford (2006))

9.2.3 Soil

An Agricultural Agro-Ecosystem Specialist Assessment was prepared by Johann Lanz on the impact of the proposed mining on the agricultural potential of the land **(see Appendix 2)**.

The soils and the underlying weathered granite are very uniform across the investigated area.

Soils are moderately deep, light textured, imperfectly drained duplex soils on underlying structured clay on weathered granite of the Estcourt soil form (as classified by the South African soil classification System). The average soil depth varies between 60 and 70cm.

The soils are limited predominantly by their depth.

The land capability classification (out of 15) (DAFF, 2017) is from 5 (low) to 8 (moderate).

The western part of the site is used for irrigated vegetable crops (using a centre pivot irrigation system) whilst the eastern part of the site is covered with pasture grasses for livestock grazing.

9.2.4 Geology

The property is underlain by the Maalgaten Granite (pale orange colour on map). A number of other Road Material and gravel mines in the area are shown on the (map symbols RM and gr). Some of these mines are no longer in production.

The Explanation of Geological Sheets 3322CD and 3422AB, the Geology of George and Environs (Council for Geoscience, 2008) provides a detailed description of the Geology as well as the Economic Geology of the area. This is summarised below:

The southern slopes of the Outeniqua mountains drop steeply to a low-relief, 10-km-wide coastal plain. This coastal plain is underlain by the more susceptible rocks of the Cape Granite Suite and metasediments of the Neoproterozoic Kaaimans Group.

The mining permit area is underlain by the Maalgaten Granite. The deformed Maalgaten Granite represents the most voluminous part of the George Pluton which in turn is part of the Cape Granite Suite.

The granite is poorly exposed and has a distinct weathering profile in which the fresh granite is commonly overlain by friable partially weathered granite, which in turn is overlain by a clay-rich weathered regolith.

The saprolite consists of a deeply weathered friable granite gravel with a sandy, clayey matrix that grades down into weathered granite of the George pluton. It is between 3 and 19m thick, and has been, or is currently exploited from 14 known sites. The gravel is used for road wearing course, subgrade and fill. In some cases the underlying, slightly weathered granite has been exploited for stone aggregate.

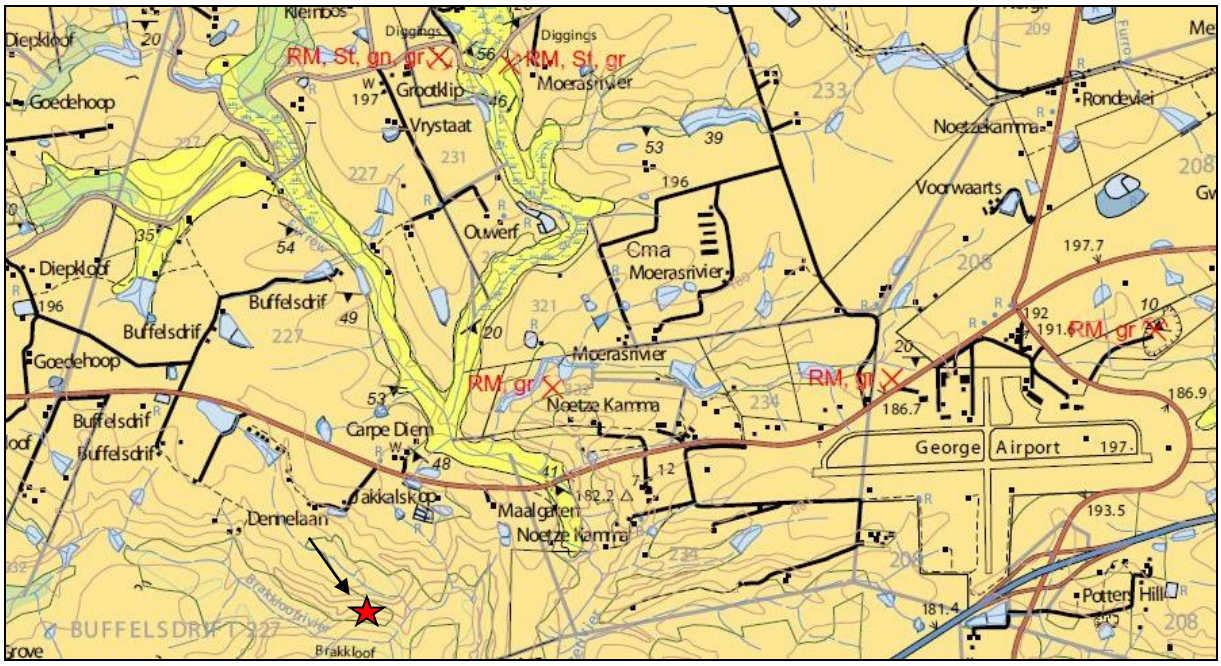


Figure 6: Extract from 1:50 000 geological map sheet 3322CD & 3422AB George

Note: The red star indicates the location of the site.

Map symbols RM and gr show the locations of other Road Material and gravel mines in the area.

9.2.5 Water resources

The site is located in the K30A Quaternary catchment area. Water resources in this area are managed by the Breede-Olifants Catchment Management Agency (BOCMA).

Debbie Fordham of Upstream Consulting compiled the specialist aquatic biodiversity compliance statement **(see Appendix 3)**.

The site assessment (conducted on the 3rd of December 2023) determined that there are no aquatic features within the proposed mining permit area. Within the 500m radius study area there are five watercourses and numerous small contour dams. The mining area is located on a hillslope between the Brakkloof River and a small tributary stream (referred to as HGM1 and HGM2 by the specialist). The Brakkloof River merges with the Maalgate River approximately 2km downstream. However, with the implementation of mitigation measures and stormwater management, these features will not be impacted by the project. Therefore, the sensitivity rating by the specialist is 'Low' for the aquatic biodiversity theme.

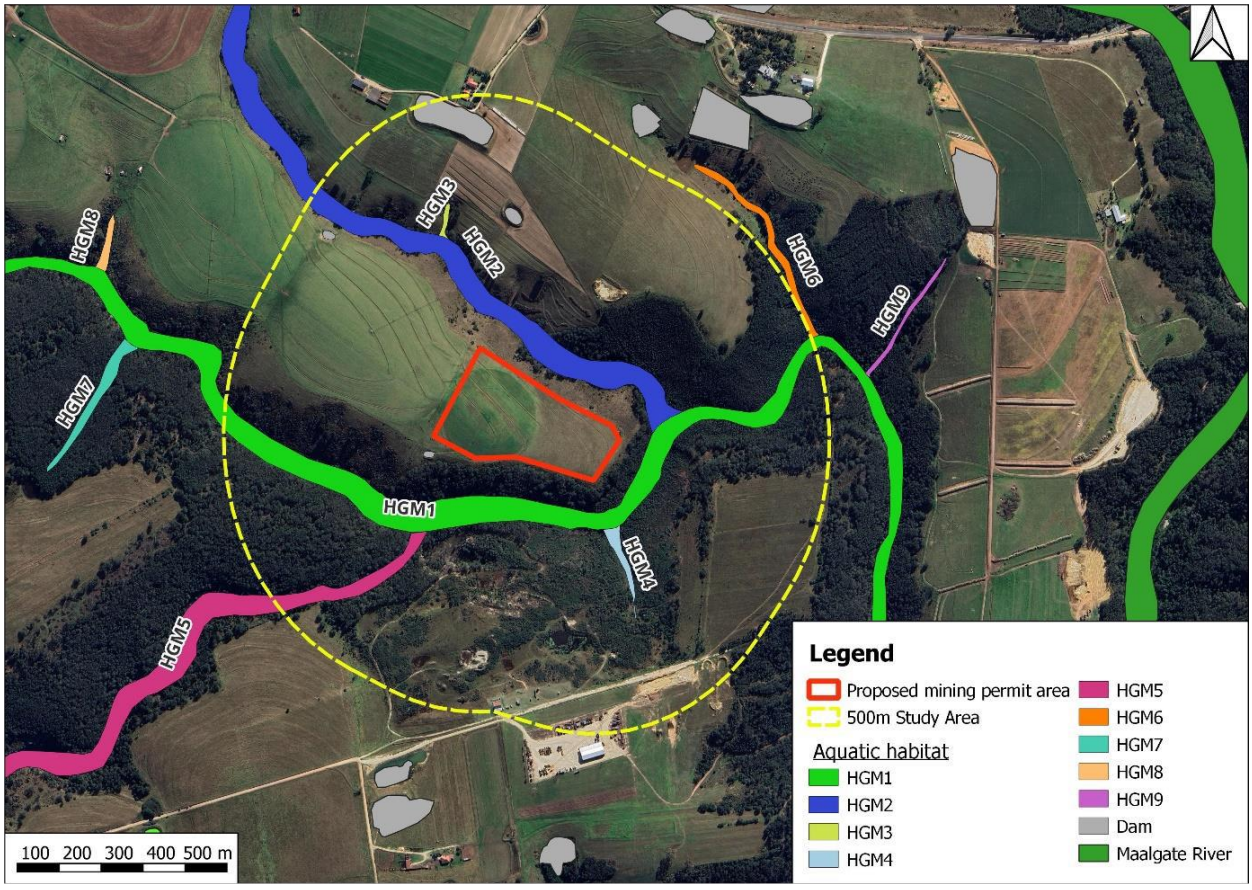


Figure 7: Aquatic habitat identified, and delineated into hydrogeomorphic (HGM) units, within 500m of the proposed mining permit area.

Note: This map was prepared by Upstream Consulting and is included in the Aquatic Biodiversity Compliance Statement.

The river valleys closest to the proposed mining area have been highly impacted by agriculture, abstraction and a heavy infestation of black wattle, blue gums and other invasive species. The rivers are in a poor ecological state.

The proposed gravel mine will need to ensure that the mining operations do not have a negative indirect impact on water resources.

Pollution prevention measures must be implemented to ensure that no pollution of any water resource by sediment, oil, grease, fuel or chemicals takes place.

The area does not overlie an important aquifer. No significant impacts on groundwater are anticipated.

9.2.6 Terrestrial Biodiversity

The proposed mining permit area was historically covered by Garden Route Granite Fynbos (FFg 5). Garden Route Granite Fynbos is described as a Critically Endangered Ecosystem (NBA 2018). Garden Route Granite Fynbos is described in Mucina and Rutherford (2006) as "*Moderately undulating plains and undulating hills on the coastal forelands. Dense proteoid and ericoid shrubby grassland. Proteoid and graminoid fynbos are dominant with ericaceous fynbos in seeps.*"

However, the proposed mining permit area is located within transformed agricultural land and there is no remaining natural vegetation.

There are no mapped Critical Biodiversity Areas (CBA) in the mining permit area. An Ecological Support Area (ESA2: Restore from other land use) has been incorrectly mapped in the mining permit area and this is explained in the Terrestrial Biodiversity Compliance Statement **(see Appendix 4).** The ESA2 area was incorrectly mapped as a wetland by the NFEPA project in 2011 and this error was included in the Western Cape Biodiversity Spatial Plan 2017 (BSP) mapping of the area.

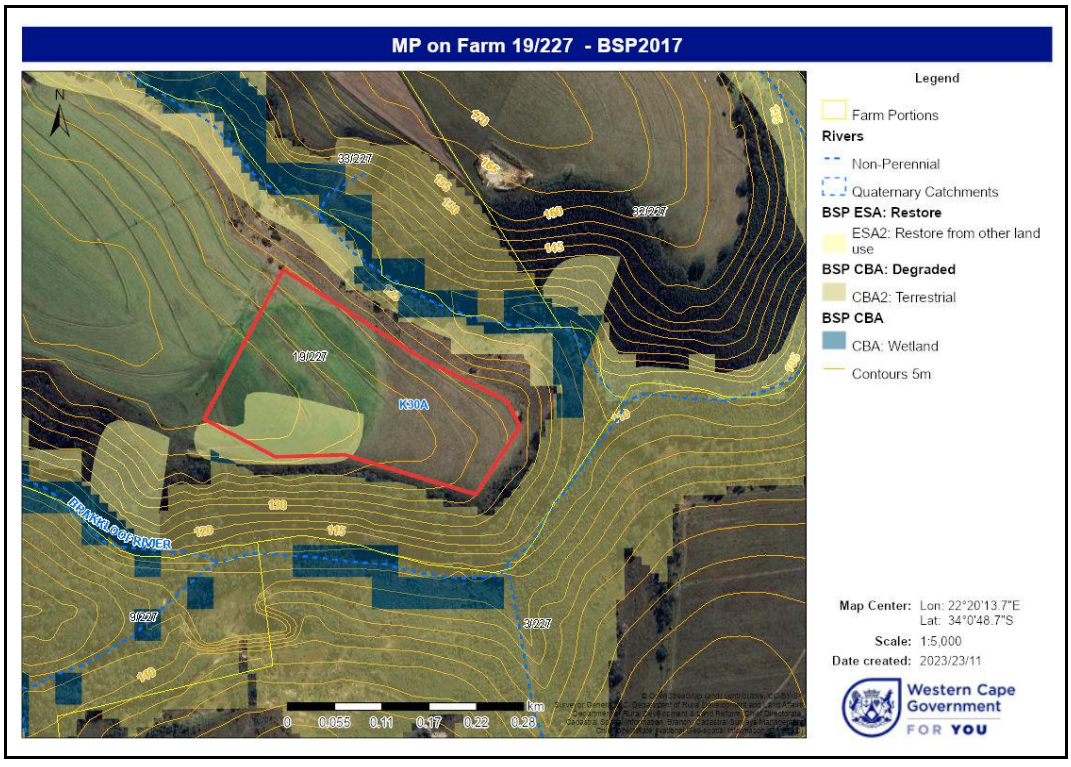


Figure 8: Critical Biodiversity Areas (CBA) map of the area (WCBSP 2017)

The Brakkloof river valley and its tributary are located downslope of the proposed mining area. Unfortunately, the river valleys have been extensively invaded by alien species such as Black Wattle. No significant impacts to natural vegetation or to terrestrial biodiversity are anticipated.

9.2.7 Socio-economic

The proposed gravel mine is located in a rural part of Ward 23 in the George Municipal Area.

The George Municipality is a local municipality situated within the Garden Route. As of 2022 it had a population of 294 929 people. Its municipality code is WC044.

The strategic location of George along the N2 National Road between Cape Town and Gqeberha (Port Elizabeth) facilitates the mobility of people, goods and services.

The municipality covers an area of 5 191 square kilometres in the Garden Route and Little Karoo regions.

According to the 2022 census the municipality has a population of 294 929 people. Of this population, 50.4% describe themselves as "Coloured", 28.2% as "Black African", and 19.7% as "White". The first language of 67.2% of the population is Afrikaans, while 21.7% speak Xhosa and 8.1% speak English.

The majority of the residents of the municipality live in the city of George and surrounding area. Close to George are the coastal resorts of Herolds Bay and the Wilderness.

The key statistics provided by Stats SA for the George Municipal Area based on the statistics from the 2011 and 2022 Censuses are shown in the following table:

Table 2: Key Statistics for the George Municipal area

Name	2022	2011
Total population	294 929	193 672
Young children (0-14 years)	22.9%	26.3%
Working age population (15-64 years)	68.9%	67.3%
Elderly (65+ years)	8.2%	6.4%
Dependency ratio	45.2	48.6
Sex ratio	96.7	96.9
No schooling (20+ years)	2.4%	3.9%
Higher education (20+ years)	13.9%	11.3%
Number of households	85 931	53 549
Average household size	3.4	3.6
Formal dwellings	87.3%	83.9%

Name	2022	2011
Flush toilets connected to sewerage	93.4%	88.0%
Weekly refuse disposal service	88.3%	88.1%
Access to piped water in the dwelling	81.3%	70.3%
Electricity for lighting	95.5%	91.0%

The sectors that contribute the most to employment in the Garden Route District include the:

- Wholesale and retail trade, catering and accommodation sector (23.9 %)
- Finance, insurance, real estate and business services sector (17.3 %)
- Community, social and personal services sector (15.1 %)
- Agriculture, forestry and fishing sector (13.1 %)

The area surrounding the proposed mining permit area is predominantly used for agricultural purposes.

9.2.8 Heritage and cultural aspects

Dr Jayson Orton of ASHA Consulting compiled and submitted the NID (or Notice of Intent) document that was submitted to Heritage Western Cape.

The farm portion was registered in the Deeds Office in 1953. Historical aerial photography shows that the site was under grassland in 1939 but that by 1974 it appears to have been cultivated.

No significant impacts to old buildings, landscapes, archaeological resources, palaeontological resources or old graves are expected.

Heritage Western Cape provided a final comment on 13 March 2024 and stated:

"You are hereby notified that, since there is no reason to believe that the proposed mining permit to mine weathered granite gravel (aggregate) for road construction, maintenance projects and development projects in the area on Portion 19 of Farm Buffels Drift 227, off R102, George will impact on heritage resources. No further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required..

However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities, all works must be stopped immediately and Heritage Western Cape must be notified without delay".

9.2.9 Land uses and planning considerations

The property is zoned for agricultural purposes by the George Municipality. The applicant should ensure that the required land use approval is in place to allow mining on the property.

According to the Surveyor General Diagram LG7381/1987 a mineral rights area to allow for the mining of stone and sand on the property was registered in 1987. A Town Planner will need to investigate and determine if this is an existing legal land use right on the property.

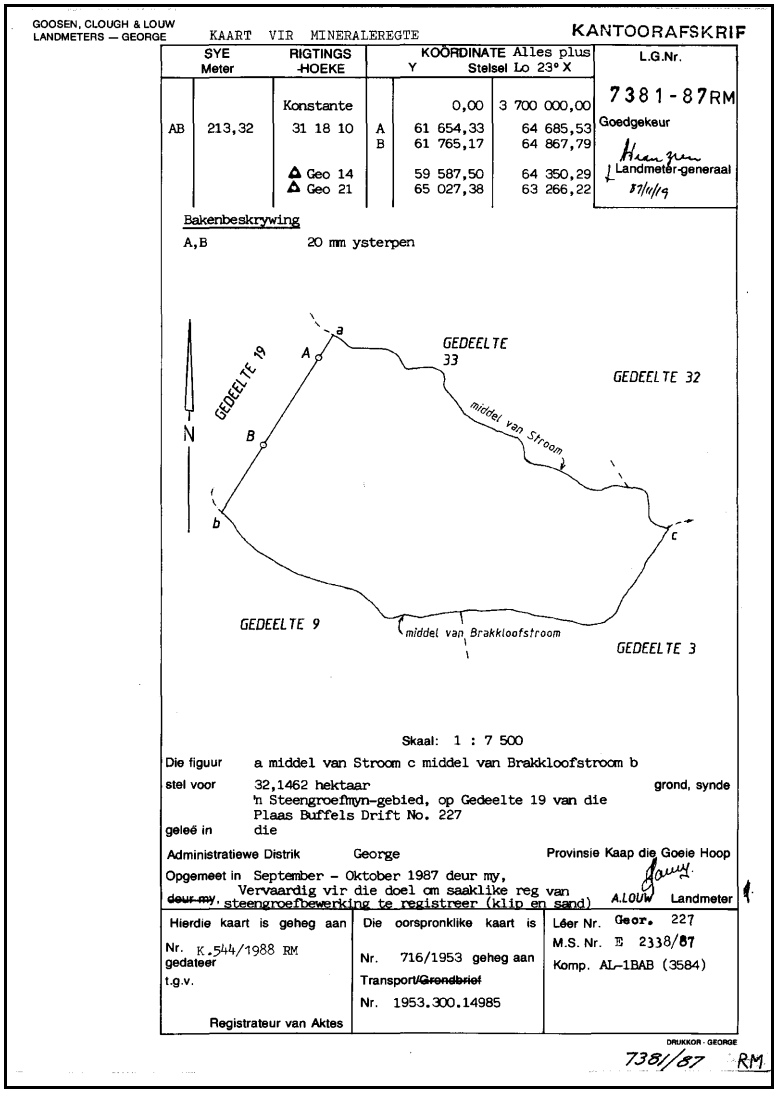


Figure 9: Surveyor-General Diagram 7381/87

9.2.10 Description of specific environmental features and infrastructure on the site

Specific environmental features have already been described above.

9.2.11 Environmental sensitivity and current land use map

See **Figures 2, 3, 7 and 8.**

9.3 The impacts and risks identified for each alternative

(including the nature, significance, consequence, extent, duration and probability of the of the impacts, including the degree to which the impacts:- (aa) can be reversed, (bb) may cause irreplaceable loss of resources and (cc) can be avoided or mitigated)

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

The potential impacts and risks associated with each alternative are described in the following tables. The full assessment is provided in **Section 11** of this report.

Table 3: Potential impacts and risks associated with the preferred alternative

Aspect	Potential Impacts
Biodiversity	The proposed mining permit area is situated on transformed farm land and will have no impact on natural vegetation. Smaller animals will move away when mining operations are in progress.
Water resources	The proposed mining area is situated on ridge well above the Brakkloof River to the south and a tributary of the river to the north. As the site is located within 100 metres of a river, authorisation in terms of the National Water Act, 1998 (Act 36 of 1998) will be required. The proposed mining activities will have no significant impact on surface water or groundwater resources.
Soil and agricultural potential	Care will be required to prevent soil erosion and proactive management will be required to ensure that the area will be rehabilitated to that it can continue to be used for agricultural purposes (i.e. planting of pasture crops).
Noise and dust	An excavator will be used to excavate the material and to load trucks. Noise and dust impacts will be largely restricted to the site. The mine will operate during working hours only.
Socio-economic	The proposed mine will not have a negative impact on any agricultural activity on the farm or of the surrounding farms. The mine will provide employment and the aim is to use the gravel for various construction projects in the George area.
Cultural and heritage resources	There are no old buildings or other significant heritage resources located within the mining permit area.

The potential impacts and risks associated with the “no-go” alternative are shown in the following table:

Table 4: Potential impacts and risks associated with the “no-go” alternative

Aspect	Potential Impacts
Flora and fauna	No change
Water resources	No change.
Soil and agricultural potential	No change
Noise and dust	No change
Socio-economic	Kirsten & Tulleken Vervoer will forgo an opportunity to create employment and generate an income from this project. Transport is a major component of the cost of low value bulk commodities like gravel. Increased transport costs for material obtained from further away will add to the total cost which will ultimately be paid by consumers.
Cultural and heritage resources	No change.

9.4 The methodology used in determining significance of potential impacts

The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives is provided in the following tables:

Table 5: Nature and type of impact

Nature and type of impact	Description
Positive	An impact that is considered to represent an improvement to the baseline conditions or represents a positive change
Negative	An impact that is considered to represent an adverse change from the baseline or introduces a new negative factor
Direct	Impacts that result from the direct interaction between a planned project activity and the receiving environment / receptors
Indirect	Impacts that result from other activities that could take place as a consequence of the project (e.g. an influx of work seekers)
Cumulative	Impacts that act together with other impacts (including those from concurrent or planned future third party activities) to affect the same resources and / or receptors as the project

Table 6: Criteria for the assessment of impacts

Criteria	Rating	Description
Spatial extent of impact	**National**	Impacts that affect nationally important environmental resources or affect an area that is nationally important / or have macro-economic consequences
	Regional	Impacts that affect regionally important environmental resources or are experienced on a regional scale as determined by administrative boundaries or habitat type / ecosystems
	Local	Within 2 km of the site
	Site specific	On site or within 100 m of the site boundary
Consequence of impact (magnitude / severity)	**High**	Natural and/ or social functions and/ or processes are *severely* altered
	Medium	Natural and/ or social functions and/ or processes are *notably* altered
	Low	Natural and/ or social functions and/ or processes are *slightly* altered
	Very Low	Natural and/ or social functions and/ or processes are *negligibly* altered
	Zero	Natural and/ or social functions and/ or processes remain *unaltered*
Duration of impact	**Temporary**	Impacts of short duration and intermittent and/or occasional
	Short term	During the construction period
	Medium term	During part or all of the operational phase
	Long term	Beyond the operational phase, but not permanently
	Permanent	Mitigation will not occur in such a way or in such a time span that the impact can be considered transient (irreversible)

Table 7: Significance rating

Significance rating	Description
High	High consequence with a regional extent and long term duration. High consequence with either a regional extent and medium term duration or a local extent and long term duration. Medium consequence with a regional extent and long term duration.
Medium	High consequence with a local extent and medium term duration. High consequence with a regional extent and short term duration or a site specific extent and long term duration. High consequence with either a local extent and short term duration or a site specific extent and medium term duration. Medium consequence with any combination of extent and duration except site specific and short term or regional and long term. Low consequence with a regional extent and long term duration.
Low	High consequence with a site specific extent and short term duration. Medium consequence with a site specific extent and short term duration. Low consequence with any combination of extent and duration except site specific and short term. Very low consequence with a regional extent and long term duration.
Very low	Low consequence with a site specific extent and short term duration. Very low consequence with any combination of extent and duration except regional and long term.
Neutral	Zero consequence with any combination of extent and duration.

Table 8: Probability, confidence, reversibility and irreplaceability

Criteria	Rating	Description
Probability	**Definite**	>90% likelihood of the impact occurring
	Probable	70% – 90% likelihood of the impact occurring
	Possible	40% – 70% likelihood of the impact occurring
	Unlikely	<40% likelihood of the impact occurring
Confidence	**Certain**	Wealth of information on and sound understanding of the environmental factors potentially affecting the impact
	Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
	Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact
Reversibility	**Reversible**	The impact is reversible within 2 years after the cause or stress is removed.
	Irreversible	The activity will lead to an impact that is in all practical terms permanent.
Irreplaceability	**Replaceable**	The resources lost can be replaced to a certain degree
	Irreplaceable	The activity will lead to a permanent loss of resources

9.5 The positive & negative impacts that the proposed activity and alternatives will have

(The positive and negative impacts that the proposed activity and alternatives will have on the environment and the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects)
(DMRE: 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)

See **Section 9.3** of this report.

9.6 The possible mitigation measures that could be applied

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

See the environmental impact assessment in **Section 11** of this report.

9.7 The outcome of the site selection matrix

See **Figures 2 & 3**.

9.8 Motivation where no alternatives were considered

(If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such)

Alternatives were considered.

9.9 Concluding statement on alternatives

(a concluding statement indicating the preferred alternatives, including preferred location of the activity)

Kirsten & Tulleken Vervoer requires viable mineral resources in order to sustain its business and to provide gravel and sand for construction and development projects in the George and Garden Route area.

Kirsten & Tulleken Vervoer is continually evaluating alternative sites and locations in the area. Many of these alternatives are rejected at an early stage due to the identification of potential fatal flaws e.g. the mineral resources do not comply with customer specifications or the site is located in an environmentally sensitive area.

The mining permit area was selected because it is not located in a sensitive environment (i.e. it is not located in a Critical Biodiversity Area and there are no concerns about heritage resources).

The core business of Kirsten & Tulleken Vervoer is to provide construction materials and so when an area is investigated the primary focus is to evaluate the viability of mining the mineral resource from a financial, technical and environmental point of view.

Kirsten & Tulleken Vervoer is not the land owner, so it would not be realistic for Kirsten & Tulleken Vervoer to propose another type of activity on the land e.g. for housing or commercial or industrial activities.

The land will be rehabilitated so that it can continue to be used for agricultural purposes.

The “preferred alternative” takes into account location alternatives, activity alternatives, layout alternatives, technology alternatives and operational alternatives.

10. SPECIALIST FINDINGS

(a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations) and an indication as to how these findings and recommendations have been included in the final report)

10.1 Heritage

Dr Jayson Orton of ASHA Consulting compiled and submitted the NID (or Notice of Intent) that was submitted to Heritage Western Cape.

Heritage Western Cape provided a final comment on 13 March 2024 and stated:

“You are hereby notified that, since there is no reason to believe that the proposed mining permit to mine weathered granite gravel (aggregate) for road construction, maintenance projects and development projects in the area on Portion 19 of Farm Buffels Drift 227, off R102, George will impact on heritage resources. No further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.

However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities, all works must be stopped immediately and Heritage Western Cape must be notified without delay”.

10.2 Soil and agricultural potential

An Agricultural Agro-Ecosystem Specialist Assessment was prepared by Johann Lanz on the impact of the proposed mining on the agricultural potential of the land **(see Appendix 2)**.

Findings:
Shallow uniform soils of the Estcourt soil form overly weathered granite across the area. Despite some potential soil limitations, the site is suitable and can be used for viable vegetable crop production under irrigation.

There will be a temporary cessation of agricultural production for the duration of mining activity on the site, but the potential impact of major concern is a reduction in the long-term agricultural production potential of the site. In this case, the assessment found that there is highly unlikely to be any significant long-term reduction in the agricultural production potential of the site provided that effective rehabilitation is implemented. This is because the weathered granite that will be mined is below the agricultural soil resource, which will be temporarily removed and then returned after mining. Furthermore, the elevated site means that mining will not increase drainage limitations.

With well managed and effectively implemented rehabilitation, there is not likely to be any significant reduction in long-term soil and production potential as a result of mining. Mining with rehabilitation will therefore have an impact of *“low”* significance on agricultural resources. However, without effective mitigation, there is highly likely to be long term reduction in soil and production potential and the impact on agricultural resources will therefore be higher.

The conclusion of this assessment is that there are adequate reserves of weathered granite within the proposed mining area. The proposed mining will not reduce the future agricultural production potential of the site, if effective rehabilitation is implemented. It will have no impact

on agricultural employment. The proposed mine is therefore acceptable and, from an agricultural impact point of view, it is recommended that it be approved.

Recommendations:

The following is the sequence of recommended rehabilitation steps:

1. Prevent dust by means of damping down surfaces when required.
2. Because the overburden above the mine-able gravel may exceed a thickness of 50cm, double stripping and stockpiling must be done to ensure that the topsoil remains separate from the underlying soil.
3. A depth of 40cm of topsoil must first be stripped and stockpiled before mining.
4. Thereafter, any additional overburden must be stripped and stockpiled separately from the topsoil stockpiles.
5. Topsoil is a valuable and essential resource for rehabilitation, and it should therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.
6. Topsoil stockpiles should be protected against losses by water and wind erosion. Stockpiles should be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants on the stockpiles will help to prevent erosion. Stockpiles should be no more than 2 metres high.
7. After mining, any steep slopes must be reduced to a minimum and profiled to blend with the surrounding topography. The entire surface must also be sufficiently smoothed and profiled to allow cultivation.
8. The stockpiled overburden must then be evenly spread over the entire mining area.
9. Thereafter, the stockpiled topsoil must be evenly spread on top of the overburden, across the entire mining area. The depth should be monitored during spreading to ensure that coverage is adequate and even.
10. The contour banks must be re-established to the same specifications (height, slope, distance apart) as prior to disturbance, and to the satisfaction of a soil conservation specialist.
11. The area must be cropped again, as before mining.

10.3 Water resources

Debbie Fordham of Upstream Consulting compiled the specialist aquatic biodiversity compliance statement **(see Appendix 3)**.

Findings and recommendations:
The site assessment (conducted on the 3rd of December 2023) determined that there are no aquatic features within the proposed mining permit area. Within the 500m radius study area there are five watercourses and numerous small contour dams. The mining area is located on a hillslope between the Brakkloof River and a small tributary stream. The Brakkloof River merges with the Maalgate River approximately 2km downstream. However, with the implementation of mitigation measures and stormwater management, these features will not be impacted by the project. Therefore, the sensitivity rating was confirmed to be ‘Low’ for the aquatic biodiversity theme.

In conclusion, the DFFE Screening Tool resulted in a ‘Low’ aquatic biodiversity sensitivity rating within the site footprint but showed areas of higher sensitivity within a 500m radius of the activities. Following site verification, this ‘Low’ sensitivity rating for the mining area was confirmed. There are no aquatic features that will be directly impacted by the project.

It is recommended that a condition of approval be the compilation of a detailed stormwater management plan for inclusion in the EMP. Additionally, as there are two watercourses within

100m of the mining permit area, an application for Section 21 (c) and (i) water use authorisation in terms of the National Water Act (Act 36 of 1998) should be undertaken prior to commencement.

This will necessitate the compilation of a detailed stormwater management plan report, as well as a rehabilitation plan (to complement the layouts already provided), to ensure that no aquatic habitat is indirectly impacted by the mining activities.

It is therefore recommended that the site sensitivity be regarded as 'Low' for the aquatic biodiversity theme and that this Compliance Statement be submitted with the EIA application.

10.4 Terrestrial biodiversity

Debbie Fordham of Upstream Consulting compiled the specialist terrestrial biodiversity compliance statement **(see Appendix 4)**.

Findings:
The assessment determined that there is a discrepancy between the environmental status quo versus the environmental sensitivity as identified on the national web based environmental screening tool (Very High). The tool identified the site as having 'Very High' terrestrial biodiversity sensitivity due to Garden Route Granite Fynbos (Critically Endangered) vegetation (NBA, 2018) and an area of ESA2 habitat (WCBSP, 2017). However, following the on-site assessment, these features were not found to be present within the site.

It is the specialist's opinion that the site earmarked for the project is significantly modified/transformed due to a long history of cultivation. It has not laid fallow during which period indigenous species could have returned to recolonize the site. In other words, its chances of rehabilitating on its own if cultivation is ceased, is slim. The surrounding area, on the other hand, seems to have been less impacted by cultivation hence the return of fynbos and thicket species. The latter area is thus worth protecting in perpetuity.

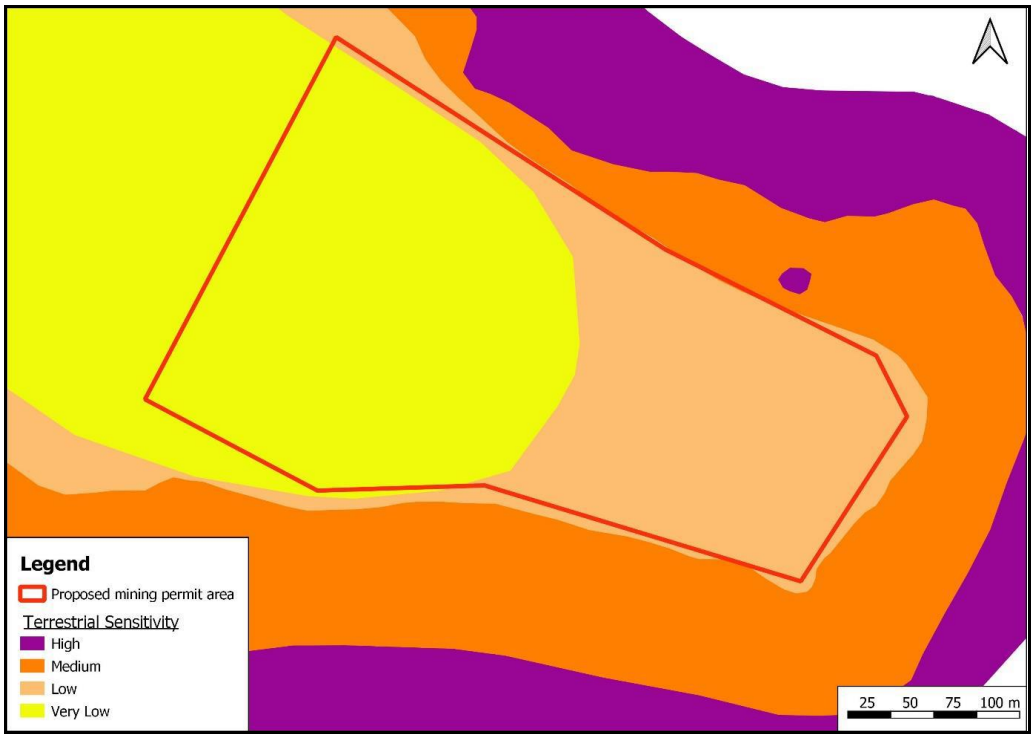


Figure 10: Terrestrial biodiversity sensitivity map of the site & surrounding area

Note: This map was prepared by Upstream Consulting and is included in the Terrestrial Biodiversity Compliance Statement.

There is no remaining natural vegetation within the proposed site boundary, which has been sited upon a hilltop used for vegetable cultivation and pasture crops. Therefore, the project will not impact any Garden Route Granite Fynbos (Critically Endangered) vegetation. The ESA2 feature shown by the WCBSP was not identified on site and thus the project will not impact any conservation support areas. The reason for the discrepancy is due to the 2017 WCBSP data layer having incorporated the broad-scale mapping of the 2011 National Freshwater Ecosystem Priority Areas (NFEPA) project. The NFEPA data layer classified a small portion of the site as freshwater habitat and subsequently the WCBSP incorporated this polygon as a conservation area (ESA2 habitat). However, the latest available aquatic spatial data of the South African Inventory of Inland Aquatic Ecosystems (SAIIAE), produced in 2018, excludes this area from any national river and wetland datasets. This was confirmed during the site verification as no aquatic features were identified within the site. Therefore, the ESA2 area shown within the site should be considered a mapping inaccuracy, and consequently, this should not be a Very High sensitivity feature in the DFFE Screening Tool. Additionally, the No-Go Alternative is the continuation of the status quo, which involves the continuation of the current land use, without any habitat restoration.

Due to the above-mentioned discrepancies, and site assessment, the specialist report refutes the '*Very High*' sensitivity outcome of the Screening Tool and recommends that the site sensitivity rating for the Terrestrial Biodiversity Theme be regarded as '*Low*'.

Proposed mitigation:
The mining area must be demarcated and there must be no disturbance to the surrounding area. Prior to commencement, measures (cut-off drains/channels) must be put in place to manage runoff and prevent silt from entering the surrounding environment. Topsoil over the area to be mined must be removed and stored for later replacement over the mined area.

During operation, the stormwater management system must be inspected regularly and maintained. Erosion must be halted immediately, and sediment must not leave the mining area. Rehabilitation should take place concurrently with mining, as far as possible. Rehabilitation should include sloping the mined area, topsoiling, and stabilisation (including the use of geotextiles where necessary) and seeding.

Generic mitigation measures found in the Environmental Management Programme (EMPr) and standard SHERQ site 'housekeeping' will be sufficient to manage threats such as dust, fire, alien vegetation introduction and proliferation, poor waste management, as well as chemical spills.

11. ENVIRONMENTAL IMPACT ASSESSMENT

(As prescribed in Appendix 1 of the EIA Regulations, 2014:
A full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred location through the life of the activity, Including-
(i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and
(ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures)

An assessment of each potentially significant impact and risk
(including- (i) cumulative impacts, (ii) the nature, significance and consequence of the impact and risk, (iii) the extent and duration of the impact and risk occurring, (iv) the probability of the impact and risk occurring, (v) the degree to which the impact and risk can be reversed, (vi) the degree to which the impact and risk may cause irreplaceable loss of resources, and (vii) the degree to which the impact and risk can be avoided, managed or mitigated)

A full description and assessment of the environmental impacts and risks associated with the "preferred alternative" is provided below:

11.1 Soil and agricultural potential

Introduction

Topsoil is a valuable and essential resource for rehabilitation and it should therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.

Potential impacts

The potential impact of mining on the land is to reduce its agricultural potential by way of a number of different mechanisms:

1. Loss of agricultural land for the duration of mining;
2. Reduction in soil depth;
3. Impaired soil drainage;
4. Loss of topsoil and fertility during mining and stockpiling;
5. Erosion;
6. Destruction of existing contour banks;
7. The creation of steep slopes and uneven surfaces; and
8. Soil contamination from fuel spills.

Table 9: Soil and agricultural potential: summary of impact assessment

Potential impacts on soil & agric. potential:	
Nature of impact:	**Negative and direct**
Extent of impact:	**Site specific**
Consequence of impact:	**Medium**
Duration of impact:	**Medium term**
Probability of occurrence:	**Definite**
Confidence:	**Certain**
Degree to which the impact can be reversed:	**Reversible**
Degree to which the impact may cause irreplaceable loss of resources:	**Replaceable**
Significance rating of impact prior to mitigation (Neutral, Very Low, Low, Medium, or High)	**Medium**
Significance rating of impact after mitigation (Neutral, Very Low, Low, Medium, or High)	**Low**

Discussion
The overburden and topsoil will be pre-stripped and stockpiled for replacement on the land directly after mining has been completed.

The highest risk of significant impact is through loss of topsoil and through erosion. These aspects must therefore be well managed.

Erosion of topsoil can occur both as a result of stripping and stockpiling, as well as after topsoil spreading. These aspects must therefore be well managed in order for rehabilitation to be successful.

Proposed mitigation measures
The proposed mitigation measures to avoid or minimise the impact of the project on soils and the agricultural potential of the land are listed below:

1. Prevent dust by means of damping down surfaces when required.
2. Because the overburden above the mine-able gravel may exceed a thickness of 50cm, double stripping and stockpiling must be done to ensure that the topsoil remains separate from the underlying soil.
3. A depth of 40cm of topsoil must first be stripped and stockpiled before mining.
4. Thereafter, any additional overburden must be stripped and stockpiled separately from the topsoil stockpiles.
5. Topsoil is a valuable and essential resource for rehabilitation, and it should therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.
6. Topsoil stockpiles should be protected against losses by water and wind erosion. Stockpiles should be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants on the stockpiles will help to prevent erosion. Stockpiles should be no more than 2 metres high.
7. After mining, any steep slopes must be reduced to a minimum and profiled to blend with the surrounding topography. The entire surface must also be sufficiently smoothed and profiled to allow cultivation.
8. The stockpiled overburden must then be evenly spread over the entire mining area.
9. Thereafter, the stockpiled topsoil must be evenly spread on top of the overburden, across the entire mining area. The depth should be monitored during spreading to ensure that coverage is adequate and even.
10. The contour banks must be re-established to the same specifications (height, slope, distance apart) as prior to disturbance, and to the satisfaction of a soil conservation specialist.
11. The area must be planted with suitable crops again, as before mining.

11.2 Water resources

Introduction
There are no rivers, streams or wetlands in the mining permit area. The site does not overlie an important aquifer. The Brakkloof River and a tributary occurs in the valleys below the site.

Potential impacts
The potential impacts of the mining operation on water resources could include soil erosion and sediment (silt and clay) entering the river or pollution from hydrocarbon spills.

Table 10: Water resources: summary of impact assessment

Potential impacts on water resources:	
Nature of impact:	**Negative and indirect**

Extent of impact:	**Local**
Consequence of impact:	**High**
Duration of impact:	**Medium term**
Probability of occurrence:	**Possible**
Confidence:	**Sure**
Degree to which the impact can be reversed:	**Reversible**
Degree to which the impact may cause irreplaceable loss of resources:	**Replaceable**
Significance rating of impact prior to mitigation (Neutral, Very Low, Low, Medium, or High)	**Medium**
Significance rating of impact after mitigation (Neutral, Very Low, Low, Medium, or High)	**Low**

Discussion
No groundwater resources will be used by this mining operation. No mining is planned within any watercourses.

Proposed mitigation measures
The proposed mitigation measures to avoid or minimise the impact of the project on water resources are listed below:

- Establish EMPr procedures to prevent and minimise contamination from hydrocarbon spills.
- Ensure that no earth-moving activities takes place outside of the mining permit area.
- Ensure that an adequate storm-water management system is in place including berms, cut-off drains/trenches and a silt retention pond
- Only strip topsoil when necessary and comply with all topsoil mitigation measures.
- Rehabilitate the mined areas and plant crops as soon as possible.
- Invasive alien vegetation must be controlled within the mining permit area.
- Rehabilitation of the area should be planned to promote free drainage, as far as possible, and to minimise or eliminate the concentration of storm water.
- The soils should be stabilised and agricultural contours should be re-established in the floor of the mined area.

11.3 Biodiversity

Introduction
The proposed mining permit area was selected in transformed farm land in order to avoid potential impacts on biodiversity.

Potential impacts
There will be no impacts on natural vegetation as the site is situated on transformed agricultural land. The disturbance of the land could make the area susceptible to invasion by alien vegetation.

The noise and vibration caused by the earthmoving equipment will disturb smaller animals (e.g. snakes and moles). These will move away whilst operations are in progress.

Table 11: Biodiversity: summary of impact assessment

Potential impacts on biodiversity:	
Nature of impact:	**Negative and direct**
Extent of impact:	**Site specific**
Consequence of impact:	**Low**
Duration of impact:	**Temporary**

Probability of occurrence:	**Unlikely**
Confidence:	**Sure**
Degree to which the impact can be reversed:	**Reversible**
Degree to which the impact may cause irreplaceable loss of resources:	**Replaceable**
Significance rating of impact prior to mitigation (Neutral, Very Low, Low, Medium, or High)	**Low**
Significance rating of impact after mitigation (Neutral, Very Low, Low, Medium, or High)	**Very low**

Discussion
Significant potential impacts on biodiversity have been avoided through the site selection process.

Proposed mitigation measures
The proposed mitigation measures to further avoid or minimise the impact of the project on biodiversity are listed below:

- If any animals are encountered during the mining operations they must not be killed or injured, but rather removed from the site (by a suitably trained nature conservation officer, if necessary).
- Invasive alien vegetation must be controlled within the mining permit area.
- The neighbouring farms are to be strictly treated as “no-go” zones for mine workers.
- The mining area must be demarcated and there must be no disturbance to the surrounding area.
- Prior to commencement, stormwater management measures must be put in place to manage runoff and prevent silt from entering the surrounding environment.
- During operation, the stormwater management system must be inspected regularly and maintained.
- Erosion must be halted immediately, and sediment must not leave the mining area. Rehabilitation should take place concurrently with mining, as far as possible.

11.4 Dust

Introduction
Dust fallout is a standard aspect that is assessed for mining projects.

Potential impacts
Dust fallout may occur during all phases of the project (e.g. clearing, mining, loading and rehabilitation). Impacts may be aggravated during high wind conditions.

Adverse dust impacts from sand and gravel mines are uncommon beyond 250 m measured from the nearest dust generating activities. It is accepted that the greatest impacts will be within 100 m of a source and this can include both large (>30 µm) and small dust particles (Institute of Air Quality Management, IAQM Guidance on the Assessment of Mineral Dust Impacts for Planning, 2016).

There are no important receptors (e.g. homesteads) within 250 m of the proposed mining area.

Table 12: Dust: summary of impact assessment

Potential dust impacts	
Nature of impact:	**Negative and direct**
Extent of impact:	**Site specific**
Consequence of impact:	**Low**
Duration of impact:	**Short term**

Probability of occurrence:	**Definite**
Confidence:	**Certain**
Degree to which the impact can be reversed:	**Reversible**
Degree to which the impact may cause irreplaceable loss of resources:	**Replaceable**
Significance rating of impact prior to mitigation (Neutral, Very Low, Low, Medium, or High)	**Low**
Significance rating of impact after mitigation (Neutral, Very Low, Low, Medium, or High)	**Very low**

Discussion
The applicant must ensure that all activities comply with the NEM: Air Quality Act (Act 39 of 2004) and the National Dust Control Regulations (GN R827 of 2013).

The size of the mining area is small in relation to the overall size of the property. There are no activities taking place close to the mining permit area that will be adversely affected.

Noise and Dust are Occupational Health and Safety issues for mine workers. These are controlled via the Mine Health and Safety Act, 1996 (Act 29 of 1996). The employer is required to:

- supply all the necessary health and safety equipment to each employee;
- provide regular health and safety training;
- establish a system of medical surveillance;
- conduct occupational hygiene measurements; and
- assess and control risks.

Proposed mitigation measures
The proposed mitigation measures to avoid or minimise impacts related to windblown dust are as follows:

- Establish EMPr procedures to minimise the generation of dust (e.g. commercial dust binders on access tracks etc.).
- No potable water is to be used for dust suppression.
- Minimise the size of areas to be cleared at any one time.
- Rehabilitate and revegetate mining areas as soon as mining is completed.
- Ensure vehicles keep to the speed limit.
- Reduce activities during very strong winds.

11.5 Noise

Introduction
Noise is a standard aspect that is assessed for mining projects.

Potential impacts
Noise will be created by mining equipment (e.g. excavators and front end loaders) and vehicles.

Table 13: Noise: summary of impact assessment

Potential noise impacts:	
Nature of impact:	**Negative and direct**
Extent of impact:	**Site specific**
Consequence of impact:	**Very low**
Duration of impact:	**Temporary**
Probability of occurrence:	**Definite**
Confidence:	**Certain**

Degree to which the impact can be reversed:	**Reversible**
Degree to which the impact may cause irreplaceable loss of resources:	**Not applicable**
Significance rating of impact prior to mitigation (Neutral, Very Low, Low, Medium, or High)	**Very low**
Significance rating of impact after mitigation (Neutral, Very Low, Low, Medium, or High)	**Very low**

Discussion
Noise generated during mining and rehabilitation operations must comply with the Western Cape Noise Control Regulations (Provincial Notice 200/2013 of 20 June 2013).

The size of the mining area is small in relation to the overall size of the property.

Noise associated with the mining activity will not negatively impact on activities on any of the surrounding properties.

Noise and Dust are Occupational Health and Safety issues for mine workers. These are controlled via the Mine Health and Safety Act, 1996 (Act 29 of 1996). The employer is required to:

- supply all the necessary health and safety equipment to each employee;
- provide regular health and safety training;
- establish a system of medical surveillance;
- conduct occupational hygiene measurements; and
- assess and control risks.

Proposed mitigation measures
The proposed mitigation measures to avoid or minimise noise related impacts are as follows:

- Ensure all equipment and vehicles are well maintained.
- Restrict work to standard operating hours only.

11.6 Solid waste

Introduction
Solid waste is not a significant aspect for this project, however this aspect is assessed for completeness.

Potential impacts
Potential impacts may be associated with litter left by mine workers or if empty containers are left on site.

Table 14: Solid waste: summary of impact assessment

Potential solid waste impacts:	
Nature of impact:	**Negative and direct**
Extent of impact:	**Site specific**
Consequence of impact:	**Very low**
Duration of impact:	**Temporary**
Probability of occurrence:	**Possible**
Confidence:	**Sure**
Degree to which the impact can be reversed:	**Reversible**
Degree to which the impact may cause irreplaceable loss of resources:	**Not applicable**
Significance rating of impact prior to mitigation (Neutral, Very Low, Low, Medium, or High)	**Very low**

Significance rating of impact after mitigation (Neutral, Very Low, Low, Medium, or High)	**Very low**

Discussion
The mining activity itself will not generate any solid waste.

It is possible that minor solid waste may be generated if equipment is serviced (e.g. containers for lubricants and hydraulic fluid or packaging for spare parts).

The mine workers could potentially generate a small amount of solid waste (e.g. food wrapping paper and tins).

Proposed mitigation measures
The proposed mitigation measures to avoid or minimise impacts associated with solid waste are as follows:

- An integrated waste management approach, which is based on waste minimisation and incorporates reduction, recycling, re-use and disposal, where appropriate, must be used.
- Provide all workers with environmental awareness training.
- Provide a bin at the site.
- No waste is to be stored on the site and the bin must emptied at least once a week and the waste must be disposed of at a municipal waste disposal site.
- Ensure all workers comply with the requirements of the EMPr.

11.7 Heritage Resources

Introduction
No significant negative impacts to heritage resources are expected.

Potential impacts
There is a very small chance of finding unmarked buried human remains but this cannot be predicted.

Table 15: Heritage Resources: summary of impact assessment

Potential impacts on heritage resources:	
Nature of impact:	**Negative and direct**
Extent of impact:	**Site specific**
Consequence of impact:	**Low**
Duration of impact:	**Short term**
Probability of occurrence:	**Unlikely**
Confidence:	**Sure**
Degree to which the impact can be reversed:	**Reversible**
Degree to which the impact may cause irreplaceable loss of resources:	**Replaceable**
Significance rating of impact prior to mitigation (Neutral, Very Low, Low, Medium, or High)	**Very low**
Significance rating of impact after mitigation (Neutral, Very Low, Low, Medium, or High)	**Very low**

Discussion
No significant impacts on heritage resources are anticipated.

Proposed mitigation measures
Should any heritage resources, including graves or human remains, be encountered then these should be reported to Heritage Western Cape immediately.

11.8 Socio-economic

Introduction

Gravel is a basic construction material required for construction and development projects. It is a low cost but high bulk material. A significant proportion of the total cost of construction materials is related to the transport distance from a mine to a development site. This site is very conveniently located to provide construction materials for George area. The mining site is located in a rural area.

Potential impacts

The mine will provide direct employment for the employees (machine operators and truck drivers). Gravel is a basic construction material required for construction and development projects in the George area. The provision of construction material is Kirsten & Tulleken Vervoer's core business. This project will secure mineral resources for Kirsten & Tulleken Vervoer and help to sustain its business.

Concerns and objections were raised by some local residents / landowners as well as from companies renting the land for farming purposes. There is a perception that a large quarry making use of drilling & blasting methods will be established on the site resulting in significant noise, dust, visual, pollution and health impacts as well as concerns related to security and the potential impacts on existing farming activities.

However, only a small-scale earthmoving operation is planned. There will be no processing or logistical activities on site. Noise and dust impacts have been assessed separately (see above). Many of the other concerns can be resolved during the operational phase by direct communication between Kirsten & Tulleken and the local residents / farmers (e.g. the access gate, access routes across the farm land and general security issues).

The rehabilitation of the mining permit area will ensure that the land can still be used for agricultural purposes. The final landscape will blend in with the adjacent land on the farm.

Table 16: Socio-economic: summary of impact assessment

Potential impacts on socio-economic environment:	
Nature of impact:	**Positive – Direct and indirect**
Extent of impact:	**Local to regional**
Consequence of impact:	**Medium**
Duration of impact:	**Medium term**
Probability of occurrence:	**Definite**
Confidence:	**Certain**
Degree to which the impact can be reversed:	**n/a**
Degree to which the impact may cause irreplaceable loss of resources:	**n/a**
Significance rating of impact prior to mitigation (Neutral, Very Low, Low, Medium, or High)	**Medium (+ve)**
Significance rating of impact after mitigation (Neutral, Very Low, Low, Medium, or High)	**Medium (+ve)**

Discussion

The mining project will not only have a positive socio-economic impact during the life of the mine. Construction and development projects that make use of the materials provided will have a long term positive socio-economic benefit for the region.

Good housekeeping and compliance with the requirements of the EMPr are required to minimise any local short-term impacts on the neighbours.

Proposed mitigation / enhancement measures

- Ensure compliance with the requirements of the EMPr and the rehabilitation of the land.
- Maintain normal working hours.
- Ensure no dumping of rubble.
- Maintain communications with the local residents / farmers and keep a “Complaints Register” on site.

11.9 Cumulative impacts

The potential degradation of agricultural land can be considered as the most important possible cumulative impact associated with the proposed mining operation.

The impact of the proposed mining project on the soil and agricultural potential of the land has already been described, and so is not repeated.

12. "NO GO" ALTERNATIVE

The significance rating of the "no go" alternative is Neutral with respect to most of the key aspects that have been assessed for the "preferred" mining option. However if the "no go" alternative is to be considered as a realistic and feasible option then it is important to consider the impact of the "no-go" alternative on the socio-economic aspects.

12.1 Socio-economic

Introduction

Kirsten & Tulleken Vervoer's core business is the provision of construction material for construction and development projects in the George area.

Potential impacts of the "no go" alternative

The "no go" alternative would mean that Kirsten & Tulleken Vervoer will lose an economic opportunity as well as an opportunity to create employment.

Construction projects in the George area would still require gravel to be obtained from somewhere else. If the material was transported from a longer distance it would increase the cost. The increased cost would ultimately be passed on to the consumer.

Table 17: Socio-economic: summary of assessment of the "no go" alternative

Potential impacts on socio-economic environment:	
Nature of impact:	**Negative**
Extent of impact:	**Local**
Consequence of impact:	**Medium**
Duration of impact:	**Long term**
Probability of occurrence:	**Probable**
Confidence:	**Sure**
Degree to which the impact can be reversed:	**Reversible**
Degree to which the impact may cause irreplaceable loss of resources:	**Replaceable**
Significance rating of impact prior to mitigation (Neutral, Very Low, Low, Medium, or High)	**Medium**
Significance rating of impact after mitigation (Neutral, Very Low, Low, Medium, or High)	**Medium**

Discussion

The "no go" alternative will not have a positive impact on the socio-economic aspects for Kirsten & Tulleken Vervoer, its employees or for construction projects in the area.

Proposed mitigation / enhancement measures

There are no mitigation or enhancement measures for the impact of the "no go" alternative on socio-economic conditions.

13. ENVIRONMENTAL IMPACT STATEMENT

13.1 Summary of the key findings of the environmental impact assessment

The significance ratings of impacts after mitigation on the key aspects of the "preferred alternative" and the "no go" alternative are shown in the following table:

Table 18: Comparative assessment of alternatives

Aspects	"preferred alternative"	"no go alternative"
Biodiversity	Very low	Neutral
Dust	Very low	Neutral
Noise	Very low	Neutral
Solid waste	Very low	Neutral
Heritage resources	Very low	Neutral
Water resources	Low	Neutral
Soil and agricultural potential	Low	Neutral
Socio-economic	Medium (+ve)	Medium (-ve)

The assessed impacts of the proposed mine are very low for most aspects apart from on the socio-economic aspects, the soil & agricultural potential of the land and water resources. These are therefore the key aspects that should be considered by decision makers.

Key findings of the environmental impact assessment for the "preferred alternative" are summarised below:

Biodiversity: The proposed mining area has been specifically sited to avoid negative impacts on biodiversity. Provided that the applicant complies with the requirements of the EMPr then the significance of impacts on biodiversity should be 'very low'.

Dust, noise and waste: The proposed mining activity could potentially result in dust, noise and waste impacts. However, as long as the applicant complies with the requirements of the EMPr, then the significance of potential dust, noise and waste impacts should be 'very low'.

Water Resources: There are no rivers, streams or wetlands in the mining permit area. However the Brakkloof River is situated within 100 metres of the boundary of the site. Provided that the applicant complies with the requirements of the EMPr and especially with the implementation of an effective storm water management system then the significance of impacts on water resources should be 'low'.

Soil and agricultural potential: The property is zoned for agricultural purposes and therefore it is essential that the proposed mining operation does not result in degradation of the land with

consequent negative impacts on the agricultural potential of the land. The EAP considers that this is the key aspect that should be closely monitored.

The soil scientist has provided detailed mitigation and rehabilitation measures. With mitigation, the reduction in the agricultural potential is assessed as having a 'low' significance, but without mitigation it is assessed as having 'medium' significance.

Socio-economic: The site is very conveniently located to provide gravel for construction and development projects in the George area.

The proposed mining operations will not involve drilling and blasting. A simple earthmoving operation is planned.

Kirsten & Tulleken would like to maintain good relations with the local residents and farmers in the area and has committed to an open-door policy in order to resolve any issues or concerns raised during the operational life of the proposed gravel mine

The proposed post-mining agricultural land use is consistent with use of the property as defined by the zoning scheme (Agricultural Zone 1).

It is considered that the long-term socio-economic benefits of this project outweigh the negative impacts that will occur as the result of the proposed mining activities.

13.2 Final site map

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

See **Figures 2, 3, 7** and **8.**

13.3 Summary of the positive and negative impacts and risks

(a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives)

The assessed impacts of the proposed mine are very low for most aspects apart from on the socio-economic aspects, the soil & agricultural potential of the land and water resources. These are therefore the key aspects that should be considered by decision makers.

The area will be rehabilitated so that it can continue to be used for agricultural land. The final landscape will blend in with the adjacent land.

13.4 Proposed impact management objectives and outcomes

(based on the assessment, and where applicable, impact management measures from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr)

The proposed impact management objectives and outcomes for the project are as follows:

Objective 1: To ensure effective rehabilitation of the mining permit area.
Outcomes:

- The edges of the excavation are to be shaped and sloped to not more than 1:3.
- The floor is to be shaped to allow for free drainage out of the excavation.

- Upon completion of mining the cut-off drains / trenches and the silt retention pond must be filled with the material used for the berms and overburden
- Topsoil is to be replaced over the mined areas and agricultural contours are to be established.
- Crops are to be planted over the previously mined area.

Objective 2: To minimise pollution or degradation of the environment.
Outcomes:

- Ensure that no fuel or oil spills occur in the mining area.
- Ensure that no solid waste or rubble is dumped on the site.
- Ensure that portable (chemical) toilets are used.

Objective 3: To minimise impacts on the community.
Outcomes:

- To ensure that workers remain within the mining permit area.
- To operate during normal working hours only.
- To minimise the generation of noise and dust.
- To respond rapidly to any complaints received.

13.5 Proposed conditions of authorisation

(any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation)

The proposed conditions of authorisation are as follows:

- All mining and rehabilitation to be conducted as per the approved EMPr.
- Concurrent mining and rehabilitation must be done in the mining area.
- The proposed mining area must be clearly demarcated with semi-permanent markers.
- The upper 40 cm of soil must be removed and stockpiled to be returned after mining by spreading evenly over the mined area.
- Rehabilitation cannot be considered to be complete until the first cover crop is well established.
- Control measures must be implemented to prevent pollution of any water resource by oil, grease, fuel or chemicals.
- Eradicate all alien vegetation in the area during and regularly after mining.
- Appropriate pollution prevention measures must be implemented to prevent dust and noise pollution.
- Should any heritage remains be exposed during mining these must immediately be reported to Heritage Western Cape.
- Environmental audit reports should be submitted every second year.

13.6 Assumptions, uncertainties and gaps in knowledge

(a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed)

Where relevant or applicable, each specialist provided details of knowledge gaps, assumptions and uncertainties encountered in compiling the required information. The overall confidence was provided in the impact assessment tables for each aspect that was assessed. In no case was the confidence level found to be ‘unsure’.

Relevant knowledge gaps, assumptions and uncertainties are provided below.

Soil specialist

There are no important knowledge gaps, assumptions and uncertainties in the soil scientist's report.

Fresh water specialist

The fresh water ecologist reported that the following assumptions and limitations are relevant:

- Aquatic ecosystems vary both temporally and spatially. Once-off surveys such as this are therefore likely to miss certain ecological information due to seasonality, thus limiting accuracy and confidence. That said, the level of confidence in the findings is high.
- Infield soil and vegetation sampling was only undertaken within a specific focal area at the proposed site, while the remaining aquatic features were delineated at a desktop level.

Biodiversity specialist

The specialist reported that the following assumptions and limitations are relevant:

- Once-off surveys such as this are likely to miss certain ecological information due to seasonality, thus limiting accuracy and confidence. That said, the entire property was groundtruthed on foot, and the level of confidence in the findings is high.
- Infield soil and vegetation sampling was only undertaken within a specific focal area around the proposed site, while the remaining biodiversity features were assessed at a desktop level.
- No detailed assessment of fauna was undertaken.
- The vegetation information provided is based on observation not formal vegetation plots. As such species documented in this report should be considered as a list of dominant and/or indicator species and only provide a general indication of the composition of the vegetation communities.

Heritage specialist

The heritage specialist considers that the proposed mine will not have a significant impact on heritage resources. However, there is a remote possibility that buried human remains could be uncovered or exposed by mining operations.

13.7 Reasoned opinion of the EAP

(a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation)

13.7.1 Reasons why the activity should be authorised or not

This report provides an assessment of the environmental impacts associated with the proposed mining activities. The assessment has taken into account the comments provided by the relevant authorities and interested and affected parties to date. All interested and affected parties will be provided with a further 30 day period to comment on this report and the comments will be included with the final submission to the Competent Authority (i.e. the DMRE).

A specialist study was commissioned to assess the impact of the proposed mining activity on the soils and the agricultural potential of the land **(see Appendix 2).** Aquatic and terrestrial biodiversity specialist studies were undertaken **(see Appendices 3 & 4)**. Provided that an effective storm water management system is implemented the significance of potential impacts on water resources should be 'low'. Heritage Western Cape has confirmed that no significant impact on heritage resources is anticipated.

The "preferred alternative" takes into account location alternatives, activity alternatives, layout alternatives, technology alternatives and operational alternatives.

The approach taken by the applicant is that it is preferable to avoid significant negative environmental impacts, wherever possible. This is in accordance with the mitigation hierarchy, whereby avoidance is the preferred mitigation measure. The mining permit area is not located in a mapped Critical Biodiversity Area (CBA.

It is the opinion of the Environmental Assessment Practitioner (EAP) that provided that the recommended mitigation measures are implemented and mining activities are managed in accordance with the stipulations of the Environmental Management Programme and in an environmentally sound manner, the potential negative impacts associated with the implementation of the preferred alternative can be reduced to acceptable levels.

No negative impacts have been identified that are so severe as to prevent the proposed mining activity from taking place, and the activity has been assessed to have a positive socio-economic impact, especially in terms of the creation of employment and the provision of gravel for construction and development projects in the George area.

13.8 Period for which the environmental authorisation is required

The environmental authorisation is required for a five year period.

13.9 Undertaking by the EAP

It is confirmed that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic Assessment Report (BAR) and the Environmental Management Programme report (EMPr).

14. FINANCIAL PROVISION

(where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts)

The holder of a mining permit must determine and make financial provision to guarantee the availability of sufficient funds to undertake rehabilitation and remediation of the adverse environmental impacts of mining operations.

The rehabilitation and closure plans and reports required in terms of GN 1147 of 20 November 2015 (as amended) ("The Financial Provisioning Regulations") are included in **Appendix 6**.

The calculated quantum of the financial provision required for rehabilitation and closure (see **Appendix 6**) is R122 000. The Applicant must annually update and review the quantum of the financial provision

The Applicant undertakes to provide financial provision and a Guarantee will be the method of providing for the financial provision.

If the Applicant fails to rehabilitate or manage any negative impact on the environment, the DMRE may, upon written notice to the Applicant, use all or part of the financial provision to rehabilitate or manage the negative environmental impact in question.
.

15. ANY OTHER SPECIFIC INFORMATION

(any specific information that may be required by the competent authority)

None requested.

PART B: ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

16. EMPr: INTRODUCTION

16.1 Details and expertise of the EAP

The details and expertise of the EAP have been included in PART A, the Basic Assessment Report.

16.2 Description of the aspects of the activity that are covered by the EMPr

The aspects of the activity have been described in PART A, the Basic Assessment Report.

16.3 Site map

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

A site map is included in the Basic Assessment Report **(see Figures 2 and 3).**

17. IMPACT MANAGEMENT OBJECTIVES

17.1 Closure and environmental objectives

The closure and environmental objectives have already been described in the BAR and are repeated below:

Objective 1: To ensure effective rehabilitation of the mining permit area.
Outcomes:

- The edges of the excavation are to be shaped and sloped to not more than 1:3.
- The floor is to be shaped to allow for free drainage out of the excavation.
- Upon completion of mining the cut-off drains / trenches and the silt retention pond must be filled with the material used for the berms and overburden
- Topsoil is to be replaced over the mined areas and agricultural contours are to be established.
- Crops are to be planted over the previously mined area.

Objective 2: To minimise pollution or degradation of the environment.
Outcomes:

- Ensure that no fuel or oil spills occur in the mining area.
- Ensure that no solid waste or rubble is dumped on the site.
- Ensure that portable (chemical) toilets are used.

Objective 3: To minimise impacts on the community.
Outcomes:

- To ensure that workers remain within the mining permit area.
- To operate during normal working hours only.

- To minimise the generation of noise and dust.
- To respond rapidly to any complaints received.

17.2 Closure

The decommissioning of the mine will require a closure certificate in terms of section 43 of the MPRDA.

The rehabilitation and closure plans and reports required in terms of GN 1147 of 20 November 2015 (as amended) ("The Financial Provisioning Regulations") are included as **Appendix 6.**

In terms of the amendment to the EIA Regulations as published on 11 June 2021 in GN 517 it is a requirement to include the plans, reports and calculations contemplated in the Financial Provisioning Regulations as supporting documents to be submitted together with the Basic Assessment Report to the Competent Authority. These supporting documents must be subjected to a public participation process of at least 30 days before they are submitted to the Competent Authority.

The appropriate post-mining land use is to use the land for agricultural purposes.

Please see **Appendix 6** for full details of the closure plan.

17.3 Impact management outcomes

See **Section 17.1** (above).

18. IMPACT MANAGEMENT ACTIONS

(1(f) in Appendix 4 of GN R326: A description of proposed impact management actions)

18.1 Introduction

This section contains guidelines, operating procedures and rehabilitation/pollution control requirements which will be binding on the holder of the mining permit after the granting of the environmental authorisation and the approval of the Environmental Management Programme. It is essential that this portion be carefully studied, understood, implemented and adhered to at all time.

The Applicant shall ensure that this Environmental Management Programme is provided to the Mine Manager and any other person or organisation who may work on the site. The Applicant shall ensure that any person or organisation that works on the site complies with the requirements of this Environmental Management Plan.

18.2 Responsibility

- The affected environment shall be maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof.
- The environment affected by the mining operation shall be effectively rehabilitated, so that the land can be used for agricultural purposes.
- It is the responsibility of the Applicant to ensure that the manager on the site and the employees are capable of complying with all the statutory requirements that must be met in order to mine, which includes the implementation of this EMPr.
- The applicant must appoint an ECO (Environmental Control Officer).

Schedule
Ongoing, throughout the life of the mine.

18.3 Demarcation of the mining area

The mining area is to be clearly demarcated by means of painted beacons at its corners. Mining operations will only take place within this demarcated area.

Schedule
Annual check to see that corner beacons are still in place.

18.4 Community relations

The Applicant shall erect and maintain a notice board at the entrance to the Mine. The notice board shall include contact details for complaints by the neighbours and members of the public.

The Applicant shall keep a “Complaints Register” on site. The Register shall contain the contact details of the person who made the complaint, and information regarding the complaint itself. The Applicant shall respond to all complaints within seven days. Copies of all responses should be kept together with the Register.

Schedule
Ongoing, throughout the life of the mine.

18.5 Topsoil

As the site is progressively cleared and prepared for mining, the topsoil and overburden shall be removed. The topsoil and overburden should be stockpiled separately on previously cleared and level ground. The stockpiles shall not be higher than 2m in order to minimize composting.

The stockpiled topsoil must be protected from erosion. The Mine Manager must choose suitable locations for topsoil stockpiles. The topsoil stockpiles must be kept within the mining permit area.

As mining progresses and land is made available for rehabilitation, then the overburden and topsoil shall be evenly spread over the land.

Topsoil shall not be used for building or maintenance of access roads or for any purpose other than rehabilitating the land.

Schedule
Ongoing, throughout the life of the mine.

18.6 Topsoil and rehabilitation

The following measures are required to minimise the impact of the project on soils and the agricultural potential of the land:

Topsoil clearing and stockpiling

- Because the overburden above the mine-able gravel exceeds a thickness of 50cm, double stripping and stockpiling must be done to ensure that the topsoil remains separate from the underlying soil.
- A depth of 40cm of topsoil must first be stripped and stockpiled. Thereafter, any additional overburden (20 – 30 cm thickness) must be stripped and stockpiled separately from the topsoil stockpiles.
- Topsoil is a valuable and essential resource for rehabilitation and it should therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.
- Topsoil stockpiles should be protected against losses by water and wind erosion. Stockpiles should be positioned so as not to be vulnerable to erosion by wind and water.
- The establishment of plants (weeds or a cover crop) on the stockpiles will help to prevent erosion. Stockpiles should be no more than 2 metres high.

Shaping, replacing topsoil and re-stablishing contour banks

- After mining, any steep slopes at the edges of excavations, must be reduced to the possible minimum. The upper and side edges will need to remain fairly steep at a slope of 1:3.
- The stockpiled overburden (the layer taken from below the topsoil) must then be evenly spread over the entire mining area.
- Thereafter, the stockpiled topsoil must be evenly spread on top of the overburden across the entire mining area. The depth should be monitored during spreading to ensure that coverage is adequate and even.
- The existing contour banks that have been destroyed must be re-established to similar specifications (height, slope, distance apart) as prior to disturbance, but also ensuring the integrity of the run-off system as a whole.

Establishment of a cover crop

- A cover crop must be planted and established immediately after the spreading of topsoil and the contour construction, to stabilise the soil and protect it from erosion.
- It is important that rehabilitation is taken up to the point of cover crop stabilisation. Rehabilitation cannot be considered to be complete until the first cover crop is well established.
- Special protective slope stabilizing measures to prevent erosion of the steep banks will need to be taken. These may need to include fixing horizontal logs and covering with

netting. The rehabilitated area must be monitored for erosion, and appropriately stabilised if any erosion occurs.

Schedule
Ongoing, throughout the life of the mine.

18.7 Stormwater Management

A stormwater management plan has been prepared **(see Appendix 5)** and this forms part of this EMPr. This includes the detailed design prepared by Sarel Bester Civil Engineers.

The stormwater management system will consist of cut-off drains (trenches) of ±1m wide x ±0.8m deep with associated berms on the down-slope side. The cut-off drains (trenches) will lead the stormwater to a silt retention pond with a surface area of ±500m² or a size of about 20m x 20m.

18.7.1 Cut-off drains and berms

The purpose of the cut-off drains/trenches and berms are to divert potential sediment laden water to the silt retention pond and to protect the slopes and streams below the site.

The cut-off drains/trenches and berms must be inspected after every rainfall event and during periods of prolonged rainfall for scour and areas where they may breach. Any accumulated sediment deposited in the cut-off drain/trench must be removed. The outlets to the silt retention pond must be checked to ensure that these remain free from scour and erosion. Any erosion of the berms should be repaired at once.

The topsoil berm on the western side of the site will serve to protect the mining area from upslope runoff (i.e. clean water will be diverted away from the site).

18.7.2 Silt retention pond

The purpose of the silt retention pond is to prevent the flow of any sediment-laden water down the slopes and into the rivers / streams below. The silt retention pond will allow the suspended sediments to ‘settle-out’ so that the accumulated sediment can be periodically removed.

The size of the silt retention pond (500m^2) takes seepage and evaporation into account and is able to store 1.5 to 2 months of accumulated runoff from the site before overflowing.

The silt retention pond is to have a depth of about 3-4m and a freeboard of ±0.5m to protect the integrity of earth-filled wall. The freeboard is the distance between the maximum water level and the top of the earth-filled pond wall.

The silt retention pond should have an overflow of ±3m wide to protect the structure during extreme flooding. A short spillway should be prepared using packed stones and rocks to prevent down-slope erosion in the event of flooding.

The silt retention pond must be regularly inspected and any accumulated sediment must be removed. Any erosion of the pond walls must be repaired immediately. The collected sediment can be placed within a part of the mining permit area that is being rehabilitated.

Schedule
Ongoing, throughout the life of the mine.

18.8 Erosion control

Phased mining and vegetation clearance must be done. No vegetation outside of the active mining area may be disturbed until it is time for that specific area to be mined.

Concurrent mining and rehabilitation must be done so that any one time the size of the active mining area should not be larger than one hectare.

All exposed areas, after mining, must be revegetated as soon as possible with a cover crop to bind the soil and to prevent soil erosion.

If active erosion stabilisation is required then consideration can be made for one or more of the following erosion control methods:

- Mulch or chip cover
- Straw stabilising (at the rate of one bale/m² and rotavated into the top 100mm of the soil)
- Hydroseeding
- Using soil binders and anti-erosion compounds.

The following cover or packing methods can also be considered:

- Hessian cover
- Log or pole fencing

Any erosion problems within the mining area must be rectified immediately (within 48 hours) and monitored thereafter to ensure that these do not re-occur.

Schedule
Ongoing, throughout the life of the mine.

18.9 Control of invasive alien vegetation

Disturbed areas are susceptible to invasion by alien invasive vegetation (e.g. Port Jackson or Black Wattle). If the mined areas are rehabilitated back to land that is suitable for cultivation within a short period of time, it will be difficult for alien invasive vegetation to get established.

The correct procedure for the removal of invasive alien trees is as follows:

1. Hand cut the stem as low as possible to ground level and apply a suitable herbicide immediately to the exposed stump.
2. Avoid herbicide drift onto other plants.
3. Dye can be added to above mixture to ensure that individual plants are not missed.
4. Hand cutting can be performed with tools, brushcutter or chainsaw.
5. Follow up annually by pulling out the alien invasive seedlings by hand or using a “Treepopper”.
6. Take care not to damage indigenous vegetation by trampling or stacking alien vegetation on top of it.

If alien vegetation clearance is required it could be conducted by suitable contractors or, alternatively, if the company plans to employ its own workers to clear alien vegetation, then these workers should first receive training from an experienced Nature Conservator.

Schedule
Ongoing, throughout the life of the mine.

18.10 Protection of natural vegetation and animal life

All mining activities should be restricted to the proposed mining permit area only.

No plants may be removed from any area outside of the mining footprint.

No fires are permitted within or around the site.

It is anticipated that the noise and general activity will keep the animal life away from the site while the mining is ongoing. However, if animals are encountered during the mining operations they must not be killed or injured. Any animals encountered during the mining operations should be taken to a Nature Reserve. If necessary, a suitable trained nature conservation official should be called in to remove dangerous animals (e.g. venomous snakes).

Schedule
Ongoing, throughout the life of the mine.

18.11 Illegal Dumping of Rubble

Access to the site will be controlled at all times. The public will not have access to the site. The Mine will not be used for the dumping of rubble. The environmental awareness training should ensure that all workers are aware of this commitment. Any vehicle that is caught illegally dumping rubble will be reported to the George Municipality immediately.

Schedule
Ongoing, throughout the life of the mine.

18.12 Dust

The applicant must ensure that all activities comply with the NEM: Air Quality Act (Act 39 of 2004) and the National Dust Control Regulations (GN R827 of 2013).

All reasonable measures must be taken to minimise the generation of dust. These measures include:

Dust in the proposed mining area:

- Removal of vegetation shall be avoided until such time as soil stripping is required and similarly exposed surfaces (especially mined out areas) shall be rehabilitated or stabilised as soon as is practically possible.
- Minimize size of areas to be cleared at any one time.
- Rehabilitate and revegetate each mining block as soon as mining is completed.
- Excavation, handling and transport of materials shall be avoided under high wind conditions or when a visible dust plume is present.
- During high wind conditions, the Mine Manager will evaluate the situation and make recommendations as to whether dust-control measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level.
- Appropriate dust suppression includes the use of temporary stabilising measures (e.g. environmentally friendly dust binders, straw, brush packs, chipping etc.).
- Comply with all occupational hygiene requirements.

Dust along the farm access road:

- Vehicle speeds shall not exceed 35 km/h along the farm access road.
- Appropriate traffic warning signs shall be erected and maintained.
- All loads shall be covered with a tarpaulin or similar to prevent spillage and nuisance to other road users.
- Appropriate dust suppression along the access road could include the use of temporary stabilising measures (e.g. environmentally friendly dust binders, straw, brush packs, chipping etc.).

- Maintain on-going communication with the landowners (and farmers renting the land) and resolve any issues immediately.

Schedule
Ongoing, throughout the life of the mine.

18.13 Noise

Noise generated during mining and rehabilitation operations must comply with the Western Cape Noise Control Regulations (Provincial Notice 200/2013 of 20 June 2013).

The Applicant will limit the noise levels on the site by taking the following measures:

- Work will be restricted to the following operating hours:
  - 7:30 am to 4:30 pm Mondays to Thursdays
  - 7:30 am to 3:00 pm Fridays
  - Closed Saturdays, Sundays & Public Holidays
- Equipment will be regularly maintained.
- Silencers will be installed and maintained on machinery, trucks and earth moving equipment.
- No amplified music will be allowed on the site.

Schedule
Ongoing, throughout the life of the mine.

18.14 Maintenance and fuel

No workshop is planned for the site, however if emergency maintenance is required, Kirsten & Tulleken Vervoer must ensure that no pollution occurs. When servicing equipment, drip trays shall be used to collect the waste oil, hydraulic fluid and other lubricants.

Vehicles and equipment used in the mining operation must be adequately maintained so that no spillage of oil, diesel, petrol or hydraulic fluid occurs.

Any hazardous substances such as detergents, fuels, oils etc. shall be securely stored at the yard in George (i.e. not on the mining permit site)

The earth moving equipment will be re-fuelled using a diesel bowser. Drip trays are to be used when re-fuelling takes place to prevent any diesel spillage on the ground. All other vehicles (e.g. bakkies) will be refuelled at the depot or at a commercial garage.

Kirsten & Tulleken Vervoer shall ensure that there is always a supply of absorbent material available to absorb / breakdown / encapsulate minor hydrocarbon spills. The quantity of such materials shall be able to handle a minimum of a 200 litre hydrocarbon spill.

Used oil should be collected in a suitable container (e.g. 210 litre drums or a tank provided by the Rose Foundation). The container shall be kept in a protected and bunded area. When the container is almost full then this should be removed from the depot, either for resale or for recycling. (Oilkol collects used oil on behalf of the Rose Foundation and can be contacted at: 0860 107107).

Any effluents or waste containing oil, grease or other industrial substances must be collected in a suitable container and removed from the depot, either for resale, recycling or for appropriate disposal at a recognised facility.

Schedule
Ongoing, throughout the life of the mine.

18.15 Solid Waste Management

An integrated waste management approach, which is based on waste minimisation and incorporates reduction, recycling, re-use and disposal, where appropriate, must be used.

No on-site burying or dumping of any waste materials, litter or refuse shall occur. The Applicant will use vermin- and weather-proof bins with lids to store any solid waste. The lids shall be kept firmly on the bins at all times.

Bins are to be emptied at least once a week and the waste is to be disposed of at an approved municipal waste disposal facility.

Schedule
Ongoing, throughout the life of the mine.

18.16 Effluents

Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale, recycling or for appropriate disposal at a recognised facility.

Schedule
On-going, throughout the life of the mine.

18.17 Toilets

Portable toilets will be used in the mining area. These facilities shall be maintained in a hygienic state and serviced regularly.

Schedule
Ongoing, throughout the life of the mine.

18.18 Road Safety

The speed of all vehicles must be strictly controlled to avoid dangerous conditions or excessive dust. No vehicles should travel at more than 35 km/hour while driving along the access track.

Schedule
Ongoing, throughout the life of the mine.

18.19 Heritage Resources

Contractors, staff and plant operators should be briefed about what to look out for with regard to heritage resources during clearing and mining operations.

If any heritage resources, including archaeological material, palaeontological material, graves or human remains are encountered, work must cease and these must be reported to Heritage Western Cape immediately.

Schedule
Ongoing, throughout the life of the mine.

18.20 Environmental Related Emergencies and Remediation

The Applicant will operate on the principle that “prevention is better than cure” and so will institute procedures to reduce the risk of emergencies taking place. These will include ensuring that all contracts specify that the contractor is required to comply with all the environmental

measures specified in this EMPr, environmental awareness training, on-going risk assessment and emergency preparedness.

The control of incidents must comply with Section 30 of the NEMA (Act 107 of 1998).

Emergency telephone numbers
All employees shall have the telephone numbers of emergency services, including the local ambulance and firefighting service. All employees must be made aware of procedures to be followed during the environmental awareness training course.

Fire
The Applicant shall ensure that there is basic firefighting equipment available on Site at all times. This shall include at least two rubber beaters and at least one fire extinguisher.

The Applicant shall advise the relevant authority of a fire as soon as one starts and shall not wait until the fire is out of control.

Hydrocarbon spills
The Applicant shall ensure that all employees are aware of the procedures to be followed for dealing with hydrocarbon spills. The Applicant shall ensure that the necessary materials and equipment for dealing with hydrocarbon spills and leaks is available on Site at all times.

The Applicant shall ensure that there is always a supply of absorbent material readily available to absorb/ breakdown and where possible is designed to encapsulate minor hydrocarbon spillage. The quantity of such materials shall be able to handle a minimum of 200 l of hydrocarbon liquid spill.

There are a number of different products on the market, which can be used as absorbents and encapsulators of hydrocarbons. The following are examples of these products:

- Spill-Sorb
- Drizzit
- Enretech
- Peat Moss

In the event of a significant hydrocarbon spill, the following procedure is required:

- The source of the spillage shall be isolated
- The spillage must be contained using sand berms, sandbags, pre-made booms, sawdust or absorbent materials.
- The area shall be cordoned off, secured and made safe.
- If an incident has occurred then this must be reported to the Department of Environmental Affairs and Development Planning's (DEA&DP) Directorate: Pollution and Chemicals Management (Telephone: 021 483 4656).
- The Remediation and Emergency Incident Management Unit can be contacted at 021 483 0752.
- All other relevant authorities must also be notified within 24 hours of the spill (i.e. the DMRE, the DWS and the George Municipality).

Treatment and remediation of spill areas shall be undertaken to the satisfaction of the Mine Manager. Remediation may include in-situ bioremediation using appropriate products (e.g. Enretech-1) and / or the removal of the spillage together with the contaminated soil and the disposal at a recognised waste disposal facility.

Any contaminated spill kit cleaning materials must be disposed of at a hazardous waste disposal facility.

19. MONITORING & REPORTING

19.1 Introduction

Regular monitoring of the conditions of approval of the environmental authorisation and the environmental management procedures and mitigation measures in this EMPr shall be carried out by Kirsten & Tulleken Vervoer.

Kirsten & Tulleken Vervoer will ensure that compliance with the conditions of the environmental authorisation and the EMPr are audited and that an environmental audit report is submitted to the competent authority (i.e. the DMRE).

The environmental audit report is required to contain the information set out in Appendix 7 of the EIA Regulations, 2014.

Schedule
The Mine Manager will monitor compliance with the conditions of the environmental authorisation and the EMPr on an on-going basis.

The environmental audit report is to be prepared by an independent person with the relevant environmental auditing expertise every two years or more frequently if required to do so by the competent authority.

19.2 Environmental Control Officer (ECO)

If an Environmental Authorisation (EA) is issued for this application then the Applicant must appoint an ECO before commencement of mining activities and ensure that the name and contact details of the ECO is made available to the Regional Manager within 30 days of commencement The holder of EA must also ensure that an ECO is available to ensure that the activities comply with the issued EA and the approved EMPr.

The ECO must:

- Keep and maintain a detailed incident register (including any spillages of fuels, chemicals or any other material).
- Keep a complaint register on site indicating the complaint and how the issues were addressed, what measures were taken and what preventative measures were implemented to avoid reoccurrence of complaints.
- Keep records relating to monitoring and auditing on site and avail them for inspection to any relevant authorised official.
- Keep copies of all environmental reports submitted to the Department.
- Keep records of all permits, licences and authorisations required by the operation.
- Compile a monthly monitoring report and make it available to the Department, if requested.

19.3 Dust

Kirsten & Tulleken Vervoer is aware that in the event of an instruction from the George Municipality or the Air Quality Officer from the Garden Route District Municipality that dust fall monitoring may be called for to determine the extent of dust and fugitive dust emissions from the premises.

The National Dust Control Regulations, 2013 (GN R827 of 2013) provides the standards for acceptable dust fall rates. These are shown below in the following table.

Table 19: Acceptable dust fall rates

Restriction Areas	Dust fall rate (D) (mg/m²/day, 30-days average)	Permitted frequency of exceeding dust fall rate
Residential area	D < 600	Two within a year, not sequential months
Non-residential area	600 < D < 1200	Two within a year, not sequential months

The method to be used for measuring dust fall rate and the guideline for locating sampling points shall be ASTM D1739:1970, or equivalent method recognised by an internationally recognised body.

In the event that dust fall monitoring is required then Kirsten & Tulleken Vervoer will contract a suitable air quality specialist to install sampling / monitoring points at appropriate locations on the property boundaries.

If it is determined that the dust fall rate exceeds the Non-residential Standard then corrective action will be taken to ensure compliance.

19.4 Rehabilitation

The specific, measurable rehabilitation outcomes against which the effectiveness of completed rehabilitation must be measured are:

- That the topography and surface has been smoothed;
- That the cut-off drains / trenches and the silt retention pond have been filled with the material used for the berms and overburden
- That topsoil has been spread on the surface;
- That the pre-mining contour banks have been re-established to suitable specifications (height, slope, distance apart) at least as intensive as prior to disturbance, and that the integrity of the contour bank system as a whole is in place;
- That there is no visible erosion across the area, or down-slope of it as a result of mining, and that no part of the area has been left unacceptably vulnerable to erosion;
- That a successful crop has been established across the entire area.

20. ENVIRONMENTAL AWARENESS PLAN

General environmental awareness will be fostered among the project's workforce to encourage the implementation of environmentally sound practices throughout its duration. This will ensure that environmental incidents are minimised and environmental compliance maximised.

Environmental awareness will be fostered in the following manner:

- Induction course for all workers on site, before commencing work on site.
- Refresher courses as and when required
- Toolbox talks at the start of a day when workers can be alerted to particular environmental concerns associated with their tasks for that day or the area/habitat in which they are working.
- Displaying of information posters and other environmental awareness material.

The aim of training is to enable a shared understanding and common vision of the environment, the impact of the mining operation on the environment (and why this is important) and the role of mining personnel in terms of environmental management and compliance.

The induction course will consist of the following steps:

- The first step will be a background discussion about the environment: what it consists of, and how we interact with it.
- The second step will be a description of the components and phases of the mining operation.
- The third step will be a general account of how the mining operation and its associated activities can affect the environment, giving rise to Environmental Impacts.
- The fourth and most important step will be a discussion of what staff can do in order to help prevent the negative environmental impacts from degrading our environment and why the company is required to comply with the approved Environmental Management Programme.

An environmental awareness handout for mine workers is provided in **Appendix 7**.

Schedule

Employees should be provided with environmental awareness training before mining operations start. All new employees should be provided with environmental awareness training.

21. UNDERTAKING BY THE EAP

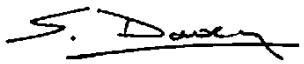
The Environmental Assessment Practitioner (EAP) herewith confirms

a) the correctness of the information provided in the BAR and EMPr;

b) the inclusion of comments and inputs from stakeholders and I&APs;

c) the inclusion of inputs and recommendations from the specialist reports where relevant;

d) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties



Signature of the environmental assessment practitioner:

Name: Stephen Davey

Name of company: Klipberg Consulting (Pty) Ltd

Date: 18 June 2024

APPROVAL EMPR

Approved in terms of the National Environmental Management Act, 1998 (Act 107 of 1998), as amended.

Signed at …….this……day of…….2024

…….
REGIONAL MANAGER: MINERAL REGULATION
WESTERN CAPE REGION
DATE:

Appendix 3:

Annexure 14

Aquatic specialist services

- Cell: 072 444 8243
- Email: debbie@upstreamconsulting.co.za
- Address: 25 Blommekloof Street, George, 6530

www.upstreamconsulting.co.za

AQUATIC BIODIVERSITY COMPLIANCE STATEMENT

FOR THE PROPOSED

MINING ON PORTION 19 OF FARM BUFFELS DRIFT 227, GEORGE

DATE: 12 January 2024

PREPARED FOR:

Stephen Davey

Klipberg Consulting

PO Box 46, Darling, 7345

sdavey@klipberg.co.za

PREPARED BY:

Debbie Fordham

Upstream Consulting

25 Blommekloof St, George, 6529

debbie@upstreamconsulting.co.za

REPORT SUMMARY

The aquatic verification study was undertaken using desktop data analysis, site assessment, GIS mapping and scientific knowledge. It was determined that there are no watercourses within the proposed mining permit area, and after mitigation, no surrounding water resources will be impacted upon by the project. Therefore, the site has a Low sensitivity, and the project will not impact aquatic biodiversity. The Compliance Statement for the Aquatic Biodiversity theme concludes that, following the implementation of a stormwater management plan and water use authorisation, the project does not require further assessment and should be deemed as acceptable.

Declaration of Independence

I, Debbie Fordham, declare that I:

- Act as an independent specialist consultant, in this application, in the field of wetland ecology;
- Do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the amended EIA Regulations, 2014 (amended);
- Have, and will have, no vested interest in the proposed activity proceeding;
- Have no, and will not engage in, conflicting interests in the undertaking of the activity;
- Undertake to disclose, to the competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the amended EIA Regulations, 2014; and
- Will provide the competent authority with access to all the information at my disposal regarding the application, whether such information is favourable to the applicant or not.

The following report has been prepared:

- As per the requirements of Section 32 (3) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) Environmental Impact Assessment Regulations 2017 as per Government Notice No. 326 Government Gazette, 7 April 2017.
- In accordance with Section 13: General Requirements for Environmental Assessment Practitioners (EAPs) and Specialists as well as per Appendix 6 of GNR

982 - Environmental Impact Assessment 2014 Regulations and the National Environmental Management Act, 1998.

- With consideration to Cape Nature's standard requirements for biodiversity assessments.
- In accordance with DEA&DP's Guideline on Involving biodiversity specialists in the EIA process.
- Independently of influence or prejudice by any parties.

Specialist's Qualifications

Debbie Fordham is an ecologist and Professional Wetland Scientist, registered with the SWSPCP (No. 3683) and SACNASP (119102). She has over 12 years of working experience, specialising in aquatic ecology. She has authored over 100 reports and applications, and she constantly contributes to the scientific and local community. Debbie holds a M.Sc. degree in Environmental Science from Rhodes University, by thesis, entitled: The geomorphic origin and evolution of the Tierkloof Wetland, a peatland dominated by *Prionium serratum* in the Western Cape. She is internationally accredited by the Council of Engineering and Scientific Specialty Boards (CESB). She is a member of the Society for Wetland Scientists and sits on the SWS Publication Committee, a member of the South African Wetland Society, the Southern African Association of Geomorphologists, and SACNASP.

<u>Tertiary Education</u>

- M.Sc. Environmental Science (Rhodes University):

Master of Science thesis entitled: The geomorphic origin, evolution and collapse of a peatland dominated by *Prionium serratum*: a case study of the Tierkloof Wetland, Western Cape.

- BA Hons. Environmental Science (Rhodes University):

Honours dissertation: The status and use of Aloe ferox. Mill in the Grahamstown commonage, South Africa.

Courses: Wetland Ecology, Environmental Water Quality /Toxicology, Biodiversity, Non-Timber Forest Products (NTFPs) and Rural Livelihoods, Environmental Impact Assessment (EIA), Statistics

- BA - Environmental Science and Geography (Rhodes University)

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF PHOTO PLATES

1 INTRODUCTION

Debbie Fordham of Upstream Consulting has been appointed by Kirsten & Tulleken Vervoer cc to undertake an aquatic biodiversity sensitivity assessment for the proposed mining permit area on Portion 19 of the Farm Buffels Drift 227, George.

The site sensitivity verification assessment, undertaken on the 3rd of December 2023, confirmed the Low aquatic biodiversity sensitivity rating of the DFFE Screening Tool and the requirement of a Compliance Statement. This report is in alignment with the requirements for the assessment and reporting of impacts of development on aquatic biodiversity (Table 1) which are set out in the 'Protocol for the assessment and reporting of environmental impacts on aquatic biodiversity published in Government Notice No. 648, Government Gazette 45421, on the 10 of May 2019, and the' Protocol for the specialist assessment and minimum report content requirements for environmental impacts on aquatic biodiversity' published in Government Notice No. 320, Government Gazette 43110, on the 20th of March 2020.

Table 1: The report content guide in relation to the minimum information and report requirements for a Compliance Statement for the Aquatic Biodiversity Theme

3	Aquatic Biodiversity Compliance Statement Requirements	Relevant section of this report:
3.1	The compliance statement must be prepared by a suitably qualified specialist registered with the SACNASP, with expertise in the field of aquatic sciences.	SWSPCP (No. 3683) and SACNASP (119102) (Page iii) and Section 9 - Specialist CV
3.2	The compliance statement must:	
3.2.1	be applicable to the preferred site and the proposed development footprint;	Section 1.1 – Location and Section 2 – Desktop Assessment
3.2.2	confirm that the site is of "low" sensitivity for aquatic biodiversity; and	Section 5 – Results and Findings
3.2.3	indicate whether or not the proposed development will have an impact on the aquatic features.	Section 7 – Compliance Statement
3.3	The compliance statement must contain, as a minimum, the following information:	
3.3.1	contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	SWSPCP (No. 3683) & SACNASP (119102) (Page iii) and Specialist CV
3.3.2	a signed statement of independence by the specialist;	Section 10
3.3.3	a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Approach and Methods Section 3.2

3.3.4	a baseline profile description of biodiversity and ecosystems of the site;	Section 5.2 – Results: Site Assessment
3.3.5	the methodology used to verify the sensitivities of the aquatic biodiversity features on the site including the equipment and modelling used where relevant;	Section 3.1 and Section3.2 – Approach and Methods
3.3.6	in the case of a linear activity, confirmation from the aquatic biodiversity specialist that, based on the mitigation and remedial measures proposed, the land can be returned to the current state within two years of completion of the construction phase;	Not applicable
3.3.7	where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr;	Section 6 -Mitigation for inclusion into EMP
3.3.8	a description of the assumptions made as well as any uncertainties or gaps in knowledge or data; and	Section 4 -Assumptions and Limitations
3.3.9	any conditions to which this statement is subjected.	Section 6 and 7 -Statement

1.1 Location

The site is located 13 km south-west of the centre of George, west of the Maalgate River, in an agricultural area (Figure 1). The proposed mining permit area is 4.9775 hectares in size (Figure 2).

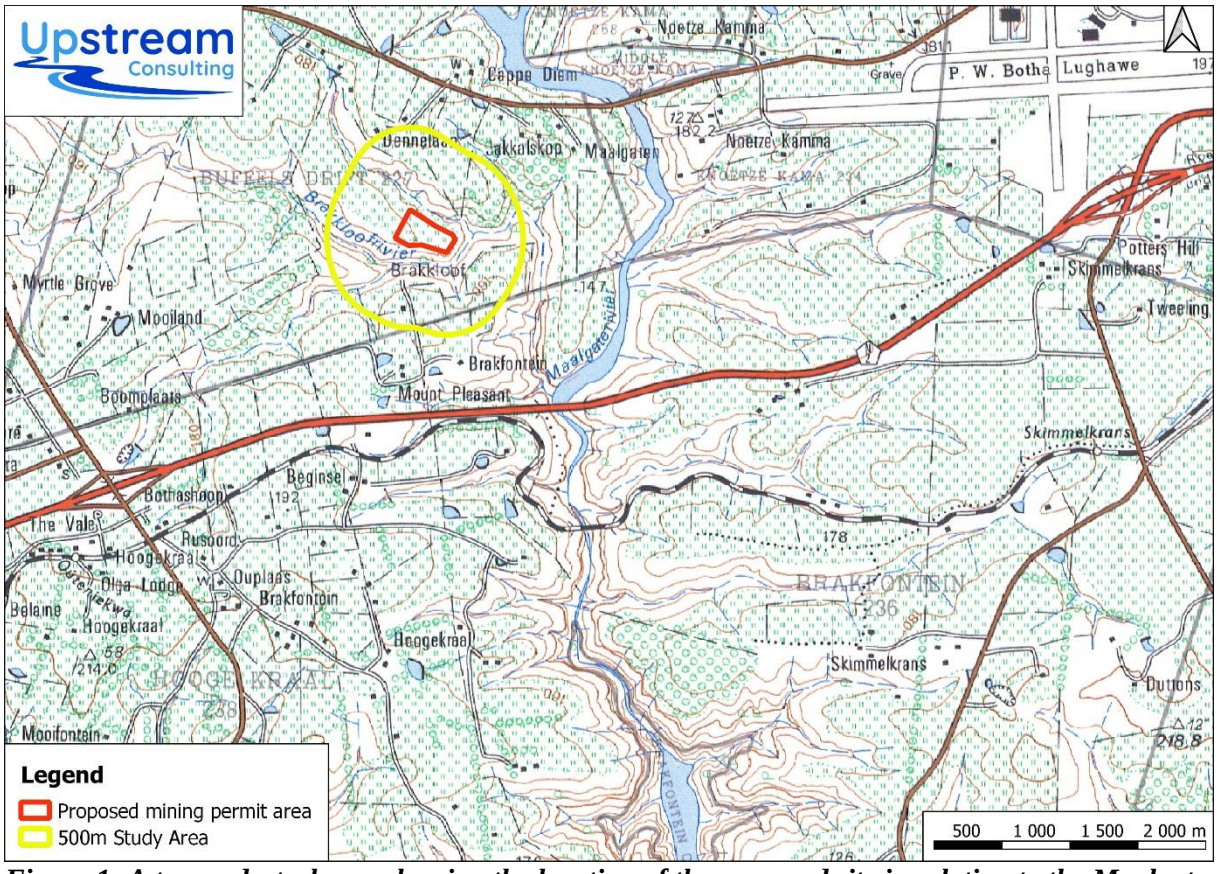


Figure 1: A topocadastral map showing the location of the proposed site in relation to the Maalgate River, N2 National Road, and George Airport

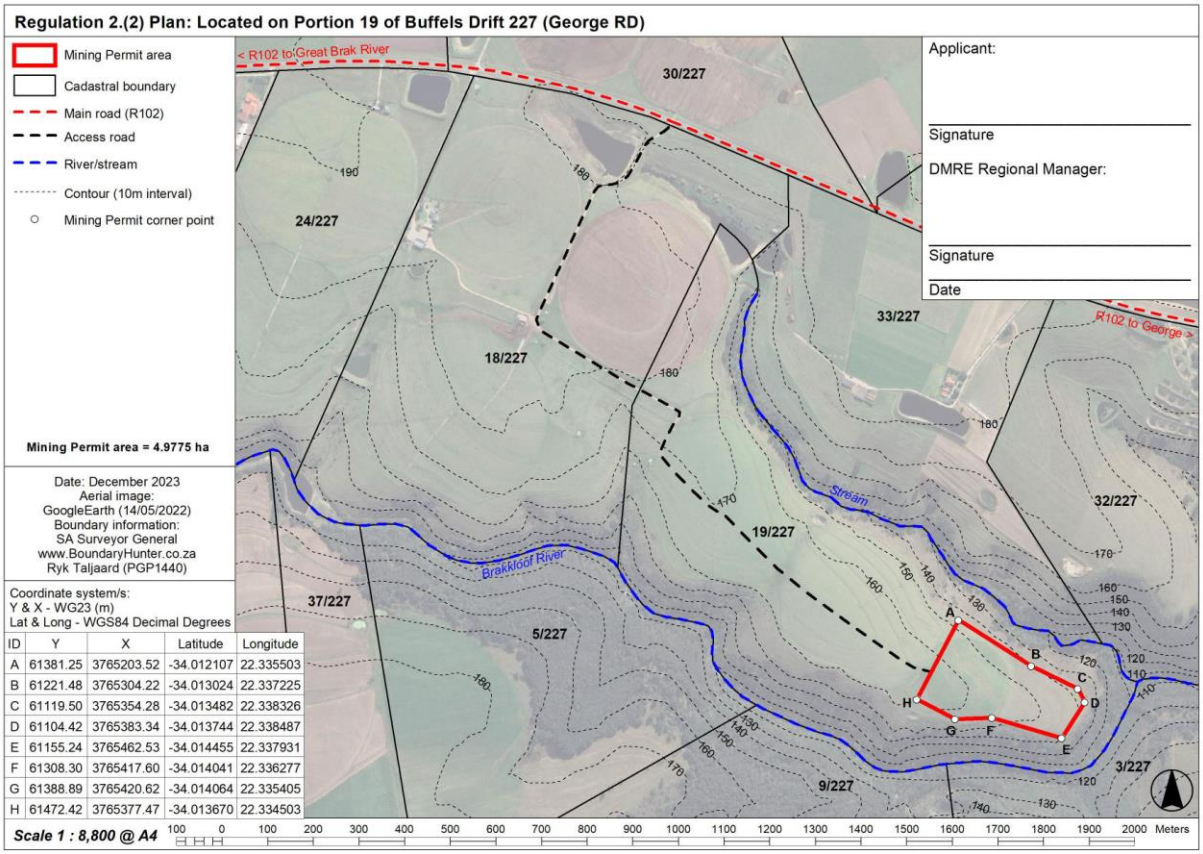


Figure 2: Site locality map provided by Klipberg Consulting (December 2023)

1.2 Current Land Use

The land is used for the cultivation of vegetables and pasture crops (western portion of the site) and for livestock grazing (Plates 1 & 2). The Western Cape Department of Agriculture Crop Census (2017) indicates the field crop boundaries mapped during the 2017/18 Western Cape commodity census and digitised using the aerial photography of 2016. According to this data, the land upon which the site is proposed is entirely under agricultural use for either cultivated vegetable crops or irrigated planted pasture (Figure 3).

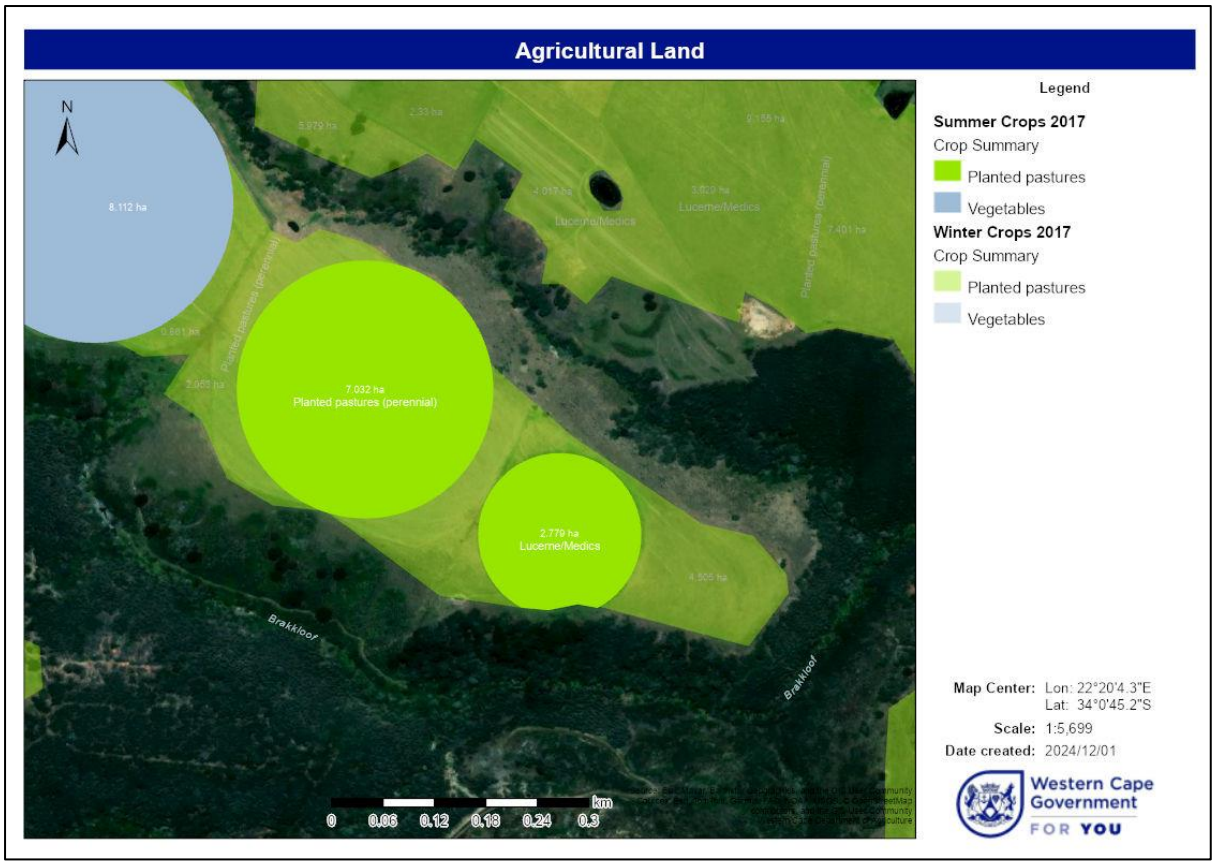


Figure 3: Irrigated planted pasture and vegetables

Plate 1: Photograph of the grazing pasture occupying the eastern portion of the proposed site upon the hilltop

Plate 2: Photograph of the cultivated and irrigated vegetables on the western portion of the proposed site, upon the upper area of the hilltop

1.3 Project proposal:

It is proposed to mine weathered granite gravel (aggregate) that will be used by customers for road construction and maintenance projects as well as for other construction and development projects in the area. The proposed mining sequence is as follows:

- Overburden clearing and stockpiling of topsoil.
- Loading of weathered granite gravel/aggregate into trucks using an excavator.
- Recording volumes in trucks.
- Final rehabilitation of slopes to not more than 1:3.
- Shaping the floor.
- Replacing topsoil, re-establishing agricultural contours, stabilising the soil surface and rehabilitating the area so that it can continue to be used for agricultural purposes.
- Concurrent mining and rehabilitation is planned so that any one time the size of the active mining area should not be larger than one hectare.

Stormwater management is proposed via a cut-off drain and silt retention pond (Figure 4). The maximum estimated duration of the proposed mining activities is 5 years. Rehabilitation of the land back to agricultural use is proposed to occur concurrently with the mining. Figure 5 shows the final rehabilitation plan.

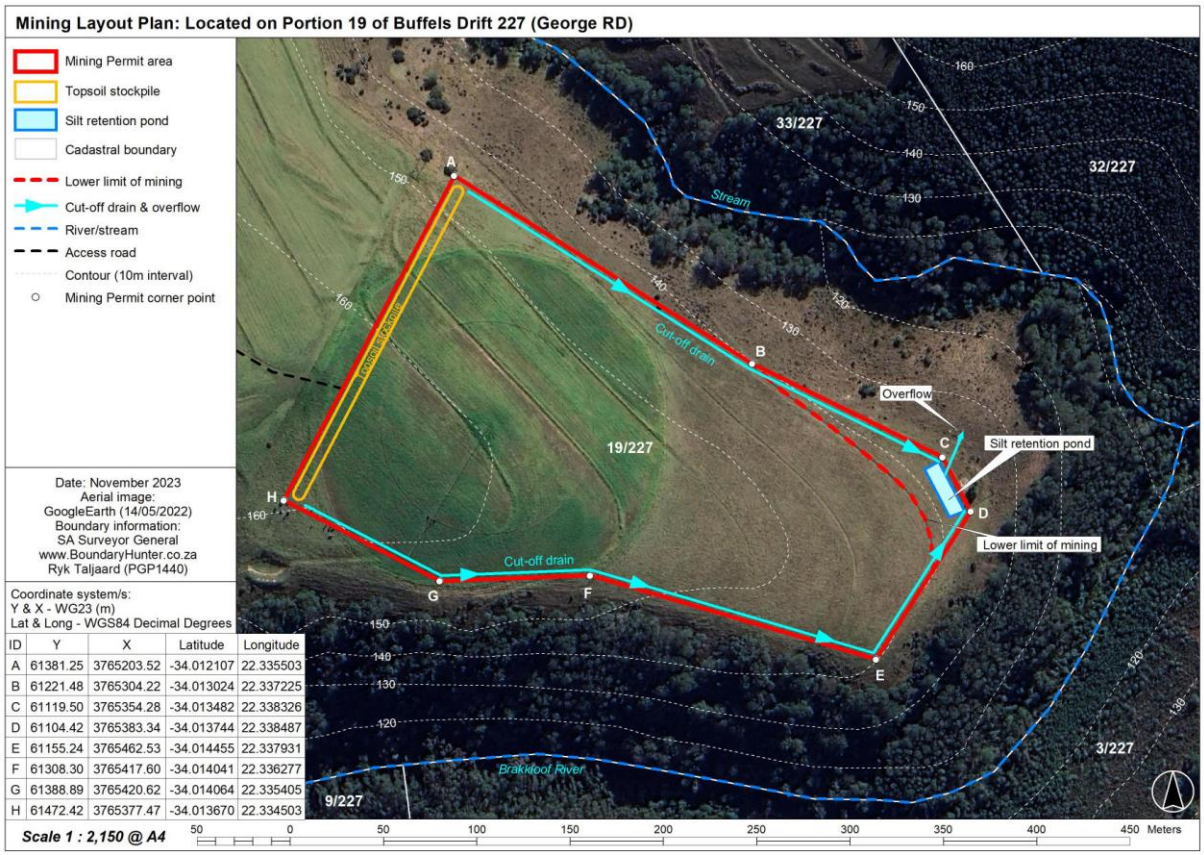


Figure 4: Mining layout plan showing the proposed stormwater management, provided by Klipberg Consulting (2023)

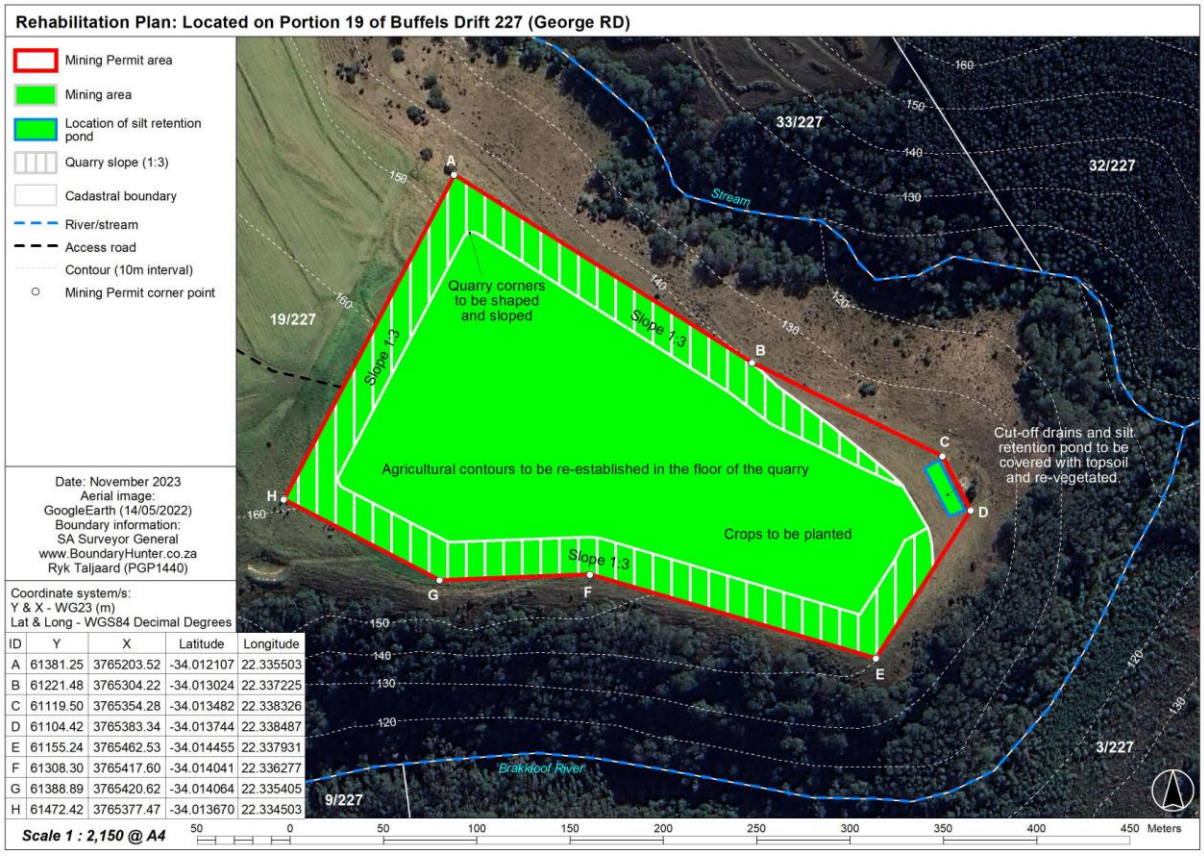


Figure 5: Rehabilitation plan provided by Klipberg Consulting (2023)

1.4 DFFE Screening Tool

Based on the DFFE Screening Tool, the site has Low Aquatic Biodiversity sensitivity (Figure 6). This sensitivity rating was confirmed following site verification. The site verification specialist findings were informed by a site visit undertaken on the 3rd of December 2023.

It was determined that there are no aquatic features within the proposed project site. Within the 500m radius study area there are five watercourses and numerous small contour dams. The mining area is located on a hillslope between the Brakkloof River and a small tributary stream. The Brakkloof River merges with the Maalgate River approximately 2km downstream. However, with the implementation of mitigation measures and stormwater management, these features will not be impacted by the project. The required water use authorisation application will ensure that there will be not indirect impacts to watercourses within the surrounding area.

It was therefore confirmed that the site sensitivity is 'Low' for the aquatic biodiversity theme and that a Compliance Statement be submitted.

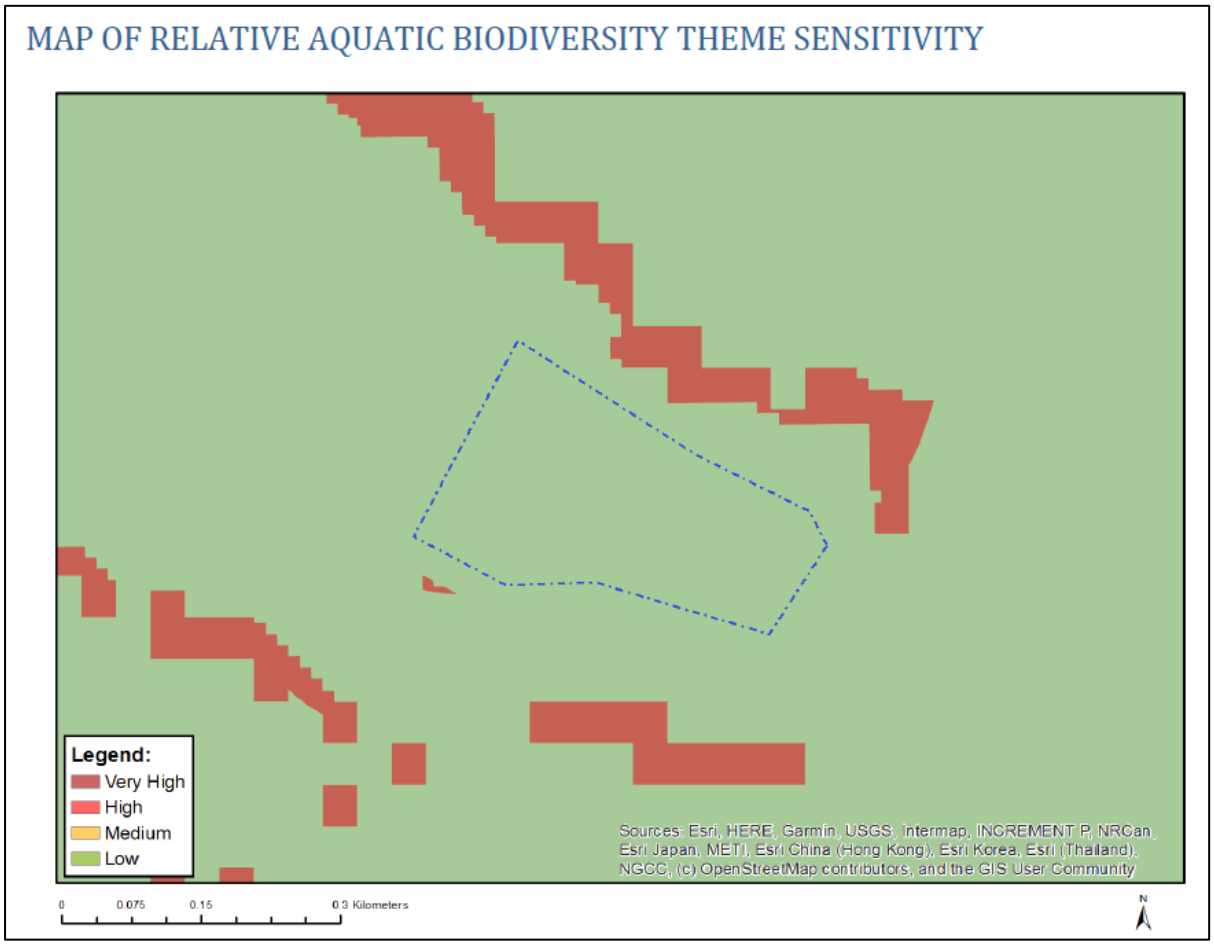


Figure 6: The DFFE Screening Tool results for the site for the aquatic biodiversity theme

1.5 Relevant Legislation

The protection of water resources is essential for sustainable development and therefore many policies and plans have been developed, and legislation promulgated, to protect these sensitive ecosystems. The proposed project must abide by the relevant legislative requirements. Table 2 below shows an outline of the environmental legislation relevant to the project.

Table 2: Relevant environmental legislation

Legislation	Relevance
South African Constitution 108 of 1996	The constitution includes the right to have the environment protected
National Environmental Management Act 107 of 1998	Outlines principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions exercised by organs of state.
Environmental Impact Assessment (EIA) Regulations	The 2014 regulations have been promulgated in terms of Chapter 5 of NEMA and were amended on 7 April 2017 in Government Notice No. R. 326. In addition, listing notices (GN 324-327) lists activities which are subject to an environmental assessment.
The National Water Act 36 of 1998	Chapter 4 of the National Water Act addresses the use of water and stipulates the various types of licensed and unlicensed entitlements to the use of water. Any uses of water which do not meet the requirements of Schedule 1 or the GAs, require a license which should be obtained from the Department of Water and Sanitation (DWS).
General Authorisations (GAs)	Government Notice R509 of 2016 was issued as a revision of the General Authorisations (No. 1191 of 1999) for section 21 (c) and (i) water uses (impeding or diverting flow or changing the bed, banks or characteristics of a watercourse) as defined under the NWA. Determining if a water use licence is required is associated with the risk of impacting on that watercourse. After mitigation, there is low risk of impacting any watercourses and therefore, based on the information provided, it can be motivated that water use authorisation through a General Authorisation application should be required.
National Environmental Management: Biodiversity Act No. 10 of 2004	This is to provide for the management and conservation of South Africa's biodiversity through the protection of species and ecosystems; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; and the establishment of a South African National Biodiversity Institute.

Conservation of Agricultural Resources Act 43 of 1967	To provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

1.6 Scope of Work

The Aquatic Biodiversity Compliance Statement was prepared by a suitably qualified specialist in the field of aquatic sciences in order to verify:

a. That the site is of low sensitivity for aquatic biodiversity; and
b. Whether or not the proposed development will have an impact on the aquatic features.

The Aquatic Biodiversity Compliance Statement contains, as a minimum, the following information:

a. Contact details and curriculum vitae of the specialist;
b. A signed statement of independence by the specialist;
c. Baseline profile description of biodiversity and ecosystems, including the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;
d. Methodology used to verify the sensitivities of the aquatic biodiversity features on the national web based environmental verification tool;
e. Methodology used to undertake the Initial Site Sensitivity Verification and preparation of the Compliance Statement, including equipment and modelling used, where relevant;
f. Where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr;
g. A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations; and any conditions to which the statement is subjected.

The above is in terms of the latest NEMA Minimum Requirements and Protocol for Specialist Aquatic Biodiversity Impact Assessment as contained in the "*Procedures to be followed for the assessment and minimum criteria for reporting of identified environmental themes of Section 45 (a) and (h) of the National Environmental Management Act, 1998, when applying for Environmental Authorization*" (10 May 2020).

2 DESKTOP ASSESSMENT

Mapping the locality of aquatic habitat is essential for classification into the different wetland and river ecosystem types across the country, which in turn can be used with other data to identify aquatic systems of conservation significance. The verification study was informed by the available datasets relevant to water resources, as well as historic and the latest aerial imagery, to develop an understanding of the fluvial processes of the study area.

2.1 Catchment characteristics

The site falls within the Southern Coastal Belt Ecoregion which is described by Kleynhans *et al.* (2005) as an area of hills and mountains with moderate to high relief and surrounding plains. The area is characterised by gently undulating topography on the coastal plateau between the Outeniqua Mountains and the ocean. The Garden Route area receives rainfall throughout the year, with the lowest amount in June and the highest amount in November. The average midday temperatures for the area range from 18.2°C in July to 27.6°C in February (Mucina and Rutherford, 2006). Land transformation for agriculture and development, as well as alien tree infestation in this area, have replaced much of the natural vegetation.

The study area is located within the K30A quaternary catchment, of which the major river is the Maalgate River (Figure 7). The site is situated on a hilltop between two drainage lines which merge before entering the Maalgate River approximately 2km downstream.

The study area falls within the Outeniqua Strategic Water Source Area for surface water (Le Maitre *et al.* 2018). A Strategic Water Source Areas (SWSA) is where the water that is supplied is considered to be of national importance for water security. Surface water SWSAs are found in areas with high rainfall and produce most of the runoff. Groundwater SWSAs have high groundwater recharge and are located where the groundwater forms a nationally important resource. There are 22 national-level SWSAs for surface water (SWSA-sw) and 37 for groundwater (SWSA-gw). The SWSA-sw in South Africa, Lesotho and Swaziland occupy 10% of the land area and generate 50% of the mean annual runoff. They support at least 60% of the population, 70% of the national economic activity, and provide about 70% of the water used for irrigation. The quarry will not impact any SWSAs as there will be no water abstraction and no permanent changes to water quality.

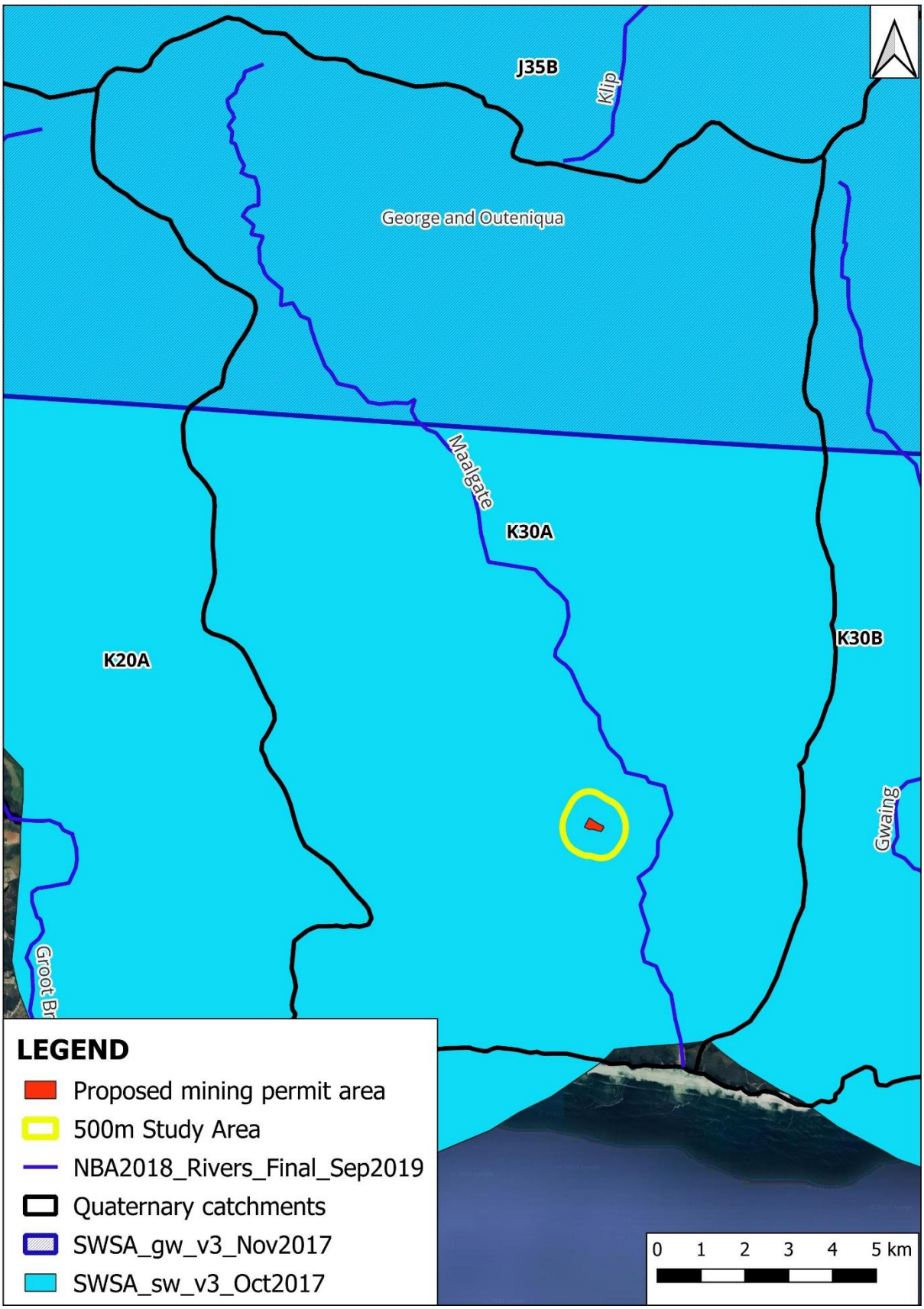


Figure 7: The proposed site in relation to the drainage network and SWSAs

2.2 South African Inventory of Inland Aquatic Ecosystems

A significant amount of the latest spatial data has been provided through the products of the 2018 National Biodiversity Assessment (NBA). The NBA is the primary tool for monitoring and reporting on the state of biodiversity in South Africa. It is used to inform policies, strategies and actions in a range of sectors for managing and conserving biodiversity more effectively. A South African Inventory of Inland Aquatic Ecosystems (SAIIAE) was established during the 2018 National Biodiversity Assessment (Van Deventer *et al.* 2018). The SAIIAE offers a collection of data layers pertaining to ecosystem types and pressures for both rivers and inland wetlands.

The National Wetland Map 5 (NWM5) includes inland wetlands and estuaries, associated with river line data and many other data sets. The NWM5 shows no wetlands within the 500m study area (Figure 8).

The NBA 2018 Rivers Map is a GIS layer which summarises the river condition, river ecosystem types, flagship and free-flowing river information (Van Deventer *et al.* 2019). The river lines data set is associated with the National Wetland Map 5 (NWM5) issued with the SAIIAE. The GIS layer of origin is the 1:500 000 rivers data layer that DWAF coded for geomorphological zonations, with added data from the Chief Directorate Surveys and Mapping's (CDSM) 1:50 000 rivers GIS layer, and information generated during the NFEPA project in 2011. The NBA 2018 Rivers data does not show any rivers within the 500m study area, only the Maalgate River to the east. The river lines depicted in Figure 8 are from the 1:500000 NGI cadastral rivers data. This shows the smaller tributary streams within the study area. The Brakkloof River flows south of the site and is joined by an unnamed tributary north of the site before merging into the Maalgate River 2km away.

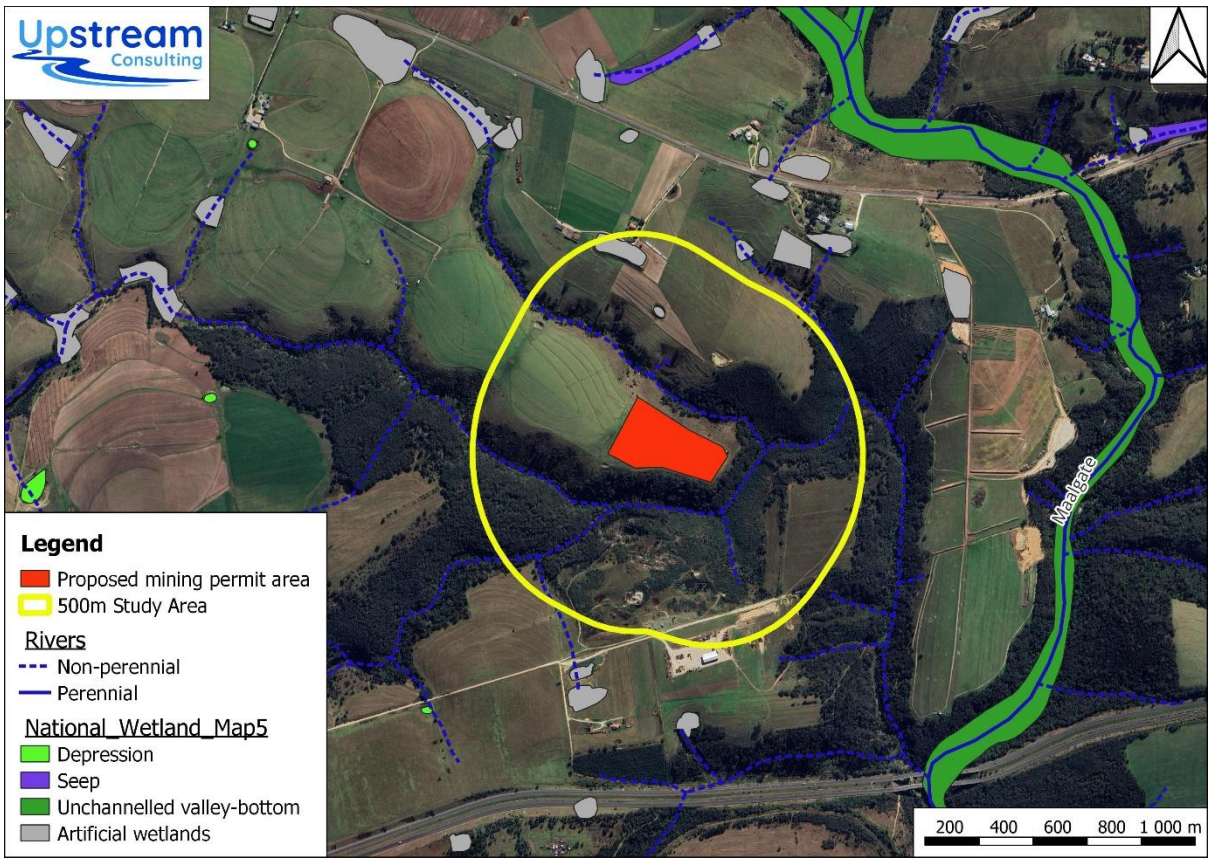


Figure 8: The site in relation to the national river and wetland inventories (CSIR, 2018)

2.3 Conservation Priority Areas

The Western Cape Biodiversity Spatial Plan (WCBSP) identifies biodiversity priority areas, CBAs and Ecological Support Areas (ESAs), which, together with Protected Areas, are important for the persistence of a viable representative sample of all ecosystem types and species, as well as the long-term ecological functioning of the landscape as a whole. The primary purpose of a map of Critical Biodiversity Areas and Ecological Support Areas is to guide decision-making about where best to locate development. Critical Biodiversity Areas (CBA's) are required to meet biodiversity targets. According to the WCBSP, these areas have high biodiversity and ecological value and therefore must be kept in a natural state without further loss of habitat or species.

Figure 9 shows that ESA2 river habitat is mapped by the 2017 BSP within the southern part of the proposed site. However, there is no evidence of riparian habitat in this area which is on the hillslope. There are areas of CBA habitat within the 500m study area which must not be allowed to deteriorate.

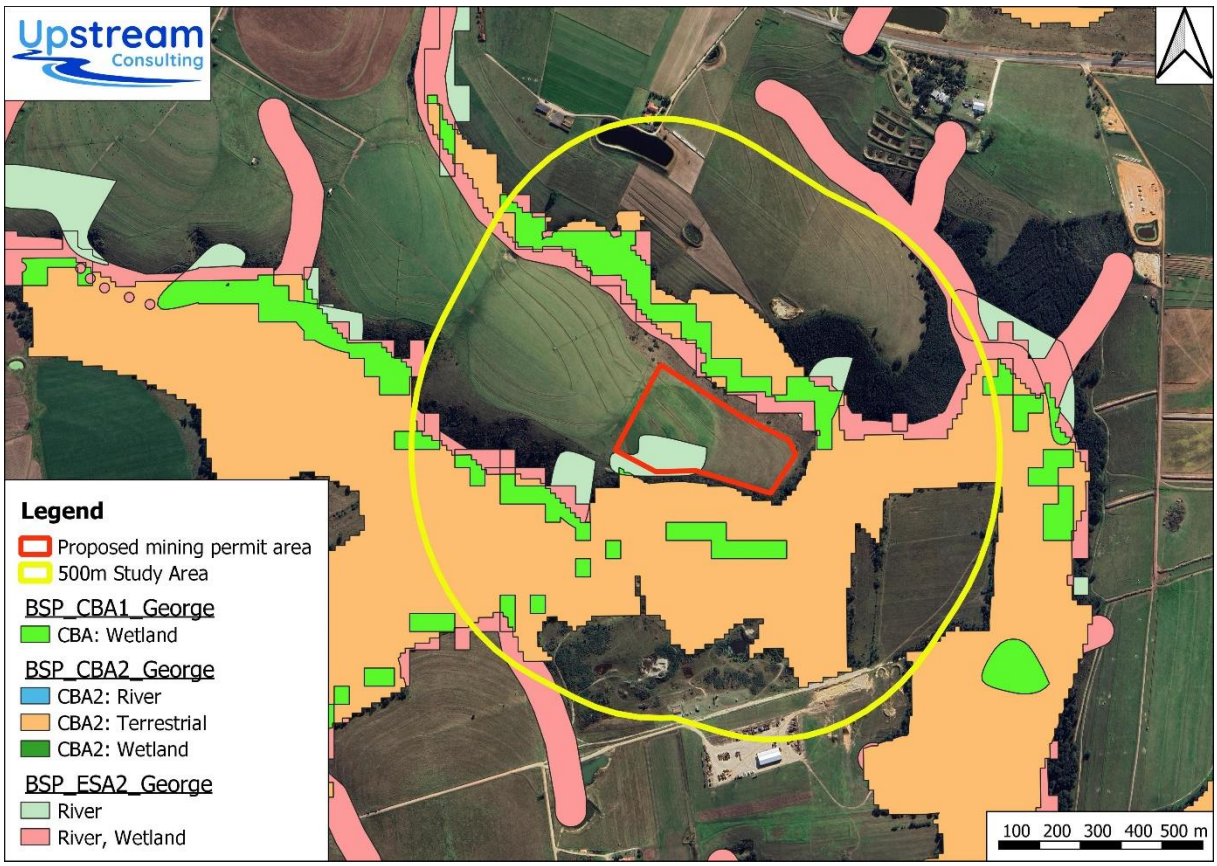


Figure 9: Map of the site in relation to aquatic priority areas identified in the WCBSP (2017)

2.4 Historic Context

Historic Google satellite imagery was found sufficient to provide an understanding of the various land use and cover changes for the study area. It shows that the area has been significantly modified from the natural condition for many decades due to agricultural land use. Additionally, the vegetation of the rivers has become heavily infested with alien invasive tree species.

3 APPROACH AND METHODS

3.1 Desktop Assessment Methods

- The contextualization of the study area was undertaken in terms of important biophysical characteristics and the latest available aquatic conservation planning information in a Geographical Information System (GIS). It is imperative to develop an understanding of the regional drainage setting and longitudinal dynamics of the watercourses. The conservation planning information aids in the determination of

importance and sensitivity, management objectives, and the significance of potential impacts.

- Following this, desktop delineation and illustration of all potential watercourses within the study area was undertaken utilising available site-specific data such as aerial photography, contour data and water resource data. Digitization and mapping were undertaken using QGIS 3.28 GIS software (Table 3).
- These results, as well as professional experience, allowed for the identification of specific areas that could potentially be impacted by the activities and therefore required groundtruthing and detailed assessment. The following data sources listed within Table 3 assisted with the assessment.

Table 3: Utilised data and associated source relevant to the proposed project

Data	Source
Google Earth Pro™ Imagery	Google Earth Pro™
DWS Eco-regions (GIS data)	DWS (2005)
South African Vegetation Map (GIS Coverage)	Mucina & Rutherford (2006-2018)
National Biodiversity Assessment Threatened Ecosystems (GIS Coverage)	SANBI (2018)
Geology	Council for Geoscience (2019)
Contours (elevation) - 5m intervals	Surveyor General
NFEPA river and wetland inventories (GIS Coverage)	CSIR (2011)
NEFPA river, wetland and estuarine FEPAs (GIS Coverage)	CSIR (2011)
Western Cape Biodiversity Framework 2017: Critical Biodiversity Areas of the Western Cape.	Pence (2017)
National Wetland Map 5	Van Deventer, et al. (2018)

3.2 Site Assessment Methods

- Infield site assessment was conducted on the 3rd of December 2023 for 4 hours to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web based environmental verification tool (Low), such as new developments, infrastructure, indigenous/pristine vegetation, etc.
- Infield assessment was undertaken with a hand-held GPS, for mapping, in alignment with standard field-based procedures in terms of the Department of Water and

Sanitation (DWAF 2008) *Updated Manual for the Identification and Delineation of Wetlands and Riparian Areas,* and a Dutch soil auger.

4 ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations are relevant:

- Aquatic ecosystems vary both temporally and spatially. Once-off surveys such as this are therefore likely to miss certain ecological information due to seasonality, thus limiting accuracy and confidence. That said, the level of confidence in the findings is high.
- Infield soil and vegetation sampling was only undertaken within a specific focal area at the proposed site, while the remaining aquatic features were delineated at a desktop level.

5 INITIAL SITE SENSITIVITY VERIFICATION RESULTS

The site assessment (conducted on the 3rd of December 2023) determined that there are no aquatic features within the proposed mining permit area. Within the 500m radius study area there are five watercourses and numerous small contour dams. The mining area is located on a hillslope between the Brakkloof River and a small tributary stream (referred to as HGM1 and HGM2 for assessment purposes). The Brakkloof River merges with the Maalgate River approximately 2km downstream. However, with the implementation of mitigation measures and stormwater management, these features will not be impacted by the project. Therefore, the sensitivity rating is Low for the aquatic biodiversity theme.

Figure 10 shows the delineated watercourses, separated into hydrogeomorphic units, within the study area. Plates 3 - 5 show photographs of the two watercourses nearest to the mining area as well as the nearby artificially constructed off-stream contour dam.

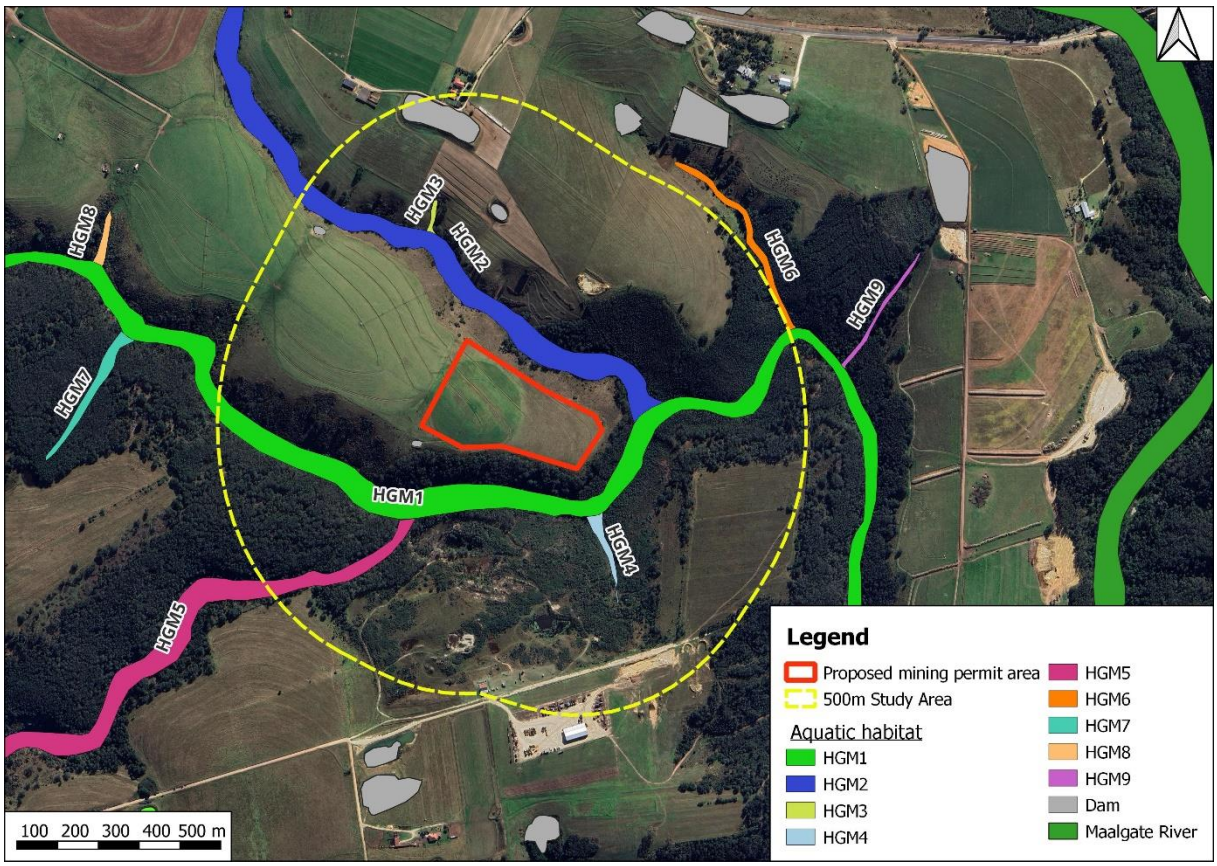


Figure 10: Aquatic habitat identified, and delineated into hydrogeomorphic (HGM) units, within 500m of the proposed mining permit area

Plate 3: Photograph of the Brakkloof River (HGM1) channel, downslope, heavily invaded by alien invasive trees

Plate 4: Photograph showing the HGM2 tributary stream flowing in a south easterly direction, downslope of the mining area, to merge with the Brakkloof River

Plate 5: Photograph of the small contour dam upslope of the mining area used for livestock drinking water

6 MITIGATION FOR INCLUSION IN THE EMP

Stormwater management should focus on introducing runoff responsibly into the receiving environment. Sedimentation must be minimised with appropriate measures. Sediment control is the practice to minimise the movement of sediment by use of temporary and permanent controls. Site management must ensure that material from the mining areas is not washed into the surrounding aquatic habitat during flood events. A stormwater management plan, including appropriately designed and placed sediment control structures, should be compiled.

Examples of sediment control structures relevant to this site include:

- Runoff diversion channel: To either protect work areas from upslope runoff (clean water diversion), or to divert sediment laden water to an appropriate sediment retention structure. Inspect after every rainfall and during periods of prolonged rainfall for scour and areas where they may breach. Remove any accumulated sediment deposited in the Runoff Diversion Channel/Bund due to low gradients and velocities. Carefully check outlets to ensure that these remain free from scour and erosion.
- Berm Interceptor: Earth dyke barrier constructed of compacted soil to intercept and divert flow of runoff water away from erodible slopes, sensitive areas or water bodies. Placed along contours and/or at toe of slope to divert run-off from sensitive areas. Used to divert water to sediment control structures.

The stormwater management infrastructure must be located outside of the buffer areas and designed to ensure the runoff from the disturbed area is not highly concentrated before exiting the mining area and entering the floodplain. Additionally, it is important to prevent any potential sources of pollution from entering the surrounding environment (e.g. litter, hydrocarbons from vehicles & machinery, etc.) and any solid domestic waste must be removed and disposed of offsite. Vehicles must be maintained to prevent leaks. Chemical toilets must not be placed within the drainage areas and should be secured against high winds. These mitigation measures are included within the EMP.

Rehabilitation of the area should be planned to promote free drainage, as far as possible, and to minimise or eliminate concentration of storm water. It is important that the soils are stabilised and that the contour berm interceptor remain.

7 COMPLIANCE STATEMENT

In conclusion, the DFFE Screening Tool resulted in Low aquatic biodiversity sensitivity rating within the site footprint but showed areas of higher sensitivity within a 500m radius of the activities. Following site verification, this Low sensitivity rating for the mining area is confirmed. There are no aquatic features that will be directly impacted by the project.

It is recommended that a condition of approval be the compilation of a detailed stormwater management plan for inclusion in the EMP. Additionally, as there are two watercourses within 100m of the mining permit area, an application for Section 21 (c) and (i) water use authorisation in terms of the National Water Act (Act 36 of 1998) should be undertaken prior to commencement. This will necessitate the compilation of a detailed stormwater management plan report, as well as a rehabilitation plan (to complement the layouts already provided), to ensure that no aquatic habitat is indirectly impacted by the mining activities.

It is therefore recommended that the site sensitivity be regarded as ‘Low’ for the aquatic biodiversity theme and that this Compliance Statement be submitted with the EIA application.

8 REFERENCES

BROMILOW, C. 2001. Problem Plants of South Africa: a Guide to the Identification and Control of more than 300 invasive plants and other weeds. Briza Publications, Pretoria.

CSIR (Council for Scientific and Industrial Research). 2010. National Aquatic Ecosystem Priority Areas (NFEPA). Council for Scientific and Industrial Research, Pretoria, South Africa.

DEPARTMENT OF WATER AFFAIRS AND FORESTRY, 1999a. Resource Directed Measures for Protection of Water Resources. Volume 4. Wetland Ecosystems Version 1.0, Pretoria.

DEPARTMENT OF WATER AFFAIRS AND FORESTRY, 2005. A Practical Field Procedure for Identification and Delineation of Wetland and Riparian areas. Edition 1, September 2005. DWAF, Pretoria.

DRIVER, A., NEL, J.L., SNADDON, K., MURRAY, K., ROUX, D.J., HILL, L., SWARTZ, E.R., MANUEL, J. AND FUNKE, N. 2011. *Implementation Manual for Aquatic Ecosystem Priority Areas. Report to the Water Research Commission*. Pretoria

DWAF. 2008. Updated Manual for the Identification and Delineation of Wetlands and Riparian Areas, prepared by M. Rountree, A. L. Batchelor, J. MacKenzie and D. Hoare. Stream Flow Reduction Activities, Department of Water Affairs and Forestry, Pretoria, South Africa

KLEYNHANS, C.J., 1996. Index of Habitat Integrity (IHI).

KOTZE, D.C., MARNEWECK, G.C., BATCHELOR, A.L., LINDLEY, D.S. AND COLLINS, N.B. 2009. WET-Ecoservices: A technique for rapidly assessing ecosystem services supplied by wetlands.

NAIMAN, R.J., AND H. DECAMPS. 1997. The ecology of interfaces -- riparian zones. Annual Review of Ecology and Systematics 28:621-658

MACFARLANE, D.M. and Bredin, I.P. 2016. Buffer zone guidelines for rivers, wetlands and estuaries. Part 2: Practical Guide. WRC Report No (tbc), Water Research Commission, Pretoria.

MACFARLANE, D.M., KOTZE, D.C., ELLERY, W.N., WALTERS, D., KOOPMAN, V., GOODMAN, P. & GOGE, C. 2008. WET-Health: A technique for rapidly assessing wetland health, Version 2.

MUCINA, L. AND RUTHERFORD, M. C. (EDS) 2006. The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.

ROGERS KH. 1995. Riparian Wetlands. In: Wetlands of South Africa, Cowan GI (ed). Department of Environmental Affairs and Tourism: Pretoria.

VAN GINKEL, C.E., GLEN, R.P., GORDAN-GRAY, K.D., CILLIERS, C.J., MUASYA AND VAN DEVENTER, P.P., 2011. Easy identification of some South African Wetland Plants (Grasses, Resticios, Sedges, Rushes, Bulrushes, Eriocaulons and Yellow-eyed grasses). WRC Report No. TT 459/10.

9 SPECIALIST CV

CURRICULUM VITAE

Debra Jane Fordham
Cell: 0724448243
Email: debbie@upstreamconsulting.co.za

Professional profile

Debbie Fordham is an ecologist and Professional Wetland Scientist, registered with the SWSPCP (No. 3683) and SACNASP (119102, Cert. Nat. Sci. Ecological Science). She has over 10 years of working experience, largely specialising in aquatic ecology. She has authored over 100 reports and applications and she constantly contributes to the scientific and local community. Debbie holds a M.Sc. degree in Environmental Science from Rhodes University, by thesis, entitled: The geomorphic origin and evolution of the Tierkloof Wetland, a peatland dominated by *Prionium serratum* in the Western Cape.

She is a certified Professional Wetland Scientist (PWS certification number 3683) by the Society for Wetland Scientists (SWS) Professional Certification Program, which is internationally accredited by the Council of Engineering and Scientific Specialty Boards (CESB). She is a member of the Society for Wetland Scientists, the South African Wetland Society, the Southern African Association of Geomorphologists, and SACNASP.

Most of her projects involve (as a minimum) in-depth wetland and river field delineation (including soil investigations via augering, vegetation identification, and classifying the hydrological characteristics), laboratory analysis (such as water quality and sediment analysis), classification, characterisation, ecological health and ecosystem functioning assessments (using the latest available tools), as well as impact rating, buffer determinations, mitigation recommendations and detailed rehabilitation plans. She is highly proficient using GIS software to incorporate accurate spatial analysis and visual aids (No Go Area maps etc.) into her reports.

Tertiary Education

- M.Sc. Environmental Science (Rhodes University):

Master of Science thesis entitled: The geomorphic origin, evolution and collapse of a peatland dominated by Prionium serratum: a case study of the Tierkloof Wetland, Western Cape.

- BA Hons. Environmental Science (Rhodes University):

Honours dissertation: The status and use of Aloe ferox. Mill in the Grahamstown commonage, South Africa.

Courses: Wetland Ecology, Environmental Water Quality /Toxicology, Biodiversity, Non-Timber Forest Products (NTFPs) and Rural Livelihoods, Environmental Impact Assessment (EIA), Statistics

- **BA -** Environmental Science and Geography (Rhodes University)

Work Experience:

- Ecological specialist (2022/03/01 – present)
- Sharples Environmental Services cc (2016/08/10 – 2022/03/01)

Position: Aquatic Ecologist and WULA Manager

- KSEMS Environmental Consulting (2015/08/10 - 2016/07/31)

Position: Wetland specialist

- AGES EC (Pty) Ltd (2014/10/01 – 2015/08/10)

Position: Aquatic Ecologist and WULA Manager

- Environmental Impact Management Services (2014/02/04-2014/02/07)

Position: Environmental consultant

- Rhodes University (2009/04/01 – 2010/12/17)

Recent Reports:

- Aquatic biodiversity impact assessment for the proposed residential development on Portion 21 of Kraaibosch 195, George
- Aquatic biodiversity impact assessment for the expansion of Kolkies River Gypsum Mine.
- Aquatic biodiversity impact assessment for the proposed residential development of Portion 7 and 8, Kranshoek
- Aquatic biodiversity impact assessment for the expansion of Maskam Gypsum Mine and the construction of a fine residue tailings dam, Vanrhynsdorp
- Aquatic biodiversity impact assessment for the construction of the Meul River pumpstation rising main sewer pipeline, George
- Aquatic biodiversity impact assessment for the expansion of Kleingeluk Quarry, Hartenbos
- Installation of A Water Pipeline from An Existing Borehole to The Herbertsdale Reservoir, Mossel Bay Municipality

- Unauthorised Clearance of Vegetation and Construction of a Dam on Farm Angeliersbosch Re/157, Prince Albert
- Rehabilitation of The Excavation of a Channel Within the Brandwag River, On the Remainder of Farm Bowerf 161, Brandwacht, Mossel Bay
- Rehabilitation Plan for activities On A Portion of Remainder Portion 104 Of the Farm Modder Rivier No 209, George
- Aquatic Impact Assessment for The Proposed Extension of Walvis Street, Mossel Bay
- Rehabilitation Plan for the transformation of agricultural land to commercial land on Farm Re 109/209, George
- Aquatic assessment for the proposed Dana Bay Access Road, near Mossel Bay
- Invasive Alien Plant Control Plan for New Horizons Mixed-Use Development on Farm Hillview No. 437, Plettenberg Bay
- Cemetery expansion on Erf 566 and 480, Melkhoutfontein
- The expansion of Goue Akker Cemetery in Beaufort West
- Construction of a bulk sewerage pipeline from Green Valley township, Wittedrift, to the Plettenberg Bay WWTW
- Periodic Maintenance of Trunk Road 31- Barrydale To Ladismith (Km 30.89 To Km 76.06), Western Cape Province
- Expansion of the Gansbaai Sand en Klip Quarry
- Seven Oaks Residential Development, Wittedrift, Plettenberg Bay
- Gran Sasso Quarry water abstraction and proposed construction of a road crossing a watercourse, Tygervalley, Cape Town
- Maintenance of Trunk Road 33/4 and Trunk Road 34/2, though Meiringspoort, Western Cape Province
- Proposed Waste Water Treatment Works, Irrigation Activities & Effluent Discharge by Parmalat SA (Pty) Ltd, Bonnievale
- Development of Remainder of Erf 562 Kurland, Plettenberg Bay
- Ladismith Cheese Water Use Application
- Construction of A 22kv Overhead Powerline, near Humansdorp, Eastern Cape
- Development of Herold’s Bay Country Estate on A Portion of Portion 7 Of Farm Buffelsfontein No. 204, Herold’s Bay
- Groot Witpan and Konga Pan salt mining, Northern Cape
- Gemsbok Horn salt pan mine prospecting

End

10 SPECIALIST DECLARATION

Specialist Company Name:	Upstream Consulting			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	NA
Specialist name:	Debbie Fordham			
Specialist Qualifications:	M.Sc. Environmental Science – Rhodes University SACNASP registered Professional Wetland Scientist			
Professional affiliation/registration:	She is a certified Professional Wetland Scientist (PWS certification number 3683) by the Society for Wetland Scientists (SWS) Professional Certification Program, which is internationally accredited by the Council of Engineering and Scientific Specialty Boards (CESB). She is SACNASP registered – no. 119102) and a member of the Society for Wetland Scientists, the South African Wetland Society, and the Southern African Association of Geomorphologists.			
Physical address:	25 Blommekloof Street, George			
Postal address:	25 Blommekloof Street, George			
Postal code:	6530	Cell:	0724448243	
Telephone:		Fax:		
E-mail:	debbie@upstreamconsulting.co.za			

DECLARATION BY THE SPECIALIST

I, __Debbie Fordham_____, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the Specialist

Name of Company: Upstream Consulting

DATE: 12/01/2024

Annexure 15

APPENDIX 6:

KIRSTEN & TULLEKEN VERVOER CC

Mining Permit on Portion 19 of the farm Buffels Drift 227 in the Magisterial District of George

Reference: WC30/5/1/3/2/10339MP

REHABILITATION AND CLOSURE PLANS & REPORTS

PLANS & REPORTS CONTEMPLATED IN THE FINANCIAL PROVISIONING REGULATIONS

(In terms of GN 1147 of 20 November 2015 (as amended): Regulations pertaining to the Financial Provision for Prospecting or Mining Operations).

Including:

ANNUAL REHABILITATION PLAN

&

ENVIRONMENTAL RISK ASSESSMENT REPORT

&

FINAL REHABILITATION AND MINE CLOSURE PLAN

&

QUANTUM OF THE FINANCIAL PROVISION

Prepared by:
Klipberg Consulting (Pty) Ltd
PO Box 46
DARLING
7345

Cell: 082 782 3727
E-mail: sdavey@klipberg.co.za

29 April 2024

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. SUMMARY

These plans and reports have been prepared in order to ensure that the Applicant complies with Financial Provisioning Regulations published in terms of GN 1147 of 20 November 2015 (as amended) i.e. The Regulations pertaining to the Financial Provision for Prospecting or Mining Operations.

The Applicant or the holder of a mining permit must determine and make financial provision to guarantee the availability of sufficient funds to undertake rehabilitation and remediation of the adverse environmental impacts of mining operations.

The applicant must determine the financial provision through a detailed itemisation of all activities and costs, calculated based on the actual costs of implementation of the measures required for:

a) Annual rehabilitation, as reflected in an **Annual Rehabilitation Plan**.
b) Final rehabilitation and closure of the mining operations at the end of the life of operations, as reflected in a **Final Rehabilitation and Mine Closure Plan**.
c) Remediation of latent or residual environmental impacts which may become known in the future, as reflected in the **Environmental Risk Assessment Report**.

For the application process these plans and reports have been prepared so that they can be considered and submitted as supporting documents together with the Basic Assessment Report.

If the mining permit is granted, then these Financial Provisioning reports and plans should be prepared as stand-alone documents in future years.

Annual Rehabilitation Plan:
Upon approval of the mining permit application and receipt of the EA, the permit holder will annually report on the planned rehabilitation actions.

Rehabilitation and Mine Closure Plan:
The mining permit area is located on transformed farm land and rehabilitation and closure will involve shaping and sloping the edges of the excavation as well as the final floor, replacing topsoil, stabilising the soil surface and establishing agricultural contours so that the area can continue to be used for agricultural purposes.

Environmental Risk Assessment Report:
It is proposed to mine weathered granite gravel and aggregate on transformed agricultural land. Gravel and stone aggregate are inert natural materials that do not cause pollution or acid mine drainage. At this stage, no latent risks that will potentially arise during or after the closure phase of the mining permit have been identified.

2. DETAILS OF THE HOLDER

2.1 Details of the holder of the permit or right

Note: The Applicant will only become the holder if the Environmental Authorisation & subsequent Mining Permit are granted.

ITEM	CONTACT DETAILS
Name of the Applicant:	Kirsten & Tulleken Vervoer CC
Tel no:	044 875 8035
Fax no:	044 875 0273
Cellular no:	079 268 6365
Contact person:	Jasper van der Westhuizen
E-mail address:	jasper@tulleken.co.za
Postal address:	PO Box 1200, George, 6530
Physical address:	Binnestraat 26, George Industria

2.2 Details of the property

Registered Property Name:	Portion 19 of the farm Buffels Drift 227
Local Authority:	George Municipality
Magisterial District:	George
Extent of the property:	55.1787 hectares
Extent of mining permit application area:	4.9775 hectares
Landowners:	Gerhard Adam Barnard & Marian Lyn Barnard
LPI 21-digit codes:	C02700000000022700019
Distance and direction from the nearest town	The site is located 13 km south-west of the centre of George.

2.3 Details of the person who has prepared the plans and reports

(3(a)(i) & (ii)) details of the person or persons that prepared the plan; and professional registrations and experience of the person or persons)

The financial provisioning reports were prepared by Stephen Davey (BSc. Hons: Geochemistry and M. Phil: Environmental Management).

He is registered as an Environmental Assessment Practitioner (EAP) by the Environmental Assessment Practitioners Association of South Africa (EAPSA), Registration No. 2019/159.

He completed a course in environmental auditing at the North West University in Potchefstroom in 2001.

Stephen Davey is registered as a Scientist with the South African Council for Natural Scientific Professions (SACNASP), Registration No. 400087/88.

He has 19 years of experience as a geologist working for large mining companies i.e. Anglovaal, Impala Platinum, Gencor and Billiton. He has a further 23 years of experience as an environmental consultant on a wide variety of projects, but focussing on mining and prospecting.

Full details are included in the BAR & EMPr that has been prepared for this application.

ANNUAL REHABILITATION PLAN

3. INTRODUCTION: ANNUAL REHABILITATION PLAN

3.1 Objectives of the annual rehabilitation plan

The objectives of the annual rehabilitation plan are to:

a) review concurrent rehabilitation and remediation activities already implemented;
b) establish rehabilitation and remediation goals and outcomes for the forthcoming 12 months, which contribute to the gradual achievement of the post-mining land use, closure vision and objectives identified in the holder's final rehabilitation and mine closure plan;
c) establish a plan, schedule and budget for rehabilitation for the forthcoming 12 months;
d) identify and address shortcomings experienced in the preceding 12 months of rehabilitation; and
e) evaluate and update the cost of rehabilitation for the 12 month period and for closure, for purposes of supplementing the financial provision guarantee or other financial provision instrument.

3.2 Content of the annual rehabilitation plan

The annual rehabilitation plan will be relevant for a period of 1 year, after which the plan will be updated by the holder of a right or permit to reflect progress relating to rehabilitation and remediation activities in the preceding 12 months and to establish a plan, schedule and budget for the forthcoming 12 months. The annual rehabilitation plan must contain information that defines concurrent rehabilitation and remediation activities for the forthcoming 12 months and how these relate to the operations' closure vision, as detailed in the final rehabilitation, decommissioning and mine closure plan, must indicate what closure objectives and criteria are being achieved through the implementation of the plan & must be measurable and auditable.

3.3 Timeframes

The timeframe for the implementation of the proposed rehabilitation activities is during the first year of operations at the mining permit site from the date when the mining permit is granted.

4. ENVIRONMENTAL & PROJECT CONTEXT

The environmental and project context is fully described in the Basic Assessment Report.

No permanent infrastructure will be established on the site.

In summary the proposed mining permit area is 4.9775 hectares in size. The site is located approximately 13 km south-west of the centre of George.

The site is used for agricultural purposes (vegetables and planted pasture).

The maximum estimated duration of the proposed gravel and stone aggregate mining activities is 5 years. Concurrent mining and rehabilitation is planned. The site will be rehabilitated so that it can continue to be used for agricultural purposes.

5. RESULTS OF MONITORING OF RISKS

The activity has not commenced yet. Monitoring, auditing and reporting requirements are summarised in **Tables 9 and 10**.

6. SHORTCOMINGS IDENTIFIED

(3(d) an identification of shortcomings experienced in the preceding 12 months)

Not applicable as the activity has not commenced yet.

7. PLANNED ANNUAL REHABILITATION ACTIVITIES

(3(e) details of the planned annual rehabilitation and remediation activities or measures for the forthcoming 12 months)

The planned annual rehabilitation activities are:

- Rehabilitation of slopes to not more than 1:3.
- Shaping the floor of the mined area.
- Replacing topsoil and stabilising the soil surface.
- Rehabilitating the mined area so that it can continue to be used for agricultural purposes.

7.1 If no areas available for annual rehabilitation

(3(e)(i) if no areas are available for annual rehabilitation and remediation concurrent with mining, an indication to that effect and motivation why no annual rehabilitation or remediation can be undertaken)

Concurrent rehabilitation will be possible.

7.2 Where areas are available for annual rehabilitation

Table 1: Details of planned annual rehabilitation activities

Planned annual rehabilitation and remediation activities
(aa) nature or type of activity and associated infrastructure;
Rehabilitating slopes, shaping the floor, replacing topsoil & planting crops.
(bb) planned remaining life of the activity under consideration;
5 years
(cc) area already disturbed or planned to be disturbed in the period of review;
No area disturbed so far. Mining Permit has not been granted yet.
(dd) percentage of the already disturbed or planned to be disturbed area available for concurrent rehabilitation and remediation activities;
No areas disturbed so far.
(ee) percentage of the already disturbed or planned to be disturbed area available as per (dd) and on which concurrent rehabilitation and remediation can be undertaken;
Not applicable yet
(ff) notes to indicate why total available or planned to be available area differs from area already disturbed or planned to be disturbed;
Not applicable yet
(gg) notes to indicate why concurrent rehabilitation will not be undertaken on the full available or planned to be available area;
Not applicable yet.
(hh) details of rehabilitation activity planned on this area for the period of review;
Rehabilitating slopes, shaping the floor, replacing topsoil & planting crops.

Planned annual rehabilitation and remediation activities
(ii) the pertinent closure objectives and performance targets that will be addressed in the forthcoming year, which objectives and targets are aligned to the final rehabilitation, decommissioning and mine closure plan;
• *Rehabilitation of slopes to not more than 1:3.* • *Shaping the floor of the mined area.* • *Replacing topsoil and stabilising the soil surface.* • *Rehabilitating the mined area so that it can continue to be used for agricultural purposes.*
(jj) description of the relevant closure design criteria adopted in the annual rehabilitation and remediation activities and the expected final land use once all rehabilitation and remediation activities are complete for the activity or aspect
• *The edges of the excavation are to be shaped and sloped to not more than 1:3.* • *The floor is to be shaped to allow for free drainage out of the excavation.* • *Topsoil is to be replaced over the mined areas and agricultural contours are to be established.* • *Pasture crops are to be planted over the previously mined area.* *The expected final land use will be to continue to use the land for agricultural purposes.*

7.3 Site plan

(3(e)(iii) a site plan indicating at least the total area disturbed, area available for rehabilitation and remediation and the area to be rehabilitated or remediated per aspect or activity)

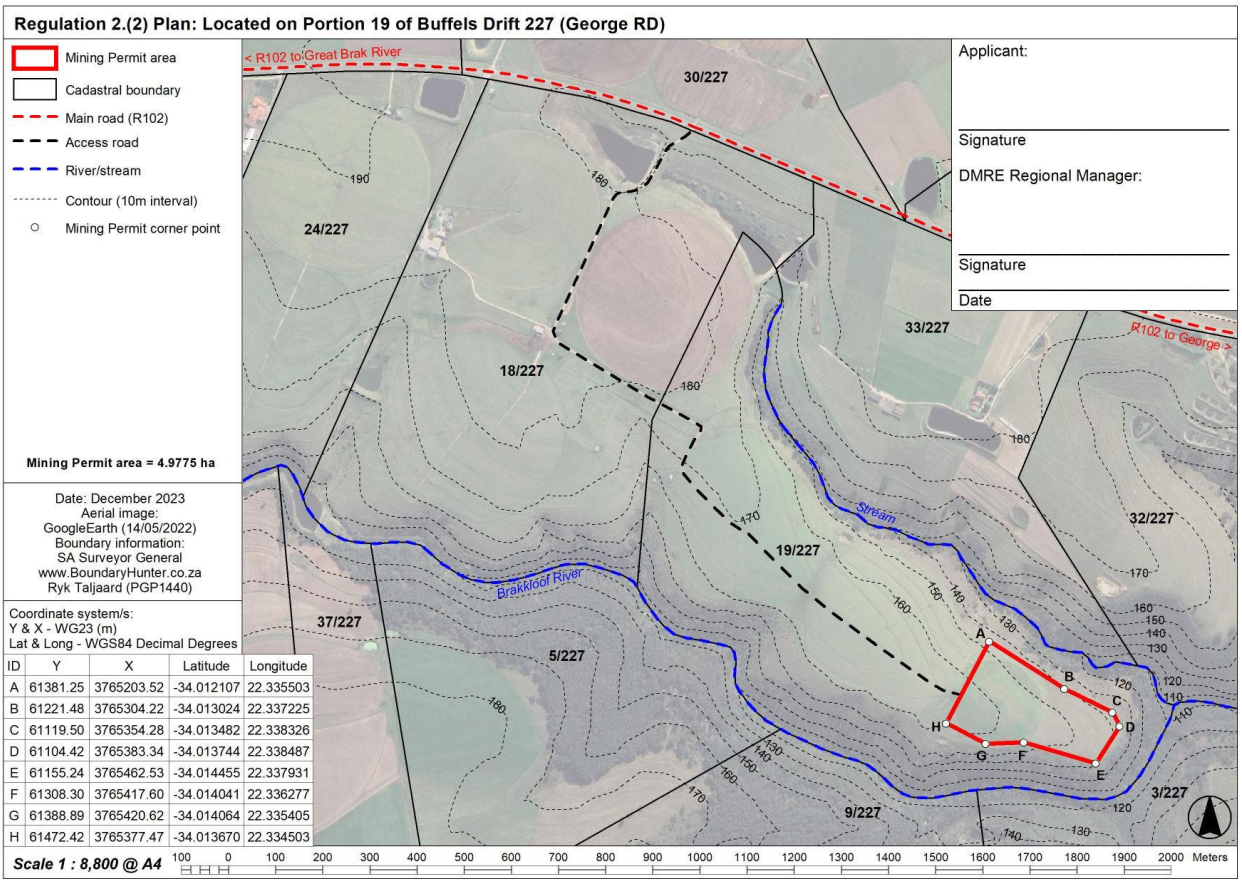


Figure 1: Site plan

Note: The application has not been granted yet and no area has been disturbed by mining.

8. REVIEW OF THE PREVIOUS YEAR'S REHABILITATION ACTIVITIES

Table 2: Details of the previous year's rehabilitation activities

Details of the previous year's rehabilitation activities
(aa) area planned to be rehabilitated and remediated during the plan under review;
It is planned to mine & rehabilitate one hectare per year.
(bb) actual area rehabilitation or remediated;
No mining has taken place so far
(cc) if the variance between planned and actual exceeds 15%, motivation indicating reasons for the inability to rehabilitate or remediate the full area
Not applicable yet

9. COST ESTIMATION: ANNUAL REHABILITATION

The annual rehabilitation cost estimation methodology makes use of the average market prices for the transport and rental of earth moving equipment to undertake the rehabilitation of the mined area.

It is assumed that one hectare of land will be mined per year. The cost estimate for annual rehabilitation is summarised in the following table:

Table 3: Cost estimate – annual rehabilitation

Item	Unit rate	Number of units/ hours /days	Amount
Transportation of equipment to site	R4 400	1	R4 400
Shaping & sloping of the excavation edges (hours)	R475	8	R3 800
Shaping and sloping of mine floor (hours)	R475	8	R3 800
Hauling and spreading of topsoil over mined areas (hours)	R475	8	R3 800
Seeding and planting / hectare	R5 250	1	R5 250
Labour (days)	R850	2	R1 700
Sub-total (1)			R22 750
10% Supervision fees			R2 275
Sub-total (2)			R25 025
VAT	15%		R3 754
TOTAL			**R28 779**
		say	**R29 000**

ENVIRONMENTAL RISK ASSESSMENT REPORT

10. INTRODUCTION: ENVIRONMENTAL RISK ASSESSMENT

10.1 Objectives of the environmental risk assessment report

The objective of the environmental risk assessment report is to

(a) ensure timeous risk reduction through appropriate interventions;
(b) identify and quantify the potential latent environmental risks related to post closure;
(c) detail the approach to managing the risks;
(d) quantify the potential liabilities associated with the management of the risks; and
(e) outline monitoring, auditing and reporting requirements.

10.2 Content of the environmental risk assessment report

The environmental risk assessment report must contain information that is necessary to determine the potential financial liability associated with the management of latent environmental liabilities post closure, keeping in mind the proposed post-mining end use, once the initial relinquishment criteria has been achieved.

11. DETAILS OF THE ASSESSMENT PROCESS

(3(b) details of the assessment process used to identify and quantify the latent risks, including:
(i) a description of the risk assessment methodology inclusive of risk identification and quantification;
(ii) substantiation why each risk is latent, including why the risk was not or could not be mitigated during concurrent rehabilitation and remediation or during the implementation of the final rehabilitation, decommission and closure plan;
(iii) a detailed description of the drivers that could result in the manifestation of the risks, to be presented within the context of closure actions already having been implemented during the execution of concurrent rehabilitation or during the implementation of the final rehabilitation, decommission and closure plan;
(iv) a description of the expected timeframe in which the risk is likely to manifest, typically as expected years after closure, and the duration of the impact, including motivation to support these timeframes;
(v) a detailed description of the triggers which can be used to identify that the risk is imminent or has manifested, how this will be measured and any cost implications thereof;
(vi) results and findings of the risk assessment;
(vii) an explanation of changes to the risk assessment results as applicable in annual updates to the plan)

11.1 Risk assessment methodology

The risk assessment methodology is divided into two levels.

Screening level environmental risk assessment

The first level is the undertaking of a screening level environmental risk assessment where:
(i) all possible environmental risks are identified, including those which appear to be insignificant;
(ii) the process is based on the input from existing data
(iii) the risks that are considered are qualitatively ranked as:

(aa) a potential significant risk

(bb) an uncertain risk
(cc) an insignificant risk

Risk significance is a function of likelihood and consequence.

The rating system is shown below:

Table 4: Risk rating system

Likelihood	Score	Consequence
Very unlikely	1	Minor (not measurable)
Fairly unlikely	2	Low (just measurable)
50/50 chance	3	Moderate (affects stress or safety or economics)
Fairly likely	4	High (affects health or well-being or sustainability)
Very likely	5	Very high (life threatening or non-sustainable)

Rating System from: *Mentis M (2010). Environmental Risk Management in South Africa, Hillcrest.*

The risk matrix is shown below:

Table 5: Risk matrix

Likelihood	**Very likely (5)**	Low	Med	High	High	High
	Fairly likely (4)	Low	Low	Med	High	High
	50/50 chance (3)	Low	Low	Low	Med	High
	Fairly unlikely (2)	Low	Low	Low	Low	Med
	Very unlikely (1)	Low	Low	Low	Low	Low
		Minor (1)	**Low (2)**	**Moderate (3)**	**High (4)**	**Very high (5)**
		Consequence				

Ratings with a high risk significance are potential significant risks (aa).

Ratings with a medium risk significance are uncertain risks (bb).

Ratings with a low risk significance are insignificant risks (cc).

Second level risk assessment

The second level risk assessment is undertaken on issues classified as potential significant risks where:
(i) appropriate sampling, data collection and monitoring can be carried out;
(ii) more realistic assumptions and / or actual measurements be made;
(iii) a more quantitative risk assessment can be undertaken, again classifying risks as posing a significant potential significant risk or insignificant risk.

11.2 Results & findings of the risk assessment

11.2.1 Illustrative screening level risk assessment

All possible environmental risks associated with the mining permit area will be identified, listed and ranked in **Table 3**. The qualitative risk assessment will be compiled after an Environmental

Audit Report on the site has been prepared i.e. with detailed knowledge of the status of the area.

As mining has not yet commenced at the site, this section of the report is indicative only in order to illustrate to the Authorities and the Interested & Affected Parties how the risk assessment will be conducted.

Table 6: Illustrative Screening Level Qualitative Risk Assessment

Risk	Likelihood	Consequence	Ranking
Soil: The risk that topsoil was not replaced as per the EMP.	Fairly unlikely	High	Potential significant risk (aa)
Alien vegetation: That alien invasive trees have established on the site after rehabilitation.	Fairly unlikely	Moderate	Insignificant risk (cc)
Surface water: That the post mining surface results in water damming up or causes soil erosion.	Very unlikely	Low	Insignificant risk (cc)
Groundwater: That diesel and oil spillages have occurred on the site impacting on groundwater.	50/50 chance	High	Potential significant risk (aa)
Land capability and future land use: That after mining the future land use capability will be reduced.	Fairly unlikely	High	Potential significant risk (aa)
Air quality: That there will be residual impacts on air quality after mining.	Very unlikely	Minor	Insignificant risk (cc)
Noise: That there will be residual noise impacts after mining.	Very unlikely	Minor	Insignificant risk (cc)

Risk	Likelihood	Consequence	Ranking
Archaeology & Cultural Heritage: That degradation will occur to archaeological or cultural heritage sites.	Very unlikely	Minor	Insignificant risk (cc)
Socio-economic: That closure of the mine will result in job losses.	Very likely	High	Potential significant risk (aa)
Solid waste: That solid waste was dumped at the site, affecting future land capability.	Very unlikely	Moderate	Insignificant risk (cc)

11.2.2 Illustrative second level risk assessment

Four potential significant risks were identified by the illustrative screening level qualitative risk assessment.

These are:

- **Socio-economic:** The loss of jobs as a result of the closure of the mine.
- **Land-capability and future land-use:** That after mining the future land use capability could be reduced.
- **Groundwater**: That diesel and oil spillages on site have occurred on the site.
- **Soil:** That topsoil was not replaced as per the EMPr and that this has negatively affected the agricultural potential of the land.

These aspects were examined in more detail and the following additional information was obtained:

Socio-economic
No jobs were lost as a result of the closure of the mine, as the workers were transferred to work at another operation. So this was reduced to an insignificant risk.

Land capability and future land use
The land has been successfully rehabilitated and can continue to be used for farming activities (i.e. cultivation of pasture crops).

This was reduced to an insignificant risk.

Groundwater
The mining area was inspected during the environmental audit of the site and there are no signs of any hydrocarbon spills.

This was reduced to an insignificant risk.

Soil

The site was inspected by the farmer or a soil scientist who has confirmed that sufficient topsoil was replaced over the mined areas during rehabilitation and that the site has successfully been rehabilitated and can continue to be used for agricultural purposes. This was reduced to an insignificant risk.

Note: The above description of the risk assessment methodology is for illustrative purposes only as the mining activity has not been approved yet.

11.3 Description of latent risks and potential drivers that could result in the manifestation of the risks

This will be a simple gravel / aggregate quarry. These are inert natural materials that do not cause pollution or acid mine drainage. Furthermore, this will be a surface mine and not an underground mine, so there is no risk of land subsidence.

No latent risks have been identified at this stage. The mining activity will be monitored and if any latent risks are identified then they will be described in annual risk assessment reporting.

11.4 Expected timeframes in which risk could manifest

No latent risks are anticipated at this stage.

11.5 Triggers that could be used to identify that a risk is imminent or has manifested

No latent risks are anticipated at this stage.

11.6 Changes to annual risk assessment results

Any changes to annual risk assessment results will be reported.

12. MANAGEMENT ACTIVITIES

(3(c) (c) management activities, including:
(i) monitoring of results and findings, which informs adaptive or corrective management and/or risk reduction activities;
(ii) an assessment of alternatives to mitigate or manage the impacts once the risk has become manifested, which must be focussed on practicality as well as cost of the implementation;
(iii) motivation why the selected alternative is the appropriate approach to mitigate the impact;
(iv) a detailed description of how the alternative will be implemented;)

12.1 Monitoring of results and findings

No monitoring has been undertaken yet, as the application has not been approved. Monitoring requirements are summarised in **Table 9**.

12.2 Assessment of alternative management / mitigation methods

To be included in future risk assessment reports.

12.3 Motivation to support the selected management / mitigation method

To be included in future risk assessment reports.

12.4 Description of how the selected management / mitigation method will be implemented

To be included in future risk assessment reports.

13. COST ESTIMATION: LATENT OR RESIDUAL IMPACTS

No latent risks have been identified at this stage. The mining activity will be monitored and if any latent risks are identified then they will be described in annual risk assessment reporting and a cost estimation will be made for latent or residual environmental impacts.

14. MONITORING, AUDITING & REPORTING REQUIREMENTS: LATENT OR RESIDUAL IMPACTS

No monitoring, auditing or reporting requirements are anticipated for latent or residual environmental impacts post-closure. It is anticipated that there will be no latent or residual environmental impacts after this small-scale mine has been rehabilitated.

Monitoring, auditing and reporting requirements for the duration of this mining permit are summarised in **Tables 9 and 10.**

FINAL REHABILITATION, DECOMMISSIONING AND MINE CLOSURE PLAN

15. INTRODUCTION: FINAL REHABILITATION, DECOMMISSIONING & MINE CLOSURE PLAN

15.1 Objectives of the final rehabilitation, decommissioning & mine closure plan

The objective of the final rehabilitation, decommissioning and mine closure plan, which must be measurable and auditable, is to identify a post-mining land use that is feasible through:

a) providing the vision, objectives, targets and criteria for final rehabilitation, decommissioning and closure of the project;
b) outlining the design principles for closure;
c) explaining the risk assessment approach and outcomes and link closure activities to risk rehabilitation;
d) detailing the closure actions that clearly indicate the measures that will be taken to mitigate and/or manage identified risks and describes the nature of residual risks that will need to be monitored and managed post closure;
e) committing to a schedule, budget, roles and responsibilities for final rehabilitation, decommissioning and closure of each relevant activity or item of infrastructure;
f) identifying knowledge gaps and how these will be addressed and filled;
g) detailing the full closure costs for the life of project at increasing levels of accuracy as the project develops and approaches closure in line with the final land use proposed; and
h) outlining monitoring, auditing and reporting requirements.

15.2 Content of the final rehabilitation, decommissioning & mine closure plan

The final rehabilitation, decommissioning and mine closure plan must be measurable and auditable, must take into consideration the proposed post-mining end use of the affected area and must contain information that is necessary for the definition of the closure vision, objectives and design and relinquishment criteria, indicating what infrastructure and activities will ultimately be decommissioned, closed, removed and remediated and the risk drivers determining actions, indicating how the closure actions will be implemented to achieve closure relinquishment criteria and indicating monitoring, auditing and reporting requirements.

16. PROJECT CONTEXT

(3(b) the context of the project, including:
(i) material information and issues that have guided the development of the plan;
(ii) an overview of:
(aa) the environmental context, including but not limited to air quality, quantity and quality of surface and groundwater, land, soils and biodiversity; and
(bb) the social context that may influence closure activities and post-mining land use or be influenced by closure activities and post-mining land use;)
(iii) stakeholder issues and comments that have informed the plan;
(iv) the mine plan and schedule for the full approved operations, and must include:
(aa) appropriate description of the mine plan;
(bb) drawings and figures to indicate how the mine develops;
(cc) what areas are disturbed; and

(dd) how infrastructure and structures (including ponds, residue stockpiles etc.) develops during operations;

16.1 The environmental context

Air quality
Air quality is good as the site is located in a rural area.

The Garden Route area receives rainfall throughout the year, with the lowest amount in June and the highest amount in November.

The predominant wind direction is from the southeast, although the northwester does blow from May to August. The average wind speed is gentle.

Water resources
The site is situated on transformed agricultural land at the far eastern end of a gently rounded ridge. There are no dams, rivers or wetlands within the proposed mining permit area.

The Brakkloof River and a tributary are located in the valleys below the proposed site.

Debbie Fordham (a freshwater ecologist) undertook the Site Sensitivity Verification for Aquatic Biodiversity and compiled the Aquatic Biodiversity Compliance Statement. The specialist concluded that the proposed mining permit area has a “Low” sensitivity with respect to aquatic biodiversity.

Soil and agriculture
The soils and underlying weathered granite are very uniform across the investigated area. The soils are generally moderately shallow, with upper soil horizons of loamy-sand (10% clay content) on underlying weathered granite.

The site is suitable for planted pastures.

Biodiversity
There is no remaining natural vegetation on the mining permit area. The land has been transformed and the land is and used for growing vegetables and planted pastures. There are no mapped Critical Biodiversity Areas (CBAs) on or near to the site.

16.2 The social context

There are no communities living on the site. The nearest farm homestead is more than 700 metres away. The site is located in an agricultural area.

16.2.1 Stakeholder issues and comments

At this stage all stakeholder issues and comments are recorded in the public participation report that will accompany the Basic Assessment Report. This section will be updated in future.

16.3 Description of the mine plan and schedule

It is proposed to mine weathered granite gravel (aggregate) that will be used by customers for road construction and maintenance projects as well as for other construction and development projects in the area.

The proposed mining sequence is as follows:

- Overburden clearing and stockpiling of topsoil.
- Loading of weathered granite gravel/aggregate into trucks using an excavator.
- Recording volumes in trucks.
- Final rehabilitation of slopes to not more than 1:3.
- Shaping the floor.
- Replacing top soil, re-establishing agricultural contours, stabilising the soil surface and rehabilitating the area so that it can continue to be used for agricultural purposes.
- Concurrent mining and rehabilitation is planned so that any one time the size of the active mining area should not be larger than one hectare.

Once all rehabilitation has been successfully completed then Kirsten & Tulleken Vervoer CC will be able to submit an application for a closure certificate.

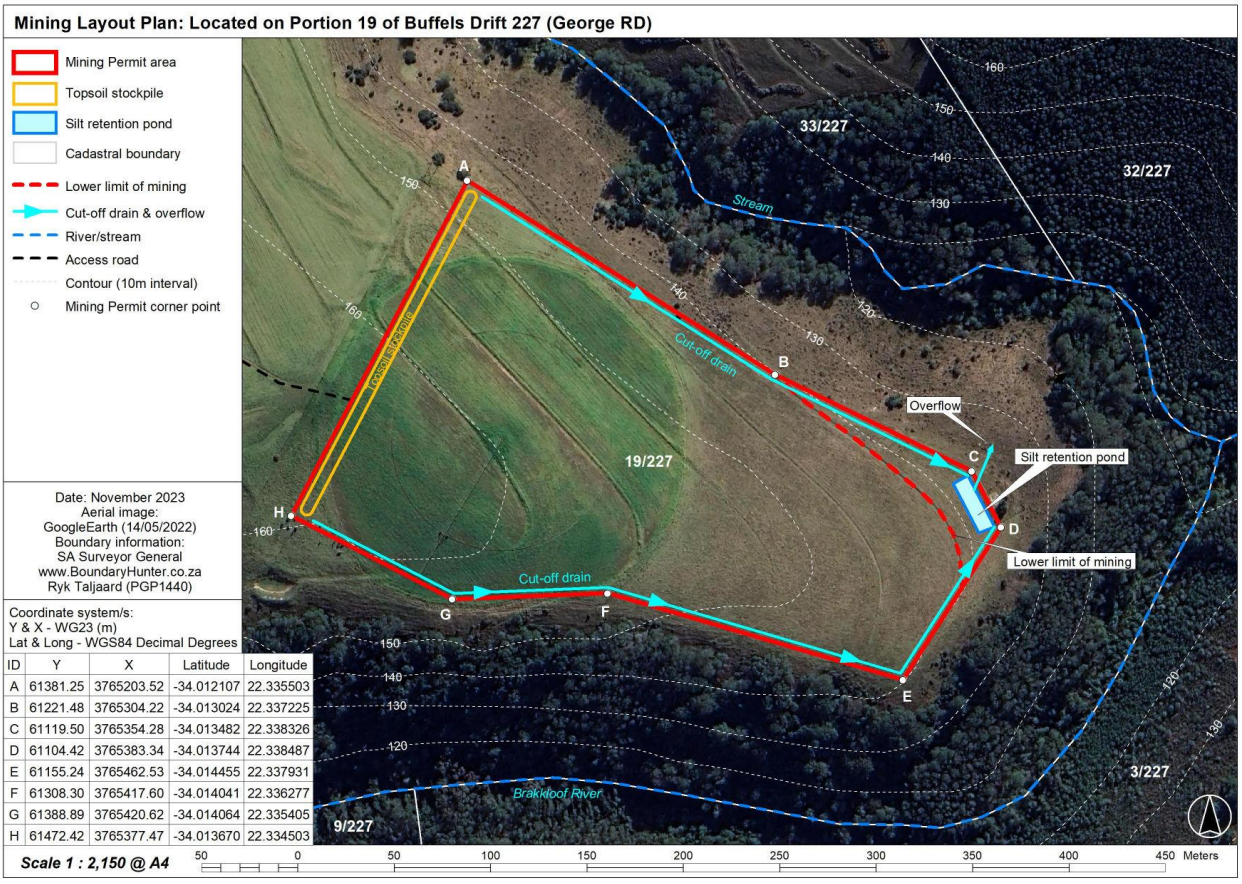


Figure 2: Mining layout plan

17. FINDINGS OF THE ENVIRONMENTAL RISK ASSESSMENT

The findings of the Environmental Risk Assessment Report will be summarised in this Section. This section of the report will be updated within a year of the mining permit being granted.

No latent or residual environmental impacts are anticipated for this small-scale gravel / aggregate mining operation.

18. DESIGN PRINCIPLES

(3(d) design principles, including:
(i) the legal and governance framework and interpretation of these requirements for the closure design principles;
(ii) closure vision, objectives and targets, which objectives and targets must reflect the local environmental and socioeconomic context and reflect regulatory and corporate requirements and stakeholder expectations;
(iii) a description and evaluation of alternative closure and post closure options where these exist that are practicable within the socioeconomic and environmental opportunities and constraints in which the operation is located;
(iv) a motivation for the preferred closure action within the context of the risks and impacts that are being mitigated;
(v) a definition and motivation of the closure and post closure period, taking cognisance of the probable need to implement post closure monitoring and maintenance for a period sufficient to demonstrate that relinquishment criteria have been achieved;
(vi) details associated with any ongoing research on closure options;
(vii) a detailed description of the assumptions made to develop closure actions in the absence of detailed knowledge on site conditions, potential impacts, material availability, stakeholder requirements and other factors for which information is lacking).

18.1 Legal & governance framework

The legal and governance framework for mine closure is summarised in the following table:

Table 7: Legal and governance framework

Applicable legislation and regulations	Reference	Interpretation for closure design principles
National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998).	Section 24R.	(1) The holder of the mining permit remains responsible for any environmental liability, pollution or ecological degradation, the pumping and treatment of polluted or extraneous water, the management and sustainable closure thereof notwithstanding the issuing of a closure certificate by DMRE in terms of the MPRDA, 2002. (2) When the Minister of the DMRE issues a closure certificate, he or she must return such portion of the financial provision contemplated in section 24P as the Minister may deem appropriate to the holder concerned, but may retain a portion of such financial provision for any latent, residual or any other environmental impact, including the pumping of polluted or extraneous water, for a prescribed period after issuing a closure certificate.

Applicable legislation and regulations	Reference	Interpretation for closure design principles
		(3) The holder of the mining permit must plan, manage and implement such procedures and requirements in respect of the closure of a mine as may be prescribed.
EIA Regulations, 2014	As amended on 11 June 2011 in GN R517	Mine closure is no longer a listed activity and is governed in terms of the Financial Provisioning Regulations, 2015 (as amended) together with the required plans, reports and calculations for this mining permit application.
The Financial Provisioning Regulations in GN R1147 of 2015 (as amended)	The entire document	The purpose of these Regulations is to regulate and determine the making of financial provision as contemplated in NEMA for the costs associated with the undertaking of management, rehabilitation and remediation of environmental impacts from mining operations through the life of the mining permit and latent or residual environmental impacts that may become known in the future.
National Water Act, 1998 (Act 36 of 1998)	The NWA, 1998	All requirements as stipulated in the National Water Act, 1998 must be complied with. A comment from the DWS will be required by the DMRE before an application for a closure certificate will be assessed.
Mineral and Petroleum Resources Development Act (MPRDA), 2002 (Act 28 of 2002)	Section 43 relates to the application for and the issuing of a Closure Certificate	(1) The holder of the mining permit remains responsible for any environmental liability, pollution, ecological degradation, the pumping and treatment of extraneous water, compliance to the conditions of the environmental authorisation and the management and sustainable closure thereof, until the Minister has issued a closure certificate in terms of the MPRDA. (5) No closure certificate may be issued unless the Chief Inspector Mine Health & Safety and each government department charged with the administration of any law which relates to any matter affecting the environment have confirmed in writing that the provisions pertaining to health and safety and management of pollution to water resources, the pumping and treatment of extraneous water and compliance to the conditions of the environmental authorisation have been addressed. (8) Procedures and requirements on mine closure as it relates to the compliance of the conditions of an environmental authorisation, are prescribed in terms of the National Environmental Management Act, 1998.
Mine Health and Safety Act, 1996	Closure	The site should be inspected by an official

Applicable legislation and regulations	Reference	Interpretation for closure design principles
(Act 29 of 1996)	Inspection	from the Directorate: Mine Health & Safety in order to ensure that the site is safe for people and that there are no residual hazards on the site.

18.2 Closure vision, objectives and targets

The closure vision is to ensure that the land can be rehabilitated so that it can continue to be used for agricultural purposes.

Objective 1: To ensure effective rehabilitation of the mining permit area.
Outcomes:

- The edges of the excavation are to be shaped and sloped to not more than 1:3.
- The floor is to be shaped to allow for free drainage out of the excavation.
- Upon completion of mining the cut-off drains / trenches and the silt retention pond must be filled with the material used for the berms and overburden
- Topsoil is to be replaced over the mined areas and agricultural contours are to be established.
- Crops are to be planted over the previously mined area.

Objective 2: To minimise pollution or degradation of the environment.
Outcomes:

- Ensure that no fuel or oil spills occur in the mining area.
- Ensure that no solid waste or rubble is dumped on the site.
- Ensure that portable (chemical) toilets are used.

Objective 3: To minimise impacts on the community.
Outcomes:

- To ensure that workers remain within the mining permit area.
- To operate during normal working hours only.
- To minimise the generation of noise and dust.
- To respond rapidly to any complaints received.

18.3 Alternative closure and post closure options

There are no alternative closure and post closure options.

18.4 Motivation for the preferred option

The property is zoned for agricultural purposes. The soil scientist has confirmed that as long as the land is rehabilitated correctly the mining permit area can continue to be used for agricultural purposes.

18.5 Definition & motivation of the closure & post-closure period

There will be no post closure period. When the land has been effectively rehabilitated and pasture crops are being cultivated an application for a closure certificate will be submitted.

18.6 On-going research on closure options

Not applicable. The land will be rehabilitated so that it can be used for agricultural purposes.

19. FINAL POST-MINING LAND USE

(3(e) (e) a proposed final post-mining land use which is appropriate, feasible and possible of implementation, including:
(i) descriptions of appropriate and feasible final post-mining land use for the overall project and per infrastructure or activity and a description of the methodology used to identify final post-mining land use, including the requirements of the operations stakeholders;
(ii) a map of the proposed final post-mining land use)

19.1 Appropriate post-mining land use

The land is zoned for agriculture and the appropriate post-mining land use is to continue to use the site for agricultural purposes.

19.2 Map of the proposed final post-mining land use

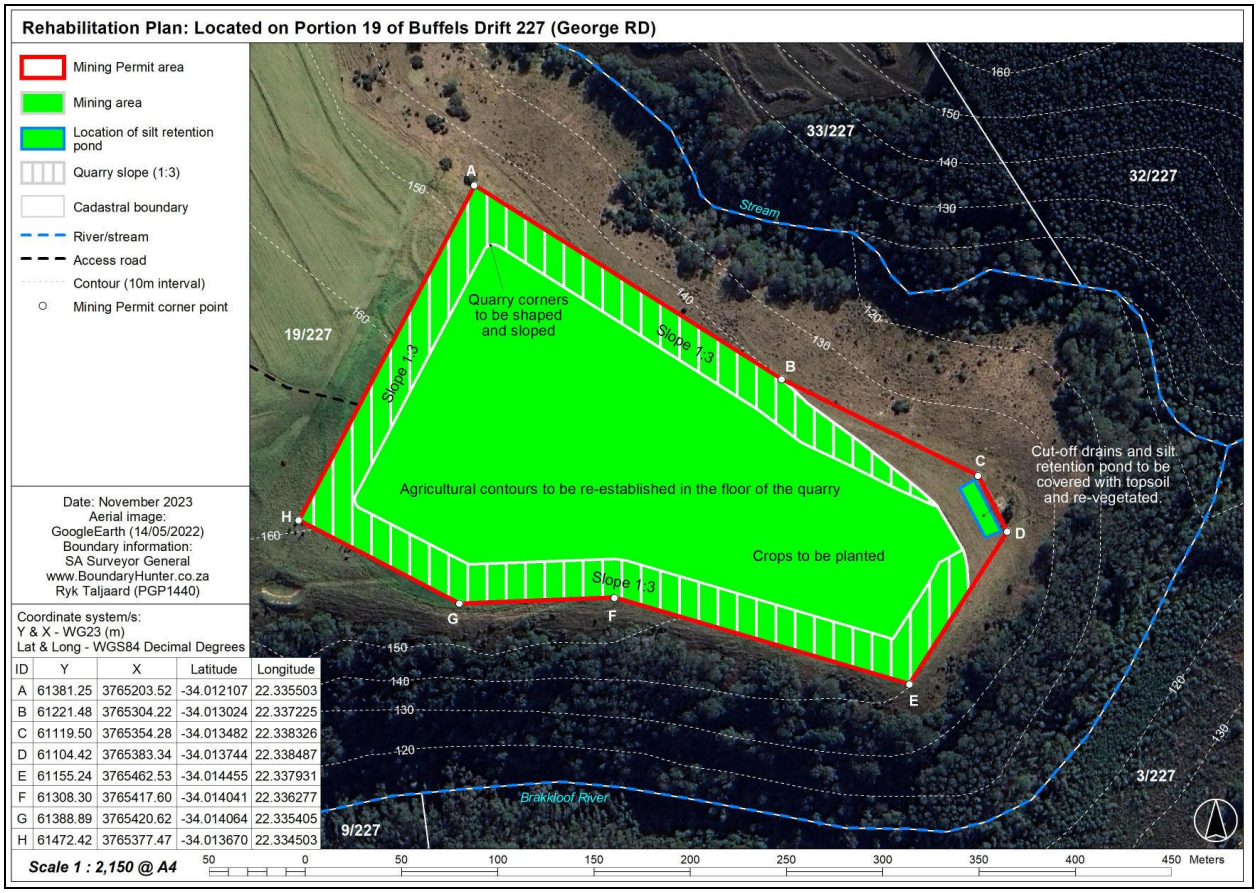


Figure 3: Rehabilitation and post mining land use map

20. CLOSURE ACTIONS

(3(f) closure actions, including:
(i) the development and documenting of a description of specific technical solutions related to infrastructure and facilities for the preferred closure option or options, which must include all areas, infrastructure, activities and aspects both within the mine lease area and off of the mine lease area associated with mining for which the mine has the responsibility to implement closure actions;
(ii) the development and maintenance of a list and assessment of threats and opportunities and any uncertainties associated with the preferred closure option, which list will be used to identify and define any additional work that is needed to reduce the level of uncertainty;

20.1 Technical solutions

Rehabilitation of the mining permit area

- That the edges of the excavation are shaped and sloped to not more than 1:3.
- That the floor has been shaped to allow for free drainage out of the excavation.
- That topsoil has been replaced over the mined areas and agricultural contours have been established.
- That pasture crops have been planted over the previously mined area.

Removal of material and equipment

- All equipment and materials (e.g. excavator, front-end loader, containerised office / store) used in the mining operation are to be removed from the site.
- Any remaining waste on the site (e.g. litter or scrap metal) must be removed and disposed of correctly at an appropriate waste management facility.

Workers

- The workers on the site will be transferred to another site.

20.2 List of threats and opportunities associated with closure

There are no significant threats associated with the closure of this mining permit.

The landowner (an experienced farmer) will be actively assisting with the final ploughing and planting of the land to ensure that the land continues to be used for agricultural purposes.

21. SCHEDULE OF ACTIONS FOR FINAL REHABILITATION & CLOSURE

(3(g) a schedule of actions for final rehabilitation, decommissioning and closure which will ensure avoidance, rehabilitation, management of impacts including pumping and treatment of extraneous water:
(i) linked to the mine works programme, if greenfields, or to the current mine plan, if brownfields;
(ii) including assumptions and schedule drivers; and
(iii) including a spatial map or schedule, showing planned spatial progression throughout operations)

At this stage it is estimated that the final rehabilitation of the mining permit area will take approximately three months to complete. Rehabilitation will, however, not be considered complete until the pasture crops are well established and therefore the rehabilitation phase will extend over at least a six-month period.

22. ORGANISATIONAL CAPACITY

The applicant already has a proven track record of rehabilitating a number of mines. The machine operators are supervised by the Mine Manager.

The applicant will shape and slope the land and replace the topsoil. The landowner (an experienced farmer) will assist with the ploughing of the land and the planting of suitable pasture crops.

23. GAPS

No gaps in the plan have been identified.

24. RELINQUISHMENT CRITERIA

The specific, measurable rehabilitation outcomes against which the effectiveness of completed rehabilitation must be measured are:

- That the edges of the excavation are shaped and sloped to not more than 1:3.
- That the floor has been shaped to allow for free drainage out of the excavation.
- That topsoil has been replaced over the mined areas and agricultural contours have been established.
- That pasture crops have been planted over the previously mined area.

25. COST ESTIMATION: CLOSURE

The closure cost estimation methodology makes use of the average market prices for the transport and rental of earth moving equipment to undertake the rehabilitation of the mined area.

It is assumed that one hectare of land will be mined per year. Concurrent mining and rehabilitation is planned so that not more than one hectare of land is open at a time.

The cost estimate for final rehabilitation and closure is an estimate for the rehabilitation of the entire 5 hectare mining permit area. As explained above this is an unlikely scenario, this is therefore likely to be more than sufficient for the relatively short-lived duration of the mining permit. This cost estimate therefore includes the estimated cost for annual rehabilitation.
The cost estimate for final rehabilitation is summarised in the following table:

Table 8: Cost estimate – final rehabilitation and closure

Item	Unit rate	Number of units/ hours /days	Amount
Transportation of equipment to site	R4 400	1	R4 400
Shaping & sloping of the excavation edges (hours)	R475	40	R19 000
Shaping and sloping of mine floor (hours)	R475	40	R19 000
Hauling and spreading of topsoil over mined areas (hours)	R475	40	R19 000
Seeding and planting / hectare	R5 250	5	R26 250
Labour (days)	R850	10	R8 500
Sub-total (1)			R96 150
10% Supervision fees			R9 615
Sub-total (2)			R105 765
VAT	15%		R15 865
TOTAL			**R121 630**
		say	**R122 000**

26. MONITORING, AUDITING & REPORTING REQUIREMENTS

The monitoring, auditing and reporting requirements for this mining permit are summarised in the following tables.

Table 9: Monitoring & auditing requirements

Monitoring	Responsible Person	Frequency	Close out approach
Internal monitoring	Site management to ensure compliance with the EMPr & Closure Plan	Daily compliance monitoring.	Any non-conformances must immediately be addressed by management.
Site Environmental Control: - Maintain a detailed incident register - Maintain the complaints register - Keep monitoring & auditing records - Keep records of all permits, licences and authorisations as well as all reports submitted	Environmental Control Officer (ECO)	Monthly reporting.	Any non-conformances must immediately be addressed by management.
Environmental audit	External environmental consultant	Every two years or more frequently if required by the DMRE.	Depending on the significance of the findings, management has 30 days to address any non-conformances identified.
Financial provision review	Independent review	Annual review and reporting to the DMRE.	Should the review indicate a shortfall, the holder of the permit or right is to increase the financial provision within the timeframe stipulated by the DMRE.
Dust monitoring	Site management to ensure compliance with the EMPr	Daily dust monitoring and management.	In the event that there is a significant increase in dust levels, the DMRE or the Municipality may instruct the company to start formal dust fall monitoring. If it is determined that the dust fall rate exceeds the standards in the National Dust Control Regulations, 2013 then further corrective action must be taken.

Monitoring	Responsible Person	Frequency	Close out approach
Noise monitoring	Site Management & Occupational Hygiene inspections	Daily and annual monitoring	Hearing protection equipment to be made available to employees if required. Equipment to be maintained and if necessary, silencers or other noise abatement measures to be implemented.

Table 10: Reporting requirements

Audit	Legislation	Reporting Requirements	Risk Reduction
Environmental Auditing	NEMA: EIA Regulations, 2014	Reporting will be in accordance with Regulation 34 and Appendix 7 of the EIA Regulations, 2014	The environmental audit report will indicate the ability of the EMPr and Closure Plan to adequately manage the activity. Should the reports not be sufficient then amendments will be proposed.
Financial Provision Review	NEMA & the Financial Provisioning Regulations, 2015	Reporting will be in accordance with Section 24P of NEMA and the Financial Provision Regulations, 2015	The auditor will report on the adequacy of the financial provision and any adjustments that need to be made to the financial provision.
Health & Safety Auditing	Mine Health & Safety Act, 1996	Reporting on the health & safety compliance of the mine will be in accordance with the Mine Health & Safety Act.	The health & safety manager / consultant will annually update the Code of Practices applicable to the site.

FINANCIAL PROVISION

27. SUMMARY OF THE FINANCIAL PROVISION

27.1 Quantum of the financial provision

The estimated cost of annual rehabilitation is R29 000.

No latent or residual environmental impacts are anticipated from this small-scale mining project after closure.

The estimated final rehabilitation and closure costs for this mine are R122 000 (and this includes the annual cost of rehabilitation).

The quantum of the financial provision required is therefore: R122 000. The Applicant must annually update and review the quantum of the financial provision

The Applicant undertakes to provide financial provision and a Guarantee will be the method of providing for the financial provision.

If the Applicant fails to rehabilitate or manage any negative impact on the environment, the DMRE may, upon written notice to the Applicant, use all or part of the financial provision to rehabilitate or manage the negative environmental impact in question.

---oo---

Appendix 2:

Annexure 16

Johann Lanz
Soil Scientist (Pr.Sci.Nat.)
Reg. no. 400268/12

Cell: 082 927 9018
e-mail: johann@johannlanz.co.za

1A Wolfe Street
Wynberg
7800
Cape Town
South Africa

SITE SENSITIVITY VERIFICATION AND AGRICULTURAL AGRO-ECOSYSTEM SPECIALIST ASSESSMENT FOR A GRANITE GRAVEL MINING PERMIT APPLICATION ON FARM NUMBER 19/227, BUFFELS DRIFT NEAR GEORGE

Report by
Johann Lanz

25 February 2024

Table of Contents

1 INTRODUCTION

Environmental authorisation is being sought for a granite gravel mining permit application on Farm number 19/227, Buffels Drift near George (see location in Figure 1). In terms of the National Environmental Management Act (Act No 107 of 1998 - NEMA), an application for environmental authorisation requires an agricultural assessment. In this case, based on the high agricultural sensitivity of the site (see Section 6), the level of agricultural assessment required by the agricultural protocol is an Agricultural Agro-Ecosystem Specialist Assessment.

Figure 1. *Locality map of the proposed farm southwest of George.*

The purpose of an agricultural assessment is to answer the question:

> Will the proposed development cause a significant reduction in agricultural production potential, and most importantly, will it result in a loss of arable land?

As is shown in Section 8, this assessed development will not result in any significant long-term loss of the agricultural production potential of the viable arable land and therefore poses minimal threat to agricultural production potential.

2 PROJECT DESCRIPTION

The project is an open cast gravel mine. Topsoil will be stripped and stockpiled and then the underlying granite gravel/aggregate will be dug out by an excavator and directly loaded onto trucks. Topsoil will be returned to the surface on completion of mining.

3 TERMS OF REFERENCE

The terms of reference for this study is to fulfill the requirements of the *Protocol for the specialist assessment and minimum report content requirements of environmental impacts on agricultural resources*, gazetted on 20 March 2020 in GN 320 (in terms of Sections 24(5)(A) and (H) and 44 of NEMA, 1998).

The agricultural sensitivity of the site includes land that is of very high agricultural sensitivity (see Section 7). The level of agricultural assessment required in terms of the agricultural protocol for sites verified as high or more sensitivity is an Agricultural Agro-Ecosystem Specialist Assessment.

The terms of reference for such an assessment, as stipulated in the protocol, are listed below, and the section number of this report which fulfils each stipulation is given after it in brackets.

1. The assessment must be undertaken by a soil scientist or agricultural specialist registered with the South African Council for Natural Scientific Professions (SACNASP).
2. The assessment must be undertaken on the preferred site and within the proposed development footprint.
3. The assessment must be undertaken based on a site inspection as well as an investigation of the current production figures, where the land is under cultivation or has been within the past 5 years, and must identify:
    1. the extent of the impact of the proposed development on the agricultural resources (Section 8);
    2. whether or not the proposed development will have an unacceptable negative impact on the agricultural production capability of the site (Section 10), and in the event where it does, whether such a negative impact is outweighed by the positive impact of the proposed development on agricultural resources.
4. The status quo of the site must be described, including the following aspects which must be considered as a minimum in the baseline description of the agro-ecosystem:
    1. The soil form/s, soil depth (effective and total soil depth), top and sub-soil clay percentage, terrain unit and slope (Section 7);
    2. Where applicable, the vegetation composition, available water sources as well as agro-climatic information (Section 7);
    3. The current productivity of the land based on production figures for all agricultural

activities undertaken on the land for the past 5 years, expressed as an annual figure and broken down into production units (not applicable);

4. The current employment figures (both permanent and casual) for the land for the past 3 years, expressed as an annual figure (not applicable);
5. Existing impacts on the site, located on a map where relevant (e.g. erosion, alien vegetation, non-agricultural infrastructure, waste, etc.)(not applicable).

5. Assessment of Impacts, including the following which must be considered as a minimum in the predicted impact of the proposed development on the agro-ecosystem:
    1. Change in productivity for all agricultural activities based on the figures of the past 5 years, expressed as an annual figure and broken down into production units (not applicable);
    2. Change in employment figures (both permanent and casual) for the past 5 years expressed as an annual figure (not applicable);
    3. Any alternative development footprints within the preferred site which would be of “medium” or “low” sensitivity for agricultural resources as identified by the screening tool and verified through the site sensitivity verification (not applicable).
6. The findings of the Agricultural Agro-Ecosystem Specialist Assessment must be written up in an Agricultural Agro-Ecosystem Specialist Report.
7. This report must contain the findings of the agro-ecossytem specialist assessment and the following information as a minimum:
    1. Details and relevant experience as well as the SACNASP registration number of the soil scientist or agricultural specialist preparing the assessment including a curriculum vita (Appendix 1);
    2. A signed statement of independence by the specialist (Appendix 2);
    3. The duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment (Section 4);
    4. A description of the methodology used to undertake the on-site assessment inclusive of the equipment and models used, as relevant (Section 4);
    5. A map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the screening tool (Figure 2);
    6. An indication of the potential losses in production and employment from the change of the agricultural use of the land as a result of the proposed development (Section 9);
    7. an indication of possible long term benefits that will be generated by the project in comparison to the benefits of the agricultural activities on the affected land (not applicable);
    8. Additional environmental impacts expected from the proposed development based on the current status quo of the land including erosion, alien vegetation, waste, etc. (not applicable);
    9. Information on the current agricultural activities being undertaken on adjacent land

parcels (Section 7);

10. an identification of any areas to be avoided, including any buffers (not applicable);
11. a motivation must be provided if there were development footprints identified as per point 5.3 above that were identified as having a medium or low agricultural sensitivity and that were not considered appropriate (not applicable);
12. Confirmation from the soil scientist or agricultural specialist that all reasonable measures have been considered in the micro-siting of the proposed development to minimise fragmentation and disturbance of agricultural activities (not applicable);
13. A substantiated statement from the soil scientist or agricultural specialist with regards to agricultural resources on the acceptability or not of the proposed development and a recommendation on the approval or not of the proposed development (Section 10);
14. Any conditions to which this statement is subjected (Section 10);
15. Where identified, proposed impact management outcomes or any monitoring requirements for inclusion in the Environmental Management Programme (EMPr) (Section 9);
16. A description of the assumptions made and any uncertainties or gaps in knowledge or data (Section 5).

4 METHODOLOGY OF STUDY

The assessment was based on an on-site investigation of the soils and agricultural conditions conducted on 7 November 2023. It was also informed by existing climate, soil, and agricultural potential data for the site (see references). The aim of the on-site assessment was to:

1. ground-truth cropland status and consequent agricultural sensitivity;
2. assess the soil potential;
3. gain an understanding of overall agricultural production potential across the site.

An interview was also conducted with the farmer for information on farming practices on the site. Soils were assessed based on the investigation of 10 test pits across the area of interest. Soils were classified according to the South African soil classification system (Soil Classification Working Group, 1991).

An assessment of soils and long-term agricultural potential is in no way affected by the season in which the assessment is made, and therefore the fact that the assessment was done in summer has no bearing on its results. The level of agricultural assessment is considered entirely adequate for an understanding of on-site agricultural production potential for the purposes of this assessment.

5 ASSUMPTIONS, UNCERTAINTIES OR GAPS IN KNOWLEDGE OR DATA

There are no assumptions, uncertainties or gaps in knowledge or data that affect the findings of this assessment.

6 SITE SENSITIVITY VERIFICATION

A specialist agricultural assessment is required to include a verification of the agricultural sensitivity of the development site as per the sensitivity categories used by the web-based environmental screening tool of the Department of Forestry, Fisheries and the Environment (DFFE). However, such an exercise is of limited value. What is of importance to an agricultural assessment, rather than the site sensitivity verification, is its assessment of the cropping potential and its assessment of the impact significance, both of which are not necessarily correlated with sensitivity.

The screening tool classifies agricultural sensitivity according to two independent criteria, from two independent data sets, both of which may be indicators of the land's agricultural production potential but are limited in that the first is outdated and the second relies on fairly coarse data. The two criteria are:

1. whether the land is classified as cropland or not on the field crop boundary data set (Crop Estimates Consortium, 2019), and
2. its land capability rating on the land capability data set (DAFF, 2017)

All classified cropland is, by definition, either high or very high sensitivity. Land capability is defined as the combination of soil, climate, and terrain suitability factors for supporting rain-fed agricultural production. It is rated by the Department of Agriculture's updated and refined, country-wide land capability mapping (DAFF, 2017). The higher land capability values (≥8 to 15) are likely to indicate suitability as arable land for crop production, while lower values (<8) are only likely to be suitable as non-arable grazing land. The direct relationship between land capability rating and the screening tool's agricultural sensitivity is shown in Table 1.

Table 1: Relationship between land capability and agricultural sensitivity as given by the screening tool.

Land capability value	Agricultural sensitivity
1 - 5	low
6 - 8	medium
9 - 10	high
11 - 15	very high

The agricultural sensitivity of the site, as classified by the screening tool, is shown in Figure 2.

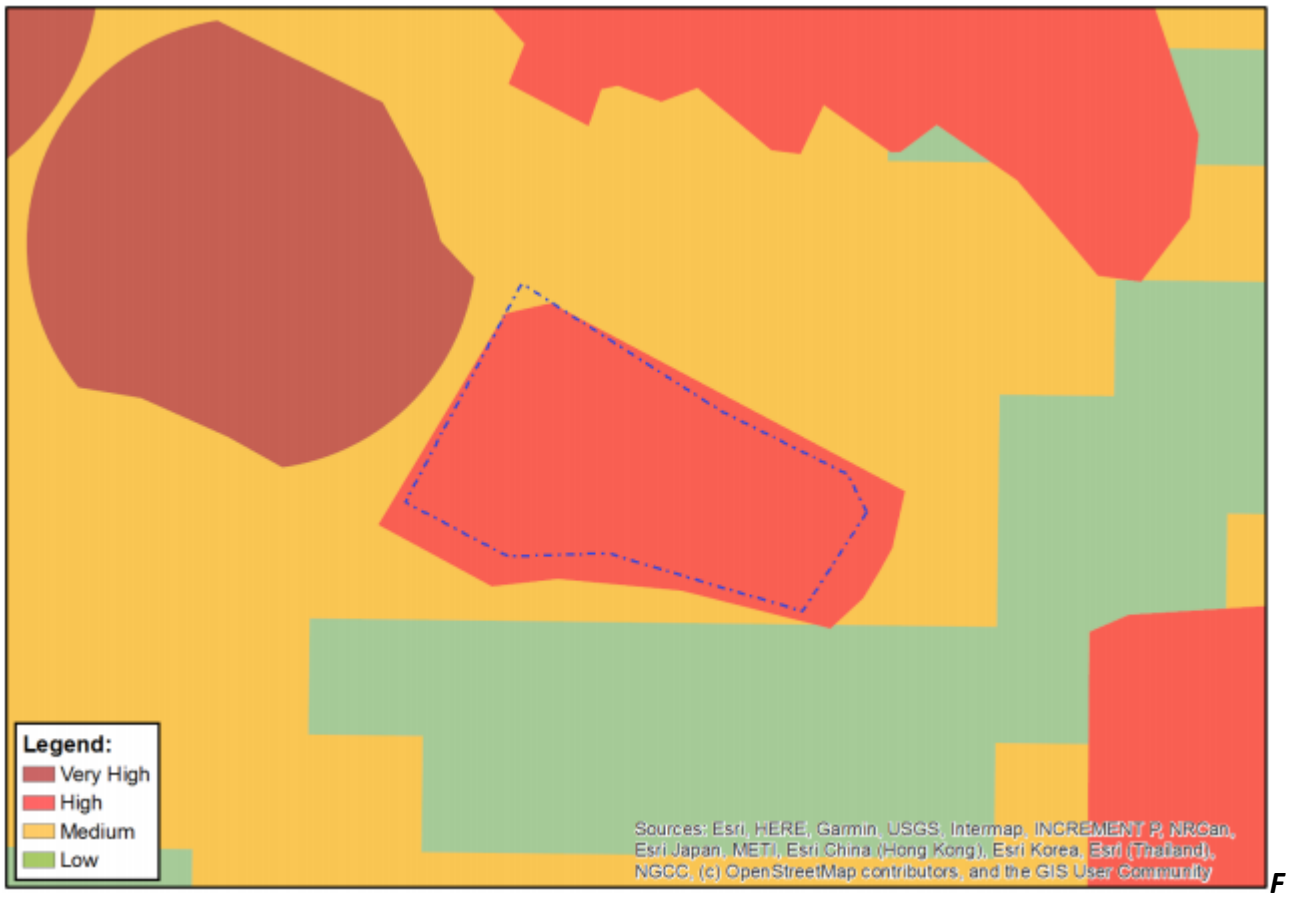


Figure 2. *The mining permit application area (blue outline) overlaid on agricultural sensitivity, as given by the screening tool (green = low; yellow = medium; red = high; dark red = very high).*

The screening tool classifies the assessed area as high agricultural sensitivity because it is classified as non-irrigated cropland. However, the data set used by the screening tool to classify cropland is outdated. Much of the site is currently under centre pivot irrigation and should therefore be classified as very high agricultural sensitivity.

This assessment disputes the high sensitivity classification of the mining permit area by the

screening tool and rates it as being of very high agricultural sensitivity because of the centre pivot irrigation.

7 BASELINE DESCRIPTION OF THE AGRO-ECOSYSTEM

The purpose of this section is to present the baseline information that controls the agricultural production potential of the site so that an assessment of that potential can be made. Agricultural production potential, and particularly cropping potential, is one of three factors that determines the significance of an agricultural impact, together with size of footprint and duration of impact.

All the important parameters that control the agricultural production potential of the site are given in Table 2. Data from test pits on site are given in Appendix 4. A satellite image map of the development site is given in Figure 3 and photographs of site conditions are shown in Figures 4 to 5.

It is not necessary to consider climate and terrain in an assessment of the cropping potential of the site because the suitability of both for crop production is indisputable given that the area has been and is currently used for successful crop production. This section therefore focuses on the on-site soil suitability.

The site falls within an area that is classified as a Protected Agricultural Area. A Protected Agricultural Area is a demarcated area in which the climate, terrain, and soil are generally conducive for agricultural production and which, historically, has made important contributions to the production of the various crops that are grown across South Africa. Within Protected Agricultural Areas, the protection, particularly of arable land, is considered a priority for the protection of food security in South Africa.

Table 2: Parameters that control and/or describe the agricultural production potential of the site.

	Parameter	**Value**
Soil	Geology (DAFF, 2002)	Mainly gneissic granite and granodiorite, as well as phyllite, schist, grit, hornfels and quartzite of the Kaaimans Group, and quartzitic sandstone of the Table Mountain Group, Cape Supergroup.
	Land type (DAFF, 2002)	Db33
	Description of the soils	Moderately deep, light textured, imperfectly drained duplex soils on underlying structured clay on weathered granite.

	Parameter	Value
	Dominant soil forms	Estcourt
	Soil capability classification (out of 9) (DAFF, 2017)	4 (low-moderate) to 5 (moderate)
	Soil limitations	Limited soil depth and drainage
General	Agricultural land use in the surrounding area	Mainly irrigated croplands
	Agricultural land use on the site	Irrigated croplands
	Land capability classification (out of 15) (DAFF, 2017)	5 (low) to 8 (moderate)
	Within Protected Agricultural Area (DALRRD, 2020)	Yes

Figure 3. *Satellite image map of the development.*

Figure 4. *Typical site conditions showing cabbage production under irrigation.*

Figure 5. *Typical soil conditions on the site. Soils are very uniform across the site.*

7.1 Assessment of the agricultural production potential

Despite some potential soil limitations, the site is suitable and used for viable vegetable crop production under irrigation.

The agricultural protocol requires the current productivity of the land based on detailed production figures and it requires the current employment figures. However, detailed production figures are notoriously difficult to obtain from farmers. Furthermore, this detail is not considered necessary for the assessment of the agricultural impact. All that is relevant is that the site is successfully used for vegetable production under irrigation and is therefore suitable for such production.

8 THE IMPACTS OF MINING ON AGRICULTURAL RESOURCES AND PRODUCTION

Mining can have both direct and indirect impacts on agricultural potential. Direct impacts are those that change the soil potential on site in terms of growing agricultural crops. Indirect impacts are those that do not directly affect plant growth, but that might impact the ability of farmers in the area to successfully run their agricultural enterprises.

8.1 Indirect impacts

The following potential indirect impacts are identified.

8.1.1 Alteration of the agricultural sense of place

Mining is an intrusive activity of an industrial nature that, during its operational phase, can alter the agricultural sense of place in a farming area. This is only relevant to an agricultural assessment if it affects surrounding agricultural revenue generation. If it does not, it is a social issue that is beyond the relevance and scope of an agricultural impact assessment. In this case, the alteration of agricultural sense of place is not considered likely to affect surrounding agricultural revenue generation.

8.1.2 Dust deposition on surrounding crops

Mining can result in dust on surrounding crops. There are dust sensitive vegetable crops surrounding the mining area. Dust will therefore need to be mitigated by means of damping down surfaces when required. The significance of this impact with mitigation is not high.

8.2 Direct impacts

There is ultimately only ever a single direct agricultural impact of mining and that is a change to the future agricultural production potential of the land. This impact can occur by way of different

mechanisms. There will be a temporary cessation of agricultural production for the duration of mining activity on the site, but the potential impact of major concern is a reduction in the long-term agricultural production potential of the site. In this case, this assessment finds that there is highly unlikely to be any significant long-term reduction in the agricultural production potential of the site provided that effective rehabilitation is implemented. This is because the weathered granite that will be mined is below the agricultural soil resource, which will be temporarily removed and then returned after mining. Furthermore, the elevated site means that mining will not increase drainage limitations.

With well managed and effectively implemented rehabilitation, there is not likely to be any significant reduction in long-term soil and production potential as a result of mining. Mining with rehabilitation will therefore have an impact of low significance on agricultural resources. However, without effective mitigation, there is highly likely to be long term reduction in soil and production potential and the impact on agricultural resources will therefore be higher.

There is no anticipated change after mining to the current agricultural production or employment as a result of the proposed mining.

9 RECOMMENDED MITIGATION AND REHABILITATION PLAN

A very important factor affecting the success of rehabilitation, and consequently the significance of all direct impacts, is the level of care that is taken to rehabilitate effectively. This is dependent on the level of environmental management of all mining activities that can impact on rehabilitation, both during the mining process and during the rehabilitation phase.

The following is the sequence of recommended rehabilitation steps:

1. Prevent dust by means of damping down surfaces when required.
2. Because the overburden above the mine-able gravel may exceed a thickness of 50cm, double stripping and stockpiling must be done to ensure that the topsoil remains separate from the underlying soil.
3. A depth of 40cm of topsoil must first be stripped and stockpiled before mining.
4. Thereafter, any additional overburden must be stripped and stockpiled separately from the topsoil stockpiles.
5. Topsoil is a valuable and essential resource for rehabilitation, and it should therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.
6. Topsoil stockpiles should be protected against losses by water and wind erosion. Stockpiles should be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants on the stockpiles will help to prevent erosion. Stockpiles should be

no more than 2 metres high.

7. After mining, any steep slopes must be reduced to a minimum and profiled to blend with the surrounding topography. The entire surface must also be sufficiently smoothed and profiled to allow cultivation.
8. The stockpiled overburden must then be evenly spread over the entire mining area.
9. Thereafter, the stockpiled topsoil must be evenly spread on top of the overburden, across the entire mining area. The depth should be monitored during spreading to ensure that coverage is adequate and even.
10. The contour banks must be re-established to the same specifications (height, slope, distance apart) as prior to disturbance, and to the satisfaction of a soil conservation specialist.
11. The area must be cropped again, as before mining.

10 CONCLUSIONS

The conclusion of this assessment is that there are adequate reserves of weathered granite within the proposed mining area. The proposed mining will not reduce the future agricultural production potential of the site, if effective rehabilitation is implemented. It will have no impact on agricultural employment. The proposed mine is therefore acceptable and, from an agricultural impact point of view, it is recommended that it be approved.

The conclusion of this assessment on the acceptability of the proposed development and the recommendation for its approval is subject to the following conditions:

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

1. that the topography and surface has been smoothed;
2. that topsoil has been spread on the surface;
3. that the pre-mining contour banks have been re-established to suitable specifications (height, slope, distance apart) at least as intensive as prior to disturbance, and that the integrity of the contour bank system as a whole is in place;
4. that there is no visible erosion across the area, or down-slope of it as a result of mining, and that no part of the area has been left unacceptably vulnerable to erosion;
5. that a successful crop has been established across the entire area.

11 REFERENCES

Crop Estimates Consortium, 2019. *Field Crop Boundary data layer, 2019*. Pretoria. Department of Agriculture, Forestry and Fisheries.

Department of Agriculture, Forestry and Fisheries (DAFF). 2017. National land capability evaluation raster data layer, 2017. Pretoria.

Department of Agriculture, Forestry and Fisheries (DAFF). 2002. National land type inventories data set. Pretoria.

Department of Agriculture, Land Reform and Rural Development (DALRRD). 2020. Protected agricultural areas – Spatial data layer. 2020. Pretoria.

Soil Classification Working Group. 1991. Soil classification: a taxonomic system for South Africa. Soil and Irrigation Research Institute, Department of Agricultural Development, Pretoria.

APPENDIX 1: SPECIALIST CURRICULUM VITAE

Johann Lanz
Curriculum Vitae

Education

M.Sc. (Environmental Geochemistry)	University of Cape Town	1996 - 1997
B.Sc. Agriculture (Soil Science, Chemistry)	University of Stellenbosch	1992 - 1995
BA (English, Environmental & Geographical Science)	University of Cape Town	1989 - 1991
Matric Exemption	Wynberg Boy's High School	1983

Professional work experience

I have been registered as a Professional Natural Scientist (Pri.Sci.Nat.) in the field of soil science since 2012 (registration number 400268/12) and am a member of the Soil Science Society of South Africa.

Soil & Agricultural Consulting **Self employed** **2002 - present**

Within the past 5 years of running my soil and agricultural consulting business, I have completed more than 170 agricultural assessments (EIAs, SEAs, EMPRs) in all 9 provinces for renewable energy, mining, electrical grid infrastructure, urban, and agricultural developments. I was the appointed agricultural specialist for the nation-wide SEAs for wind and solar PV developments, electrical grid infrastructure, and gas pipelines. My regular clients include: Zutari; CSIR; SiVEST; SLR; WSP; Arcus; SRK; Environamics; Royal Haskoning DHV; ABO; Enertrag; WKN-Windcurrent; JG Afrika; Mainstream; Redcap; G7; Mulilo; and Tiptrans. Recent agricultural clients for soil resource evaluations and mapping include Cederberg Wines; Western Cape Department of Agriculture; Vogelfontein Citrus; De Grendel Estate; Zewenwacht Wine Estate; and Goedgedacht Olives.

In 2018 I completed a ground-breaking case study that measured the agricultural impact of existing wind farms in the Eastern Cape.

Soil Science Consultant **Agricultural Consultors International (Tinie du Preez)** **1998 - 2001**

Responsible for providing all aspects of a soil science technical consulting service directly to clients in the wine, fruit and environmental industries all over South Africa, and in Chile, South America.

Contracting Soil Scientist **De Beers Namaqualand Mines** **July 1997 - Jan 1998**

Completed a contract to advise soil rehabilitation and re-vegetation of mined areas.

Publications

- Lanz, J. 2012. Soil health: sustaining Stellenbosch's roots. In: M Swilling, B Sebitosi & R Loots (eds). *Sustainable Stellenbosch: opening dialogues*. Stellenbosch: SunMedia.
- Lanz, J. 2010. Soil health indicators: physical and chemical. *South African Fruit Journal*, April / May 2010 issue.
- Lanz, J. 2009. Soil health constraints. *South African Fruit Journal*, August / September 2009 issue.
- Lanz, J. 2009. Soil carbon research. *AgriProbe*, Department of Agriculture.
- Lanz, J. 2005. Special Report: Soils and wine quality. *Wineland Magazine.*

I am a reviewing scientist for the *South African Journal of Plant and Soil*.

APPENDIX 2: DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I, **Johann Lanz**, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I:

- in terms of the general requirement to be independent:
  - other than fair remuneration for work performed/to be performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
  - ~~am not independent, but another specialist that meets the general requirements set out in Regulation 13 have been appointed to review my work (Note: a declaration by the review specialist must be submitted);~~
- in terms of the remainder of the general requirements for a specialist, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- have disclosed/will disclose, to the applicant, the Department and interested and affected parties, all material information that have or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application; and
- am aware that a false declaration is an offence in terms of regulation 48 of the 2014 NEMA EIA Regulations.

Signature of the specialist: 

Date: **25 February 2024**

Name of company: **Johann Lanz – soil scientist (sole proprietor)**

APPENDIX 3: SACNASP REGISTRATION CERTIFICATE

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Johan Lanz

Registration Number: 400268/12

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following fields(s) of practice (Schedule 1 of the Act)

Soil Science (Professional Natural Scientist)

Effective **15 August 2012** Expires **31 March 2024**

Chairperson

Chief Executive Officer

To verify this certificate scan this code

APPENDIX 4: SOIL DATA

Table 3: Soil data from investigated test pits on site

Sample number	Soil forms	Depth (mm)	Clay % A horizon	Depth limiting layer
1	Estcourt	800	10	Luvic B horizon (sharp transition to high clay)
2	Estcourt	500	10	Luvic B horizon (sharp transition to high clay)
3	Estcourt	700	10	Luvic B horizon (sharp transition to high clay)
4	Estcourt	400	10	Luvic B horizon (sharp transition to high clay)
5	Estcourt	700	10	Luvic B horizon (sharp transition to high clay)
6	Estcourt	600	10	Luvic B horizon (sharp transition to high clay)
7	Estcourt	600	10	Luvic B horizon (sharp transition to high clay)
8	Estcourt	600	10	Luvic B horizon (sharp transition to high clay)
9	Estcourt	800	10	Luvic B horizon (sharp transition to high clay)
10	Estcourt	600	10	Luvic B horizon (sharp transition to high clay)

Table 4: Land type soil data

Land type	Soil series (forms)	Depth (mm)	Clay % A horizon	Clay % B horizon	Depth limiting layer	% of land type
Db33	Es	250 - 700	3 - 12	30 - 65	pr	50.0
Db33	Ss	250 - 400	3 - 12	40 - 60	pr	13.0
Db33	Lo	500 - 800	6 - 15	20 - 35	sp	9.0
Db33	Kd	500 - 800	8 - 20	40 - 50	gc	8.5
Db33	Sw	200 - 500	10 - 20	40 - 60	vp	4.5
Db33	Wa	400 - 600	3 - 12		hp	4.1
Db33	We	300 - 500	6 - 15	10 - 35	sp	3.0
Db33	Gs	400 - 600	3 - 12	10 - 20	so	2.5
Db33	S					2.5
Db33	R					1.0
Db33	Ms	50 - 200	3 - 6		R	1.0
Db33	Hu	800 > 1200	10 - 25	20 - 45	R	0.9

Appendix 5:

Annexure 17

KIRSTEN & TULLEKEN VERVOER CC

STORMWATER MANAGEMENT PLAN

For a mining permit to mine weathered granite / gravel on Portion 19 of the farm Buffels Drift 227, George

Supporting document for an application in terms of Section 21 of the National Water Act (36 of 1998) and an application for environmental authorisation in terms of the National Environmental Management Act (Act 107 of 1998).

Annexure A: Stormwater Management System Design, hydrological data, water-balance and flood calculations. Report 2415T-01 prepared by Sarel Bester Consulting Civil Engineers.

Kirsten & Tulleken Vervoer CC
Binnestraat 26
George Industria
6530

STORMWATER MANAGEMENT PLAN

TABLE OF CONTENTS

ANNEXURE

Annexure A: Stormwater Management System Design, hydrological data, water-balance and flood calculations. Report 2415T-01 prepared by Sarel Bester Consulting Civil Engineers.

1. INTRODUCTION

Kirsten & Tulleken Vervoer CC has applied for a mining permit to mine weathered granite (gravel) on Portion 19 of the farm Buffels Drift 227, George.

The proposed mining permit area is located is located 13 km south-west of the centre of George. The site is situated on transformed agricultural land at the far eastern end of a gently rounded ridge **(see Figure 1)**. The elevation of the site varies from 160m above sea level in the west to 140m above sea level in the east. The Brakkloof River is located to the south and east of the site whilst a tributary is located to the north of the application area. The Brakkloof River and its tributary are situated in valleys that are far below the site at elevations varying between 110m to 120m above sea level.

This Stormwater Management Plan should be read together with the Aquatic Biodiversity Compliance Statement that was prepared by Upstream Consulting. The Stormwater Management Plan provides more details of the mitigation measures recommended in the Aquatic Biodiversity Compliance to minimise the impact of stormwater run-off from the site. The main aim of the stormwater management plan is to prevent possible sediment-laden water that is generated on the mining site from entering the rivers in the valleys below the site.

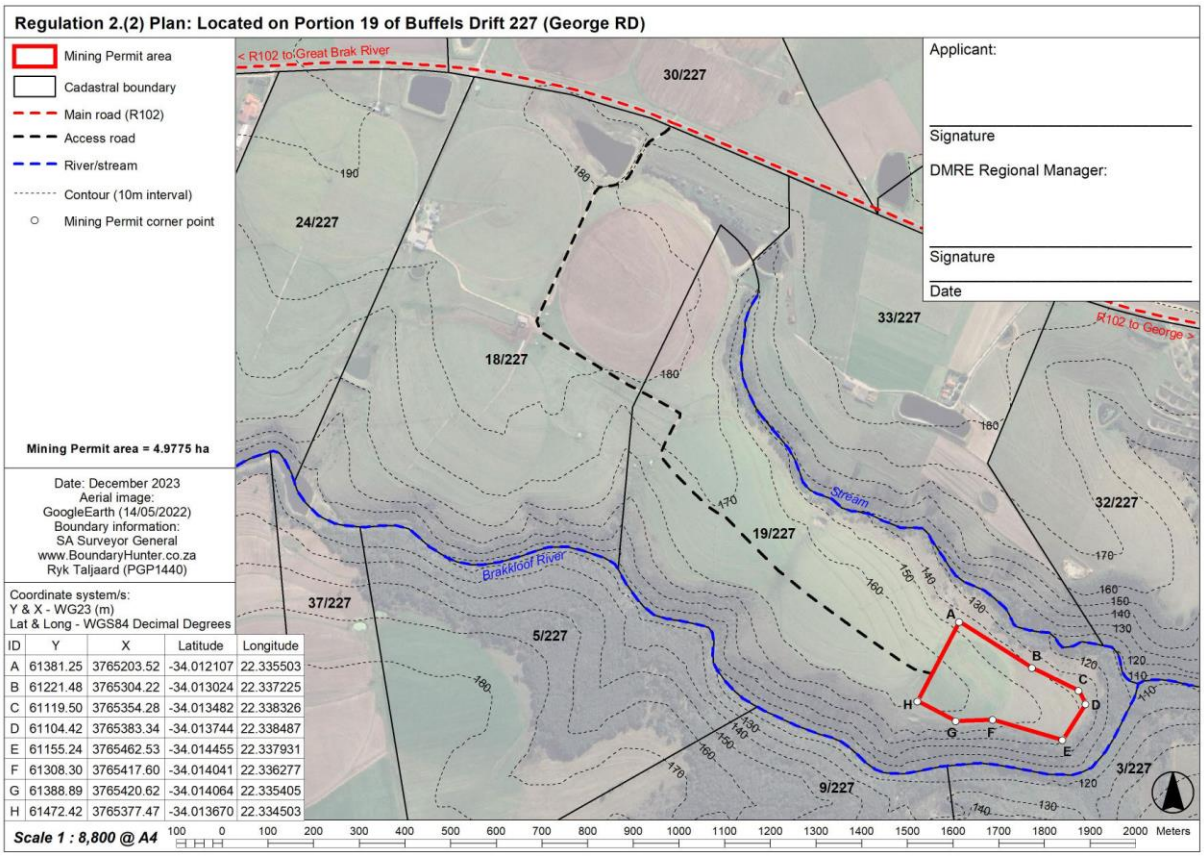


Figure 1: Site locality map

Sarel Bester Civil Engineers used the WRC2012 runoff data to determine the local runoff, and to do flood calculations as well as a water balance to determine water flow direction, water volumes and the dimensions of the cut-off drain (trench/berm) and silt retention pond **(see Annexure A)**.

2. OBJECTIVES

The objectives of the stormwater management plan are to:

- Prevent the contamination of clean runoff,
- Control and minimise sediment laden water and treat it in an environmentally responsible manner,
- Prevent soil erosion because of increased runoff from the mining area, and
- Prevent the loss of stockpiled topsoil to be used during rehabilitation.

3. LEGISLATION

The proposed mining activities (including the operation of this Stormwater Management Plan) must comply with the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998) as well as the EIA Regulations, 2014 (as amended).

Furthermore, the activities must comply with the National Water Act, 1998 (Act 36 of 1998) and its regulations. There are no wetlands or watercourses on the mining permit area. However, there are river valleys within 100 metres of the site and therefore a Section 21 (c) and (i) water use application will be submitted to the BOCMA. The BOCMA will determine if the activities fall under a General Authorisation (GA) or if the applicant will be required to submit a Water Use Licence Application (WULA).

Of relevance to this Stormwater Management Plan is Regulation 704 of 4 June 1999 published in terms of the National Water Act (Act 36 of 1998). These are the *"Regulations on use of water for mining and related activities aimed at the protection of water resources."*

The Department of Water Affairs and Forestry also published Best Practice Guideline No. G1 Storm Water Management in 2006.

4. CATCHMENT AREA, RAINFALL & RUNOFF

The study area is located within the K30A Quaternary Catchment, of which the major river is the Maalgate River. The site is situated on a gently rounded ridge between the Brakkloof River and an unnamed tributary. These rivers merge before entering the Maalgate River approximately 2km downstream.

The extent of the mining permit area is almost 5 hectares (i.e. 0.05 square kilometres) and the Mean Annual Precipitation (MAP) for the area is 753 mm (based on the WRC1990 data).

5. ASSUMPTIONS

The following assumptions were made by Sarel Bester Civil Engineers:

- Annual runoff is based on WRC2012 ~ max ±10 600m^3
- Rainfall & evaporation patterns are based on WRC1990
- Seepage is determined @ ±70% of evaporation rate
- The silt retention pond is able to store about 1.5 – 2months of accumulated runoff to allow for sedimentation before overflowing
- Creating a silt retention pond with a maximum surface area to maximise evaporation but staying within the mining boundaries with relative size
- Extreme flooding will not exceed annual rainfall

6. STORMWATER MANAGEMENT STRUCTURES

Sarel Bester Civil Engineers recommend the following structures and specifications to minimise the spillage of 'muddy/silty' water into the streams below during heavy rains or flooding:

- Stormwater collector and cut-off Trench/Berm of ±1m wide x ±0,8m deep.
- Trench/Berm leading stormwater to a low-level Silt Retention Pond with a surface area of ±500m² or a size of about 20m x 20m.
- Pond to have depth of about 3-4m.
- Pond to have freeboard of ±0.5m to protect integrity of earth-filled wall.
- Pond to have overflow of ±3m wide to protect during extreme flooding.

See **Annexure A** for the design detail.

7. STORMWATER MANAGEMENT ACTIONS

7.1 Introduction

This will be a simple weathered granite gravel / aggregate quarry. These are inert natural materials that do not cause pollution or acid mine drainage.

The main concern is to prevent suspended sediments from entering the local rivers / streams during high rainfall events (i.e. muddy or silty water). The suspended sediments consist of the finer-grained particles. Silt consists of particles that smaller than 0.06mm and larger than 0.002mm in size. Clay consists of particles smaller than 0.002mm in size.

7.2 Cut-off drains and berms

The purpose of the cut-off drains/trenches and berms are to divert potential sediment laden water to the silt retention pond and to protect the slopes and streams below the site.

The cut-off drains/trenches and berms must be inspected after every rainfall event and during periods of prolonged rainfall for scour and areas where they may breach. Any accumulated sediment deposited in the cut-off drain/trench must be removed. The outlets to the silt retention pond must be checked to ensure that these remain free from scour and erosion. Any erosion of the berms should be repaired at once.

The topsoil berm on the western side of the site will serve to protect the mining area from upslope runoff (i.e. clean water will be diverted away from the site).

7.3 Evaporation and silt retention pond

The purpose of the silt retention pond is to prevent the flow of any sediment-laden water down the slopes and into the rivers / streams below. The silt retention pond will allow the suspended sediments to 'settle-out' so that the accumulated sediment can be periodically removed.

The size of the silt retention pond (500m^2) takes seepage and evaporation into account and is able to store 1.5 to 2 months of accumulated runoff from the site before overflowing.

The silt retention pond is to have a depth of about 3-4m and a freeboard of ±0.5m to protect the integrity of earth-filled wall. The freeboard is the distance between the maximum water level and the top of the earth-filled pond wall.

The silt retention pond should have an overflow of ±3m wide to protect the structure during extreme flooding. A short spillway should be prepared using packed stones and rocks to prevent down-slope erosion in the event of flooding.

The silt retention pond must be regularly inspected and any accumulated sediment must be removed. Any erosion of the pond walls must be repaired immediately. The collected sediment can be placed within a part of the mining permit area that is being rehabilitated.

7.4 Topsoil protection

Topsoil is a valuable and essential resource for rehabilitation and it should therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.

Topsoil stockpiles should be protected against losses by water and wind erosion. Stockpiles should be positioned so as not to be vulnerable to erosion by wind and water.

The establishment of plants (weeds or a cover crop) on the stockpiles will help to prevent erosion. Stockpiles should be no more than 2 metres high.

If necessary, topsoil stockpiles could be stabilised by one of the erosion control methods described below.

7.5 Erosion control

Phased mining and vegetation clearance must be done. No vegetation outside of the active mining area may be disturbed until it is time for that specific area to be mined.

Concurrent mining and rehabilitation must be done so that any one time the size of the active mining area should not be larger than one hectare.

All exposed areas, after mining, must be revegetated as soon as possible with a cover crop to bind the soil and to prevent soil erosion.

If active erosion stabilisation is required then consideration can be made for one or more of the following erosion control methods:

- Mulch or chip cover
- Straw stabilising (at the rate of one bale/m² and rotavated into the top 100mm of the soil)
- Hydroseeding
- Using soil binders and anti-erosion compounds.

The following cover or packing methods can also be considered:

- Hessian cover
- Log or pole fencing

Any erosion problems within the mining area must be rectified immediately (within 48 hours) and monitored thereafter to ensure that these do not re-occur.

8. REHABILITATION

Rehabilitation of the mining area must be in accordance with the closure objectives and actions listed in the EMPr and the Closure Plan for the mine.

Upon completion of mining the cut-off drains / trenches and the silt retention pond must be filled with the material used for the berms and overburden.

These areas must then be covered by at least 50cm of topsoil. The cover crop that is to be established across the mined area must also include the areas that were used for the stormwater management structures.

Rehabilitation of the area should be planned to promote free drainage out of the area that was mined and to minimise or eliminate concentrations of storm water.

It is important that the agricultural contour banks are re-established, soils are stabilised and a cover crop is grown across the entire area.

…ooo…

Annexure A:

SAREL BESTER INGENIEURS BK
Raadgewende Siviele Ingenieurs / Consulting Civil Engineers
Argitektuurdienste / Architectural Services
CK1999/69837/23
62 Lyell Straat / Street
Bus/Box 21, CERES, 6835
T: 023-312 2017
E: admin@sbi.co.za

Verw: 2415T-01
Datum: 29-02-2024

Mnre Kirsten & Tulleken
26 Binnestraat
George
6530

Dear Mr Stephen Davey

KIRSTEN & TULLEKEN GRANITE MINE, STORMWATER MANAGEMENT PLAN & SILT POND

Our assignment regarding aspects of the Stormwater Management Plan for ***Kirsten & Tulleken*** Granite Mine, George, refers.

1) ATTACHED HEREWITH

- **Appendix A** Hydrology Map (1:75 000) with Runoff Table
- **Appendix B** Site Plan with Relevant Sections
- **Appendix C** UPD – Drainage Flood Calculations

2) INVESTIGATION

We have done a desk-top study to determine simplistic local runoff, flood calculations as well as a water balance in order to determine water flow direction, water volumes and therefore furrow & pond measurements.

The flood calculations was determined for 1:2, 1:5, 1:10 & 1:20 years, refer ***Appendix C***.

A water balance for the dam/pond was also done with the aim of determining the size and specifications of the pond; refer ***Table*** below indicating Inflow, Evaporation, Estimated Seepage & Dam Balance.

Kirsten & Tulleken Silt Pond:						
	RAINFALL %	RAINFALL INFLOW (m³)	EVAPORATION %	EVAPORATION VOLUME (m³)	ESTIMATED SEEPAGE VOLUME (m³)	DAM BALANCE (m³)
jan	9%	941	13%	59	42	840
feb	9%	929	10%	47	33	1 690
mar	11%	1 141	9%	40	28	2 762
apr	8%	860	7%	30	21	3 570
may	7%	753	5%	25	17	4 281
jun	5%	565	5%	23	16	4 807
jul	6%	648	5%	23	16	5 415
aug	8%	851	6%	27	19	6 220
sep	9%	938	7%	31	22	7 105
oct	10%	1 022	9%	42	30	8 056
nov	10%	1 054	11%	50	35	9 024
dec	8%	900	13%	61	43	9 820
	100%	10 600	100%			

A few assumptions were made:

- annual runoff is based on WRC2012 ~ max ±10 600m³
- rainfall & evaporation patterns are based on WRC1990
- seepage is determined @ ±70% of evaporation rate
- pond size able to store about 1,5 – 2months of accumulated runoff to allow for sedimentation before overflowing
- creating pond with maximum surface area to maximise evaporation but staying within mining boundaries with relative size
- extreme flooding will not exceed annual rainfall

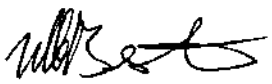
3) SUMMARY / CONCEPT

We suggest the following structures and specifications to minimise the spillage of 'muddy/silty' water into the stream below during heavy rains or flooding:

- Stormwater collector and cut-off Trench/Berm of ±1m wide x ±0,8m deep, refer sections for specifications
- Trench following contours leading to low-level Evaporation Silt Pond with surface area of ±500m² or size of about 20m x 20m
- Pond to have depth of about 3-4m, refer sections
- Pond to have freeboard of ±0.5m to protect integrity of earth-filled wall
- Pond to have overflow of ±3m wide to protect during extreme flooding

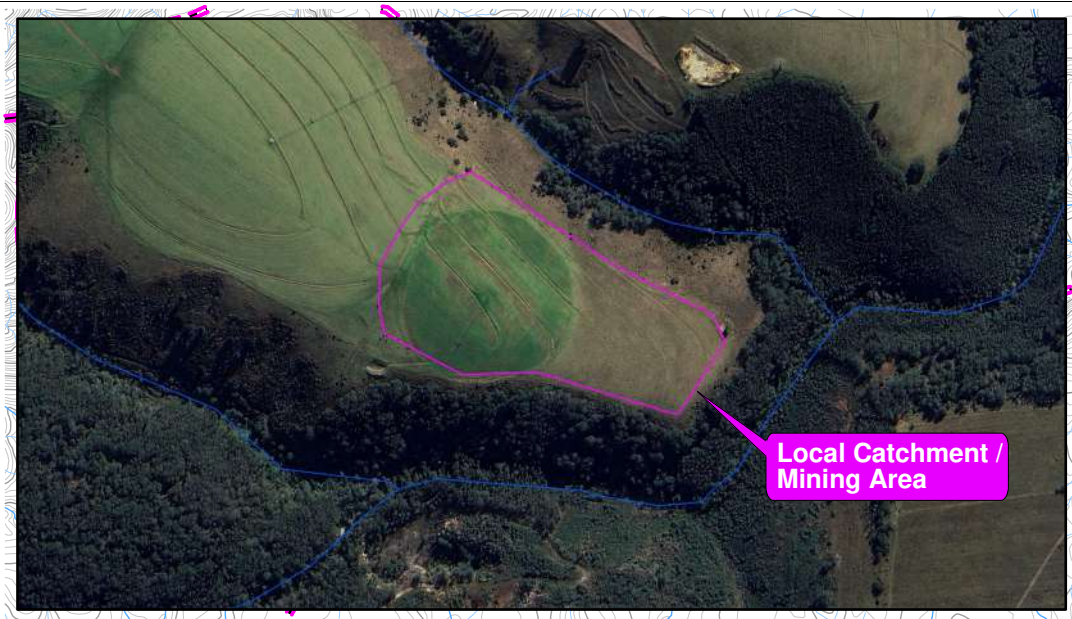
We trust that the above is in order. You are welcome to contact us if any queries arise.

Yours sincerely



M Charl Bester (Pr Eng)

Copies to:	



N

Quaternary Catchment K30A
Area: 196km²
MAP: 753mm
MAR: 42.43x10⁶m³

K30A

Local Catchment
Area: 0.05km²
MAP: 753mm
MAR: 0.011x10⁶m³

Scale 1:75000

0 0.5 1 2 3 4 5 km

WATER AVAILABILITY			
	QUATERNARY CATCHMENT	PRO-RATA CATCHMENT	
	K30A	Kirsten & Tulleken	
Area	196	0,05	km²
MAP	753	753	mm
MAR	216	216	mm
Virgin Afloop	29%	29%	
MAR(Virgin)	42,43	0,0106	x10⁶m³

SAREL BESTER INGENIEURS BK
Raadgewende Siviele Ingenieurs / Consulting Civil Engineers
Argitektuurdienste / Architectural Services
MC BESTER
Pr. Ing., LSAISI: 970598, LSACAP: T1218
Tel 023 312 2017 / Epos admin@sbri.co.za

Client: Kirsten & Tulleken Vervoer Bk
26 Binnestraat
GEORGE
6530

Project: HYDROLOGY MAP

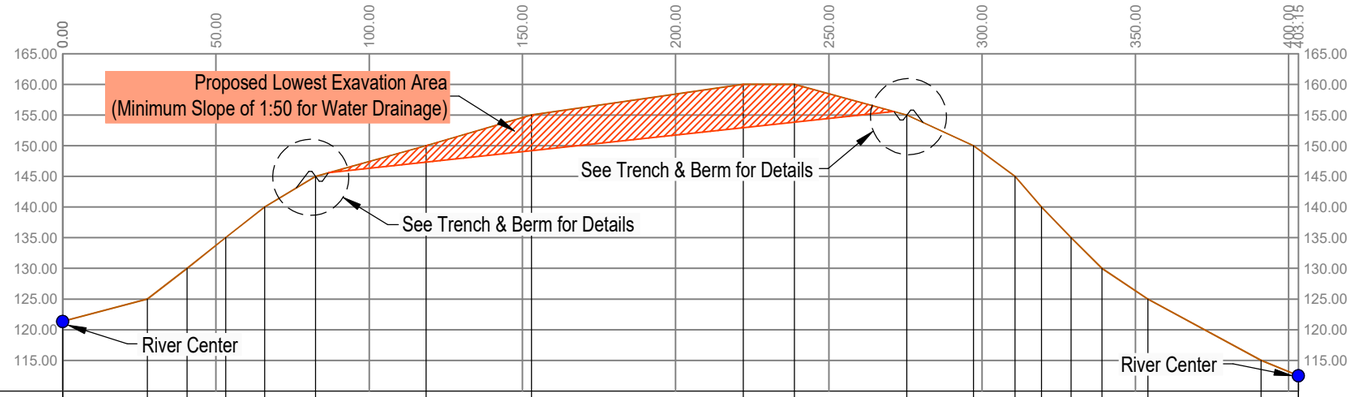
Project Ref: 2415

Map Ref: 3422AB

Scale: 1: 75 000

SECTION A-A

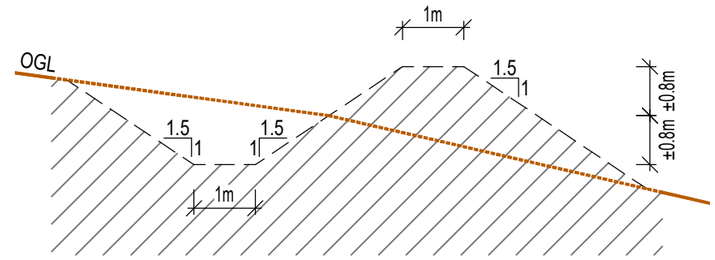
SCALE HORIZ. 1:2000 VERT. 1:1000



Chainage (m)	0.00	27.65	40.59	53.18	65.93	82.50	118.54	152.97	222.03	238.70	275.43	297.17	310.69	319.35	329.03	339.05	354.03	390.98	403.15
Groundlevel (masl)	121.35	125.00	130.00	135.00	140.00	145.00	150.00	155.00	160.00	160.00	155.00	150.00	145.00	140.00	135.00	130.00	125.00	115.00	112.50

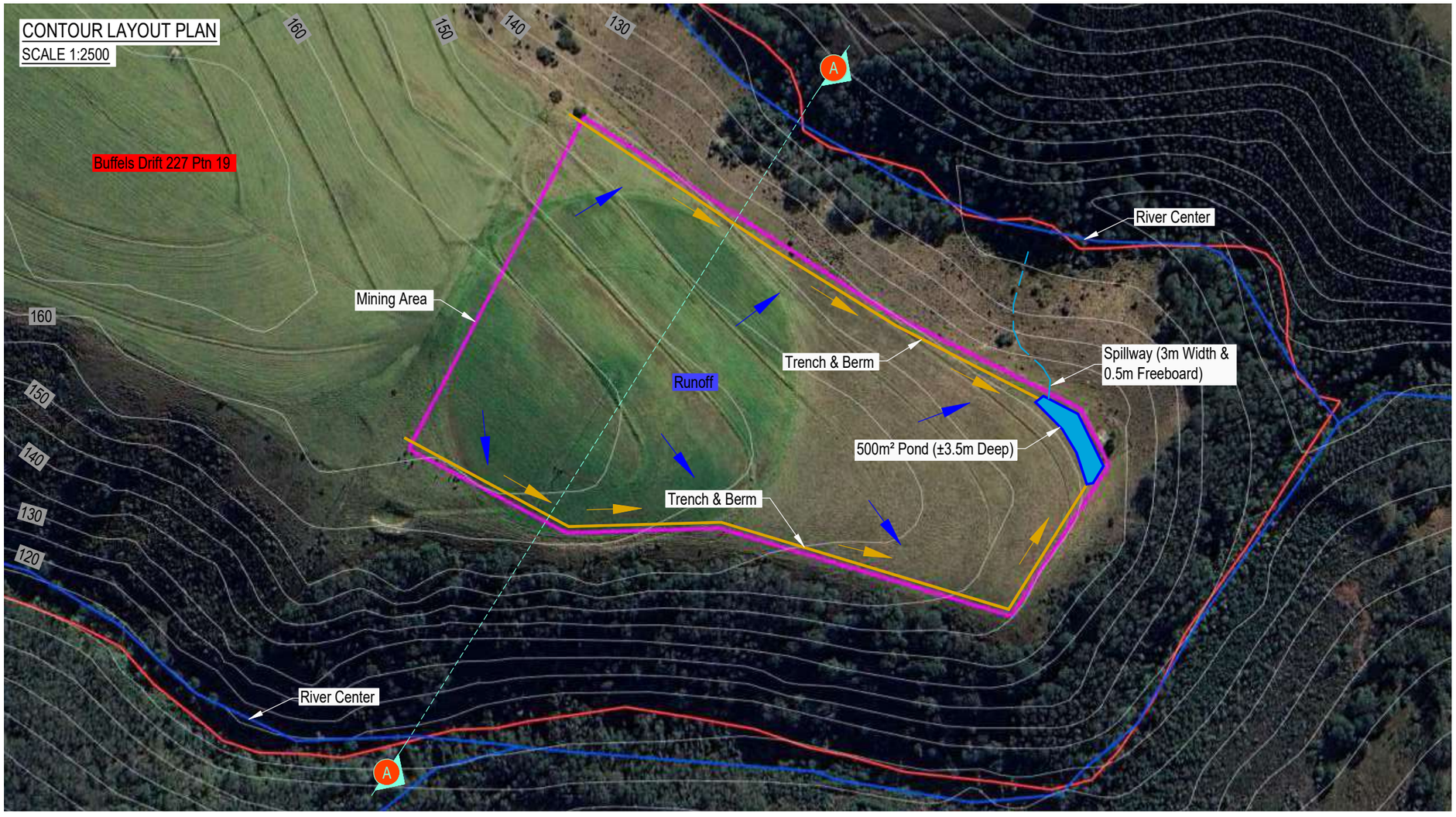
TRENCH & BERM

SCALE 1:100



CONTOUR LAYOUT PLAN

SCALE 1:2500



REVISION

SAREL BESTER ENGINEERS

Consulting Civil Engineers
Architectural Services

..... Date:29/2/2024

MC BESTER

Pr. Eng., B.Eng., MSAICE:970598, SACAP:T1218

P.O. Box 21
62 Lyell Street
CERES, 6835

Ph: 023-312 2017
Fax: 023-312 3802
e-mail: admin@sbri.co.za

OWNER

Kirsten & Tulleken Vervoer Bk
26 Binnestraat
GEORGE
6530

PROJECT

WATER MANAGEMENT PLAN

DETAIL

Contour Layout, Cross-Sections & Detail

DRAWN	DATE	SCALE	SHEET
R van der Merwe	FEB. 2024	as shown	1

SURVEYED	DESIGNED	DWG. NUMBER	REV.
N/A	Sarel Bester Engineers	2415-D2-01	

A3

Utility Programs for Drainage
Flood calculations

Sinotech

Project name: 2415
Analysed by: RvdM
Name of river: N/A
Description of site: Kirsten & Tulleken
Filename: I:\UPD\2415Kirsten.fld
Date: 27 February 2024

Summary of peak flows (m³/s)

Method	1:2	1:5	1:10	1:20	1:50	1:100	1:200	Design year
Rational	0.155	0.225	0.302	0.395				50
Alternative rational	0.246	0.442	0.614	0.804				50
Unit hydrograph	0.082	0.114	0.146	0.182				50
Standard design flood	0.208	0.732	1.218	1.768				50
Empirical			2.143	2.686				50
Statistical: LN								
Statistical: LEV1								
Statistical: LP3								
Statistical: EV1								

Class of road = Class 1 Primary Distributors

Appendix 4:

Annexure 18

TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT

MINING ON PORTION 19 OF FARM BUFFELS DRIFT 227, GEORGE

BY:
Debbie Fordham
Upstream Consulting
debbie@upstreamconsulting.co.za
25 Blommekloof Street
George
6530

FOR:
Stephen Davey
Klipberg Consulting
PO Box 46
Darling
7345

DATE: 28 JANUARY 2024

EXECUTIVE SUMMARY

The site earmarked for the project is significantly modified and transformed due to a long history of cultivation. Even if agricultural activities were to cease, the natural vegetation type is unlikely to reestablish. The 'Very High' sensitivity outcome of the Screening Tool is disputed and the site sensitivity rating for the Terrestrial Biodiversity Theme is regarded as 'Low'. The project is deemed as acceptable, provided the mitigation measures and rehabilitation recommendations are adopted, and any natural habitat beyond the site boundary is avoided.

TABLE OF CONTENTS

List of Figures

List of Tables

List of Photo Plates

REPORT CONTENT REQUIREMENTS

This report is in alignment with 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. Specifically, the report is in alignment with the requirements for the assessment and reporting of impacts of development on terrestrial biodiversity (Table 1) which are set out in the ' Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity as published in Government Notice No. 320 in Government Gazette 43110 on 20 March 2020.

Table 1: The report content guide in relation to the minimum information and report requirements for a Compliance Statement as set out in Section 3, Table 1, of the Protocol for the Terrestrial Biodiversity Theme

3	**Terrestrial Biodiversity Compliance Statement Requirements**	**Relevant section of this report:**
3.1	Contact details and curriculum vitae of the specialist including SACNASP registration number and field of expertise;	Co-author: Dr Mark Berry (SACNASP No. reg. no. 400073/98) Lead author: Debbie Fordham (SACNASP No.119102)- Refer to page iii and Section 10 -Specialist CV
3.2	A signed statement of independence by the specialist;	Section 11 – Specialist declaration
3.3	Baseline profile description of biodiversity and ecosystems, including the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 2 – Desktop assessment, Section 5 - Results
3.4	Methodology used to verify the sensitivities of the terrestrial biodiversity on the national web based environmental screening;	Section 3.1 Desktop assessment methods Section 12 – Site Sensitivity Methodology
3.5	Methodology used to undertake the site survey and prepare the Compliance Statement, including equipment and modelling used where relevant;	Section 3.2 Site assessment methods Section 12 - Methodology
3.6	Where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr;	Section 7
3.7	A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations; and	Section 4
3.8	Any conditions to which the statement is subjected.	*Section 7*

DECLARATION OF INDEPENDENCE

I, Debbie Fordham, declare that I:

- act as an independent specialist consultant, in this application, in the field of ecology;
- declare/affirm the correctness of the information provided in this compliance statement
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the amended eia regulations, 2014 (amended);
- have, and will have, no vested interest in the proposed activity proceeding;
- have no, and will not engage in, conflicting interests in the undertaking of the activity;
- undertake to disclose, to the competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the amended eia regulations, 2014; and
- will provide the competent authority with access to all the information at my disposal regarding the application, whether such information is favourable to the applicant or not.

PROJECT TEAM

Report Author: Debbie Fordham

Debbie Fordham is an ecologist registered with the South African Council for Natural Scientific Professions (SACNASP no. 119102). She has over 10 years of experience consulting in the ecological field. She has authored over 100 specialist reports, and she constantly contributes to the scientific and local community. Debbie holds a M.Sc. degree in Environmental Science from Rhodes University, by thesis, entitled: The geomorphic origin and evolution of the Tierkloof Wetland, a peatland dominated by *Prionium serratum* in the Western Cape. She is internationally accredited by the Council of Engineering and Scientific Specialty Boards (CESB). She is a member of the Society for Wetland Scientists, the South African Wetland Society, the Southern African Association of Geomorphologists, and SACNASP.

<u>Tertiary Education</u>

- M.Sc. Environmental Science:

Master of Science thesis entitled: The geomorphic origin, evolution and collapse of a peatland dominated by *Prionium serratum:* a case study of the Tierkloof Wetland, Western Cape.

- BA Hons. Environmental Science (Rhodes University):

Honours dissertation: The status and use of Aloe ferox. Mill in the Grahamstown commonage, South Africa. Courses: Wetland Ecology, Environmental Water Quality /Toxicology, Biodiversity, Non-Timber Forest Products (NTFPs) and Rural Livelihoods, Environmental Impact Assessment (EIA), Statistics

- BA - Environmental Science and Geography (Rhodes University)

Co-author: Dr Mark Berry

Environmental assessment professional and biodiversity specialist with over 20 years of experience mainly in the Western Cape Province, but also in the Northern Cape and Eastern Cape. Experience in Environmental Impact Assessments (EIA's), biodiversity assessments, Environmental Management Programmes (EMPr's), Environmental Control Officer (ECO) duties and environmental due diligence investigations.

Professional member (reg. no. 400073/98) of the South African Council for Natural Scientific Professions (SACNASP).

Qualifications:

- BSc (1988) University of Stellenbosch
- BSc-Hons in Botany (1991) University of Stellenbosch
- MSc in Botany (1993) Nelson Mandela Metropolitan University
- PhD in Botany (2000) Nelson Mandela Metropolitan University.

INDEMNITY AND COPYRIGHT

The project deliverables, including the reported results, comments, recommendations and conclusions, are based on the author's professional knowledge as well as available information. The author reserves the right to modify aspects of the report including the recommendations if and when new information may become available from on-going research or further work in this field or pertaining to this investigation. The author has exercised reasonable skill, care and diligence in the provision of services, however, accepts no liability or consequential liability for the use of the supplied project deliverables and any information or material contained therein. This report should be appropriately referenced if the results, recommendations, or conclusions in this report are used in subsequent documentation.

1 INTRODUCTION

Debbie Fordham of Upstream Consulting has been appointed by Kirsten & Tulleken Vervoer cc to conduct a biodiversity assessment for the proposed mining permit area on Portion 19 of the Farm Buffels Drift 227, George. The 'Very High' sensitivity status of the site indicated by the online Screening Tool required verification by the ecological specialist. The initial site sensitivity verification assessment determined that there is a discrepancy between the environmental status quo versus the environmental sensitivity as identified on the national web based environmental screening tool. It determined that the site sensitivity is 'Low' for the terrestrial biodiversity theme and recommended that a Compliance Statement be submitted.

1.1 Location

The site is located 13 km south-west of the centre of George, west of the Maalgate River, in an agricultural area (Figure 1). The proposed mining permit area is 4.9775 hectares in size (Figure 2).

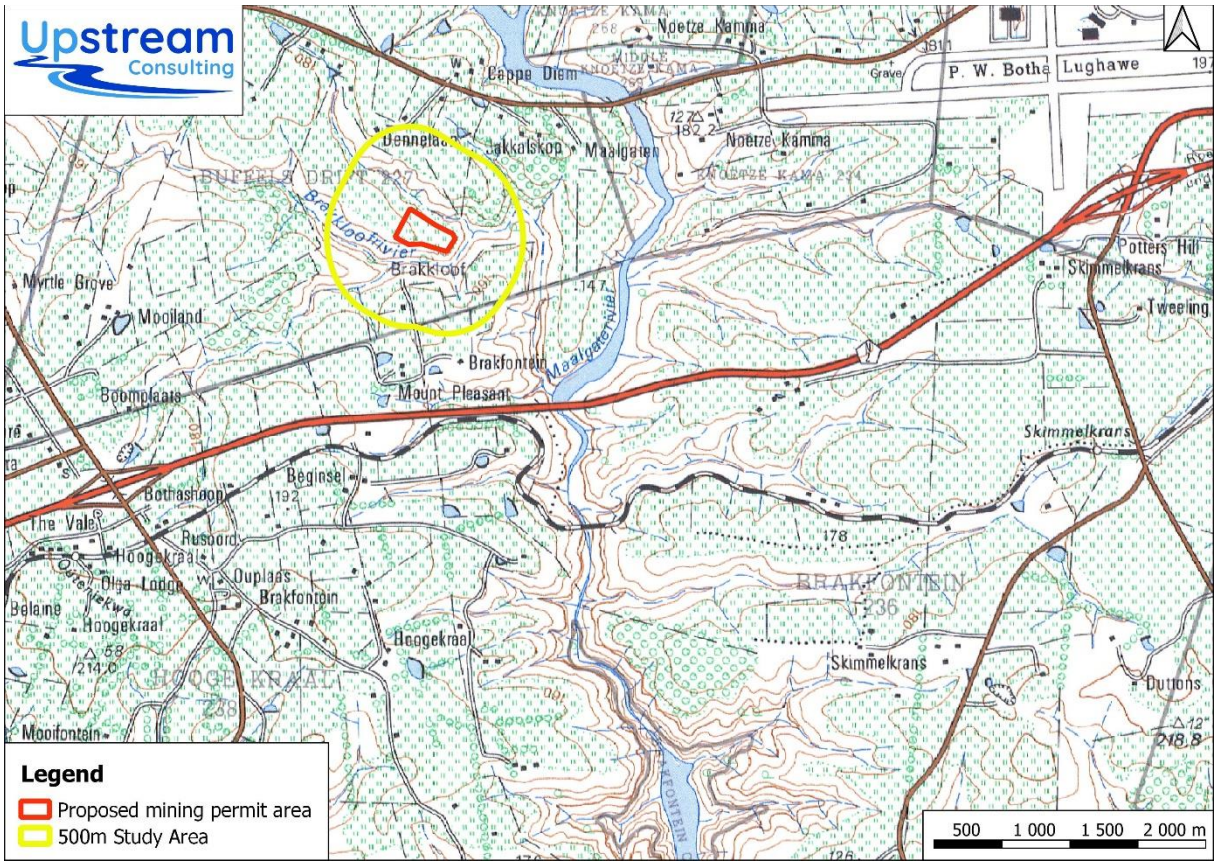


Figure 1: A topocadastral map showing the location of the proposed site in relation to the Maalgate River, N2 National Road, and George Airport

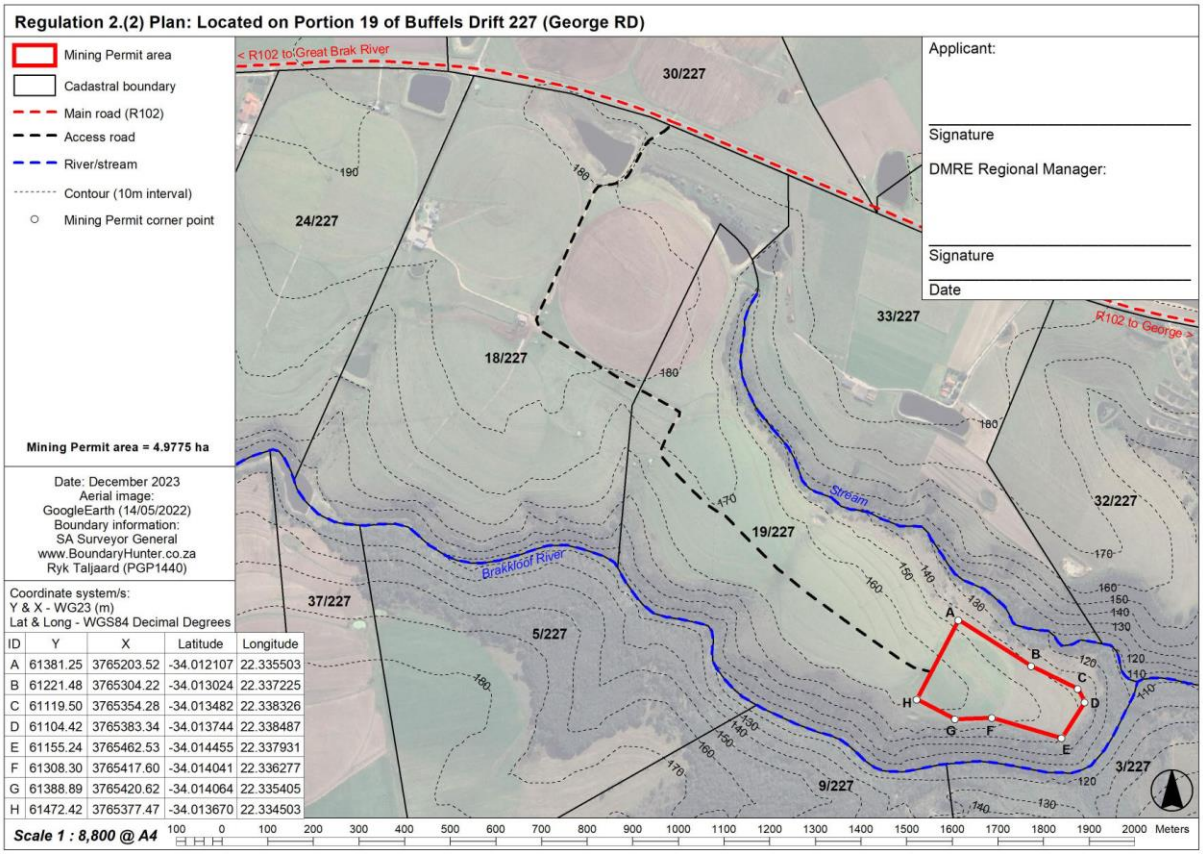


Figure 2: Site locality map provided by Klipberg Consulting (December 2023)

1.2 Current Land Use

The land is used for the cultivation of vegetables and pasture crops (western portion of the site) and for livestock grazing (Plates 1 & 2). The Western Cape Department of Agriculture Crop Census (2017) indicates the field crop boundaries mapped during the 2017/18 Western Cape commodity census and digitised using the aerial photography of 2016. According to this data, the land upon which the site is proposed is entirely under agricultural use for either cultivated vegetable crops or irrigated planted pasture (Figure 3).

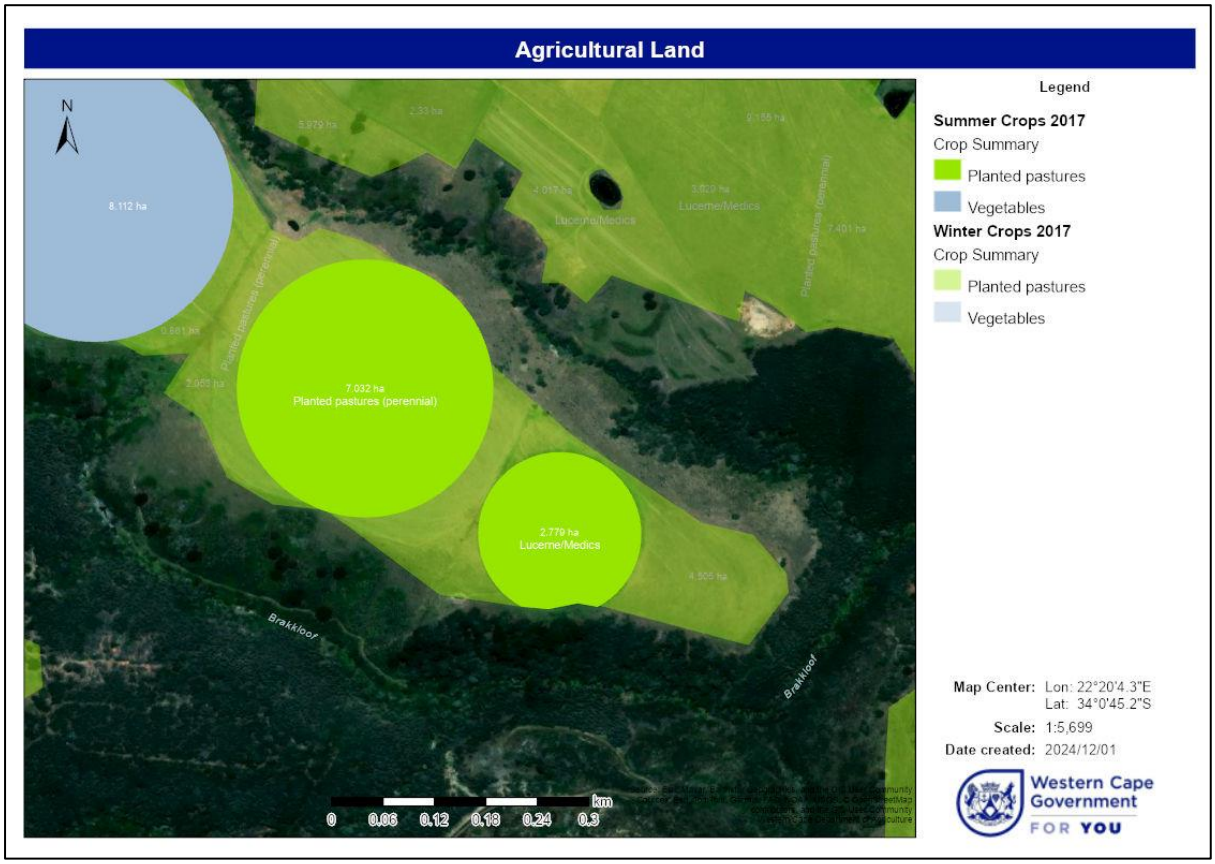


Figure 3: Irrigated planted pasture and vegetables

Plate 1: Photograph of the grazing pasture occupying the eastern portion of the proposed site upon the hilltop

Plate 2: Photograph of the cultivated and irrigated vegetables on the western portion of the proposed site, upon the upper area of the hilltop

1.3 Project proposal

It is proposed to mine weathered granite gravel (aggregate) that will be used by customers for road construction and maintenance projects as well as for other construction and development projects in the area. The proposed mining sequence is as follows:

- Overburden clearing and stockpiling of topsoil.
- Loading of weathered granite gravel/aggregate into trucks using an excavator.
- Recording volumes in trucks.
- Final rehabilitation of slopes to not more than 1:3.
- Shaping the floor.
- Replacing topsoil, re-establishing agricultural contours, stabilising the soil surface and rehabilitating the area so that it can continue to be used for agricultural purposes.
- Concurrent mining and rehabilitation is planned so that any one time the size of the active mining area should not be larger than one hectare.

Stormwater management is proposed via a cut-off drain and silt retention pond (Figure 4). The maximum estimated duration of the proposed mining activities is 5 years. Rehabilitation of the land back to agricultural use is proposed to occur concurrently with the mining. Figure 5 shows the final rehabilitation plan.

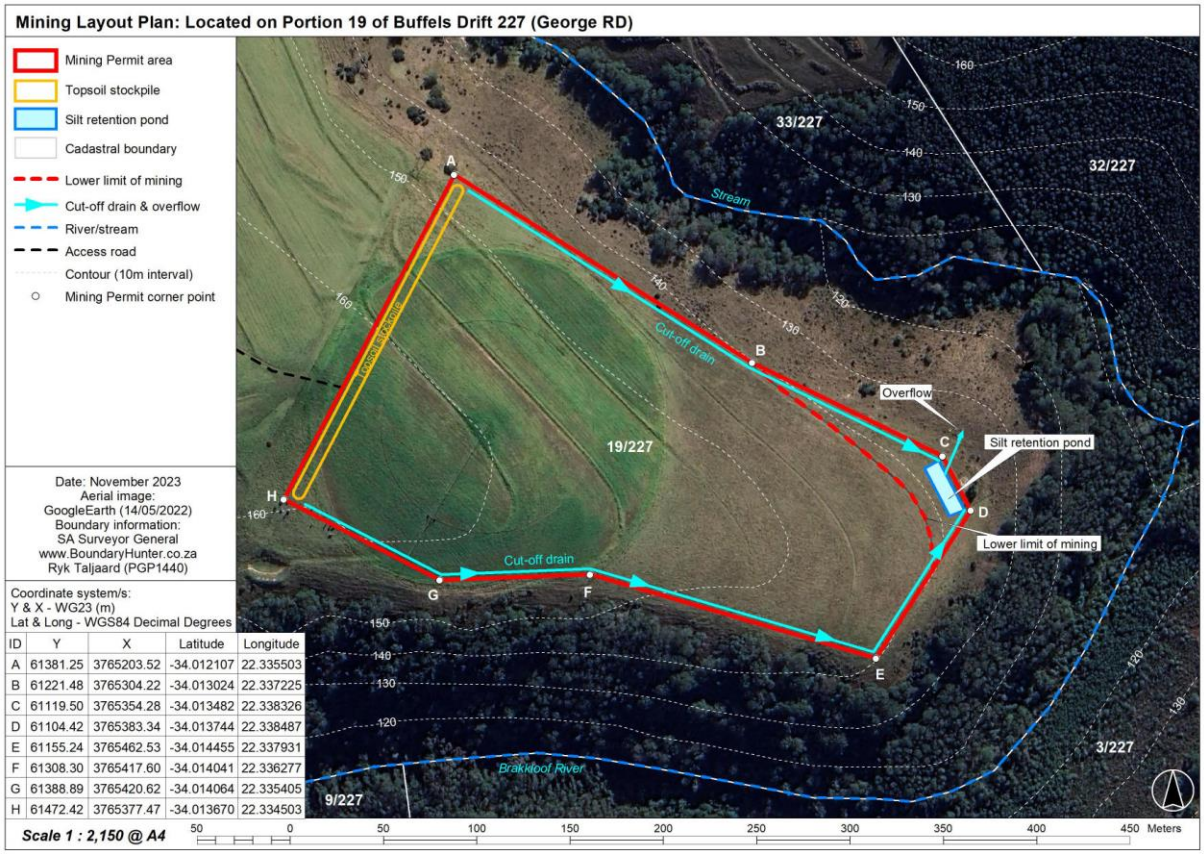


Figure 4: Mining layout plan showing the proposed stormwater management, provided by Klipberg Consulting (2023)

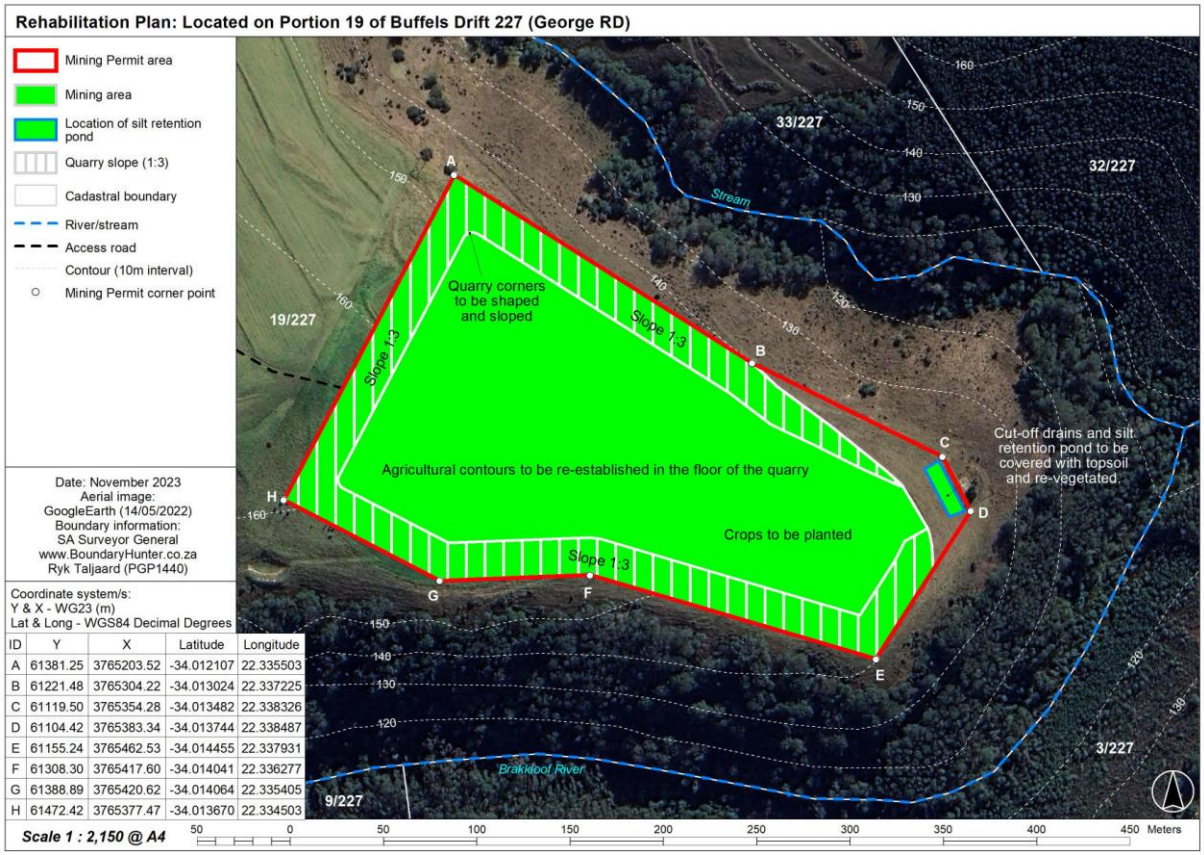
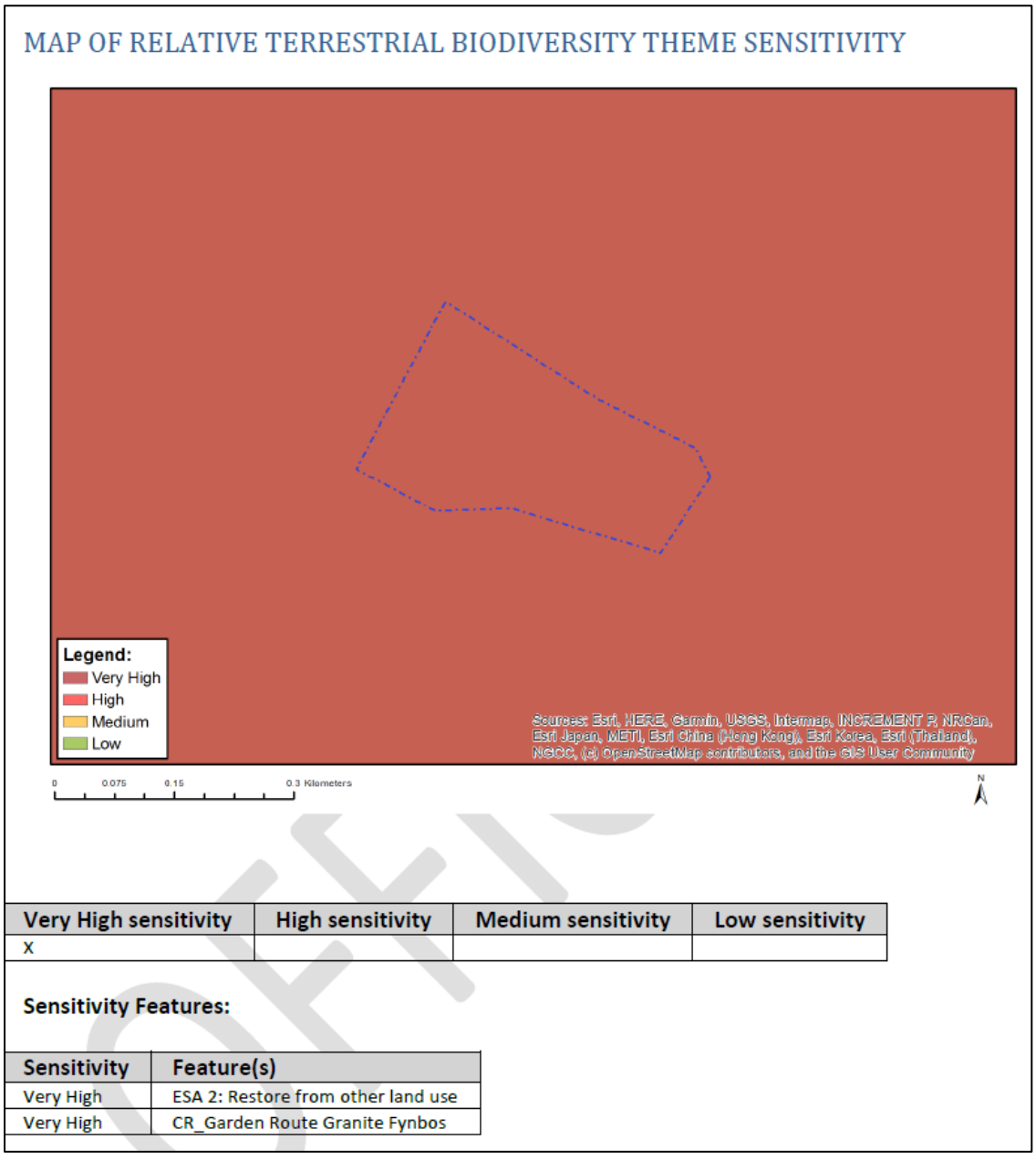


Figure 5: Rehabilitation plan provided by Klipberg Consulting (2023)

1.4 Screening Tool Results

The Screening Tool results, shown in Figure 6 below, rated the site as having Very High sensitivity for the terrestrial biodiversity theme due to the following features:

- Critically Endangered vegetation unit – Garden Route Granite Fynbos, and
- ESA 2: Restore from other land use



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	ESA 2: Restore from other land use
Very High	CR_Garden Route Granite Fynbos

Figure 6: DFFE Screening Tool outcome for the terrestrial biodiversity theme for the site

1.5 Relevant Legislation

South Africa has a strong legislative framework, endorsed by the Constitution and reinforced by our commitments to numerous international conservation agreements, that makes it a legal obligation to protect the country's natural resources and ecosystems.

The following legislation is relevant to the document:

- The National Environmental Management Act 107 of 1998 (NEMA),
- The National Environmental Management: Biodiversity Act No. 10 of 2004 (NEMBA).
- Environmental Impact Assessment (EIA) Regulations: Government Notice No. R. 32828, together with listing notices GN 983-985, which list activities which are subjected to an environmental assessment.
- Conservation of Agricultural Resources Act 43 of 1967.

According to Government Gazette 43110, No. 320 (2020):

- An applicant wishing to undertake a development activity on a site identified on the screening tool as being of "very high sensitivity" for terrestrial biodiversity must submit a Terrestrial Biodiversity Specialist Assessment.
- However, where the information gathered from the site sensitivity verification differs from the designation of "very high" terrestrial biodiversity sensitivity on the screening tool and is found to be of "low" sensitivity, then a Terrestrial Biodiversity Compliance Statement must be submitted.

1.6 Scope of Work

A desktop study to identify:

- The type and status of terrestrial ecosystems on site in terms of applicable local and regional mapping and conservation-planning frameworks;
- Any plant species of conservation concern (SCC) that could occur on site.

A field survey of the preferred development site to identify:

- Terrestrial biodiversity features (vegetation types and fine-scale habitats) present;
- Ecological condition of biodiversity features and sensitivity of the site;
- Species of special concern (protected or SCC) present;

A report providing the following information:

- Baseline profile description of terrestrial ecosystems and plant SCC on site;
- Description of methodology used to verify the sensitivities of the terrestrial biodiversity features and plant species on the site;
- Statement on the duration, date and season of the field survey and the relevance of the season to the outcome of the assessment;
- Description of the assumptions made and any uncertainties or gaps in knowledge or data;
- Proposed impact management outcomes or any monitoring requirements for inclusion in an environmental management programme.
- Any conditions to which this statement is subjected.

2 DESKTOP ASSESSMENT

2.1 Climate and geology

The Garden Route area receives rainfall throughout the year, with the lowest amount in June and the highest amount in November. The average midday temperatures for the area range from 18.2°C in July to 27.6°C in February (Mucina and Rutherford, 2006). The area is characterised by gently undulating topography on the coastal plateau between the Outeniqua Mountains and the ocean. The site is located on erodible soils underlain by the highly resistant granites (Maalgaten Granite specifically) from the George pluton of the Cape Granite Suite. Land transformation for agriculture and development, as well as alien tree infestation in this area, have replaced most of the natural habitat.

2.2 Vegetation

The national vegetation map (SANBI 2018) indicates that the natural vegetation type on site is Garden Route Granite Fynbos (Figure 7), which is classified as Critically Endangered (List of Threatened Ecosystems 2022). The area has been subjected to significant habitat fragmentation from vegetation clearance and land changes for crop cultivation and livestock grazing. Also, woody alien invasive vegetation is common in areas where previous soil disturbance has taken place. The site itself has no remaining intact natural habitat and the vegetation composition has been altered by ploughing, brush-cutting, soil ripping, and livestock grazing.

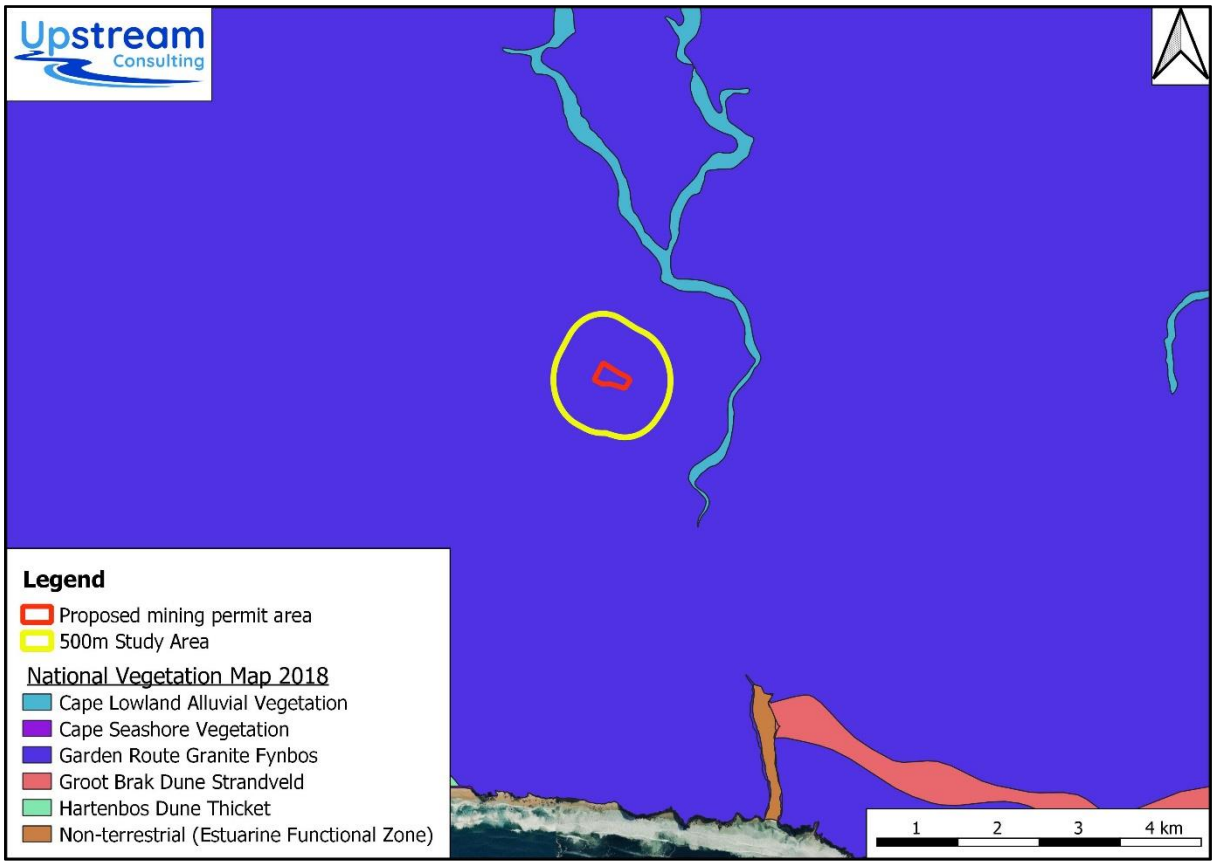


Figure 7: The site in relation to the 2018 mapped vegetation units (NBA, 2018)

2.3 Drainage Network

The study area is located within the K30A quaternary catchment, of which the major river is the Maalgate River. The site is situated on a hilltop between two drainage lines. The Brakkloof River flows south of the site and is joined by an unnamed tributary north of the site before merging into the Maalgate River 2km away (Figure 8).

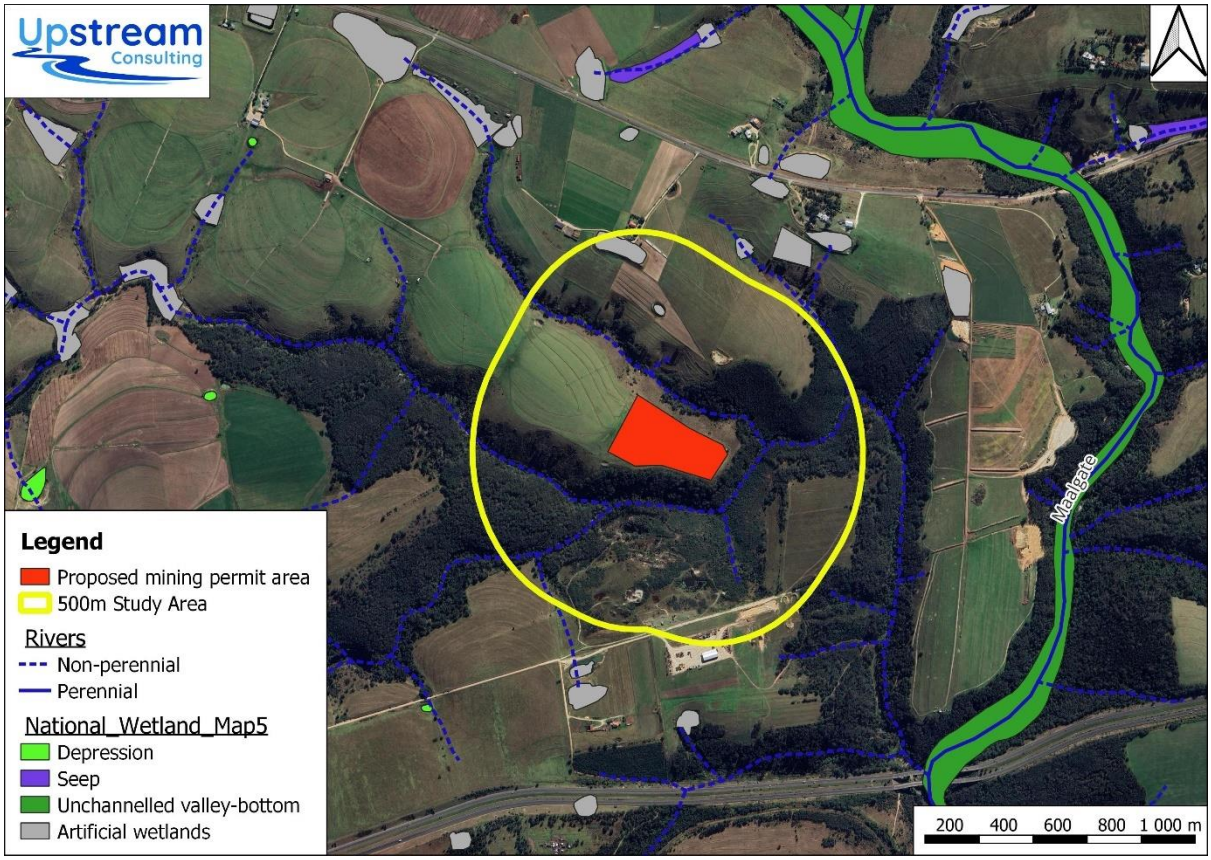


Figure 8: The site in relation to the national river and wetland inventories (CSIR, 2018)

2.4 Western Cape Biodiversity Spatial Plan

The Western Cape Biodiversity Spatial Plan (WCBSP) is recognised by both the Department of Environmental Affairs and South African National Biodiversity Institute. The primary purpose of a map of Critical Biodiversity Areas and Ecological Support Areas is to guide decision-making about where best to locate development. Critical Biodiversity Areas (CBA's) are required to meet biodiversity targets. These areas have high biodiversity and ecological value and therefore must be kept in a natural state without further loss of habitat or species. Low-impact, biodiversity sensitive land uses are the only land uses allowed in CBA's. Critically Endangered (CR) ecosystems, critical corridors for maintaining landscape connectivity and areas required to meet biodiversity pattern targets, are included in CBA's. The WCBSP made a distinction between areas likely to be in a natural condition (CBA1) and areas that could be degraded (CBA2). Ecological Support Areas (ESA's) are not essential for meeting biodiversity targets but are important as they support the functioning of CBA's and Protected Areas (PA's). ESA's support landscape connectivity, surrounds ecological infrastructure that provide ecosystem services,

and strengthen resilience to climate change. These areas include Endangered vegetation; water source and recharge areas; and riparian habitat around rivers and wetlands. The WCBSP also made a distinction between ESA's in a functional condition (ESA1) and degraded areas in need of restoration (ESA2).

There are no CBAs mapped within the study site. The WCBSP shows an area of ESA2 habitat on the south-western portion of the site mapped as Bontebok Extended Distribution Range and Watercourse protection features (Figure 9). The ESA areas are described as not essential for meeting biodiversity targets but play an important role in supporting the functioning of PAs or CBAs and are often vital for delivering ecosystem services. The management objectives of ESA2 areas are to restore or manage to minimize the impact on ecological infrastructure functioning; especially soil and water related services. Therefore, for an ESA2, some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised. However, the status of the ESA2 mapped area is disputed. The WCBSP used the out-dated NFEPA project data which incorrectly mapped this area as an aquatic feature.

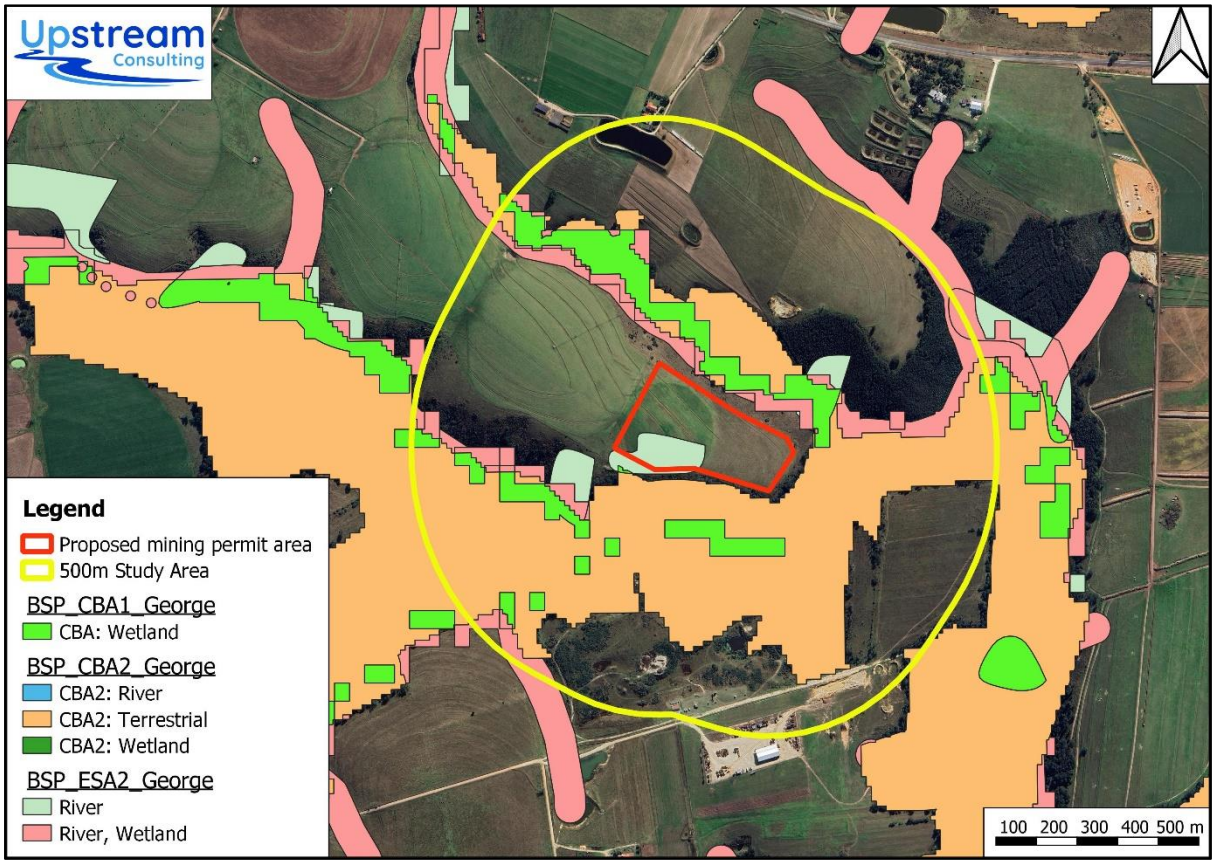


Figure 9: The study site in relation to features identified by the WCBSP (Pence, 2017)

2.5 Historic impacts

Figure 10 shows historic aerial photography of the site from the 25th of August 1957. The proposed mining permit site is clearly under agricultural use. The land has been cleared for many decades and there is no natural vegetation remaining within the site.

Figure 10: Historic aerial photography of the site on the 25th of August 1957 showing the agricultural land use

3 APPROACH AND METHODS

3.1 Desktop Assessment Methods

To gain an understanding of broader vegetation patterns in the surrounding landscape, reference was made to the Vegetation Map of South Africa, Lesotho and Swaziland 2018 version (VEGMAP) (SANBI, 2006–2018), which reflects important recent updates for the region under study. Conservation status for vegetation types were identified from the National Biodiversity Assessment 2018 (SANBI, 2018). An understanding of regional conservation priority areas was informed by the 2017 Western Cape Biodiversity Spatial Plan (WCBSP). A list of plant species of conservation concern (SCC) that could potentially occur at the site were identified from the following sources:

- The National Web-based Environmental Screening Tool (https://screening.environment.gov.za)
- The online Red List of South African Plants v. 2020 (SANBI, 2012–2020) (http://redlist.sanbi.org)
- The online Botanical Database of Southern Africa (SANBI, 2016) (http://newposa.sanbi.org/)
- Observations submitted to the iNaturalist online biodiversity database (https://www.inaturalist.org).

Declared weeds and alien invasive plant species were identified from lists published in terms of the Conservation of Agricultural Resources Act (1983) and National Environmental Management: Biodiversity Act (2004).

3.2 Site Assessment Methods

Infield site assessment was conducted in December 2023 for 3 hours to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web based environmental verification tool (Very high), such as new developments, infrastructure, indigenous/pristine vegetation, etc. The entire site and surrounding area was walked on foot with a hand-held GPS.

Date	3 December 2023
Duration	Approximately 3 hours.
Season	Summer
Season Relevance	Botanical surveys are usually best undertaken in spring in the Western Cape (September) as many geophytic species are only visible then, however the confidence remains high.

During the survey, vegetation units and other habitat types were assessed for their ecological condition. Vegetation units were further surveyed for their dominant and typical component species. Any associations with specific soils, underlying geology, or landforms were noted. The habitat and any variance in these areas were characterised, photographs were taken and the likelihood of any SCC being present was assessed. Sample flora observed during the site survey was photographed using a cellular phone camera with time, GPS and date stamp enabled.

Finally, Site Sensitivity was determined based on the findings above, and by following the guideline criteria methodology for the determination of Site Ecological Importance (SEI), obtained from SANBI's species guideline (2020). Refer to Section 12 for SEI methodology.

4 ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations are relevant:

- Once-off surveys such as this are likely to miss certain ecological information due to seasonality, thus limiting accuracy and confidence. That said, the entire property was groundtruthed on foot, and the level of confidence in the findings is high.
- Infield soil and vegetation sampling was only undertaken within a specific focal area around the proposed site, while the remaining biodiversity features were assessed at a desktop level.
- No detailed assessment of fauna was undertaken.
- The vegetation information provided is based on observation not formal vegetation plots. As such species documented in this report should be considered as a list of dominant and/or indicator species and only provide a very general indication of the composition of the vegetation communities.

5 SITE SENSITIVITY RESULTS

The vegetation of the entire proposed mining permit area has been transformed for agricultural use. The site is located on land which has been cleared, contoured, ploughed, and planted with crops. At present, the western portion is used for irrigated cultivated vegetable production, while the eastern portion is used for livestock grazing and fodder production. There is no remaining natural vegetation within the site boundary. However, the surrounding area does contain disturbed, but natural habitat.

The cultivated fields are used to grow vegetables and irrigated via centre-pivot. Refer to Plate 3. The cultivated fields are presently planted with rows of cabbages, interspersed with weedy plants and grasses, such as *Cyperus esculentus, Cenchrus clandestinus* (kikuyu) and *Trifolium repens* (white clover). The remainder of the site is covered by pasture grasses for livestock grazing, however contour berms and soil disturbance indicate that this area was previously also used for crop cultivation. The pasture contains palatable herbs and grasses such as *Lolium perenne, Eragrostis curvula, Cenchrus clandestinus, Cynodon dactylon, Trifolium repens, Taraxacum officinale* and *Medicago sativa.* Refer to Plate 4.

Plate 3: Photograph of the cultivated vegetable field on the hillslope within the proposed site boundary

Plate 4: Photograph of the livestock grazing pasture within the proposed site boundary

The steeper slopes and riverine areas are covered by alien invasive tree species, dominantly *Acacia mearnsii* (black wattle) and *Pinus* sp. Refer to Plate 5. The stream channels are eroded and heavily invaded by *Solanum mauritianum* (bugweed). The alien trees have resulted in bank erosion, channel shading, and reduced flow.

Plate 5: Photograph of the steep valley slopes beyond the site, which are heavily infested with alien invasive trees, such as black wattle.

Between the transformed fields and the forest there is an area of grassy fynbos and thicket habitat. This forest edge has been disturbed by livestock and brushcutting but still contains several disturbance-tolerant fynbos and thicket species. Refer to Plate 6. The narrow fringe of thicket around the dense wattle forest includes species such as *Halleria lucida, Carissa bispinosa, Diospyros dichrophylla, Searsia pallens, S. lucida, Gymnosporia buxifolia* and *Buddleja saligna.* The latter species are also typical 'invader' (bushclump forming) species in senescent renosterveld or fynbos.

Plate 6: Photograph showing the narrow band of thicket between the grazing pasture and steep slopes dominated entirely by alien trees

There are also areas of remaining fynbos vegetation, surrounding the boundary of the proposed mining area, which are interspersed with weeds and pasture grasses. Refer to Plate 7. The dominant indigenous species are *Metalasia acuta, Erica peltata* and *Helicrysum* sp, but *Passerina corymbosa, Seriphium plumosum, Anthospermum aethiopicum, Erica sparsa, Bobartia aphylla, Pteridium aquilinum* and *Erigeron canadensis* are present (Plate 8).

Plate 7: Photograph of the disturbed (brush cut and grazed) grassy fynbos in the foreground with the alien infested riparian area beyond, downslope of the eastern site boundary

Plate 8: Photograph of the narrow band of re-emergent fynbos species, beyond the site boundary, between the transformed pasture areas and steep valley slopes covered with alien invasive trees

All the above-mentioned species are common and widespread. However, the northern valley was found to contain protected plant species such as *Pterocelastrus tricuspidatus* (candlewood) and *Aloe ferox*.

There are rocky granite outcrops on the north facing hill slope which contain protected pockets for various small succulents, shrubs, aloes, and plants such as *Rhoicissus digitata* and *Lauridia tetragona.* Refer to Plate 9.

It is therefore critical that the mining activities and any associated impacts do not extend beyond the proposed site boundary.

Plate 9: Rocky outcrop on the north facing hillslope, beyond the site boundary, with thicket vegetation including Candlewood trees and Aloes

The different land uses and cover within the site, and the surrounding area, were mapped (Figure 11), and can be described as:

1. Transformed agricultural land (cultivated vegetables and planted pasture)
2. Grassy fynbos and thicket habitat (highly disturbed)
3. Dense alien invasive trees (forest on steep slopes)
4. Thicket (disturbed but containing protected species)
5. Riparian habitat (heavily degraded)

Figure 11: Land cover characteristics of the site and surrounding area

The proposed mining permit area has been sited upon agricultural land, with no remaining natural habitat, and low environmental sensitivity. The land has been cleared, the soil has been ploughed, and crops have been planted. There are areas surrounding the study site which contain natural vegetation, although degraded, which have a higher sensitivity in terms of terrestrial biodiversity. These sensitive areas, especially those containing protected plant species, must not be encroached upon by the activity.

The map in Figure 12 below shows the terrestrial biodiversity sensitivity of the site (Low) and surrounding areas.

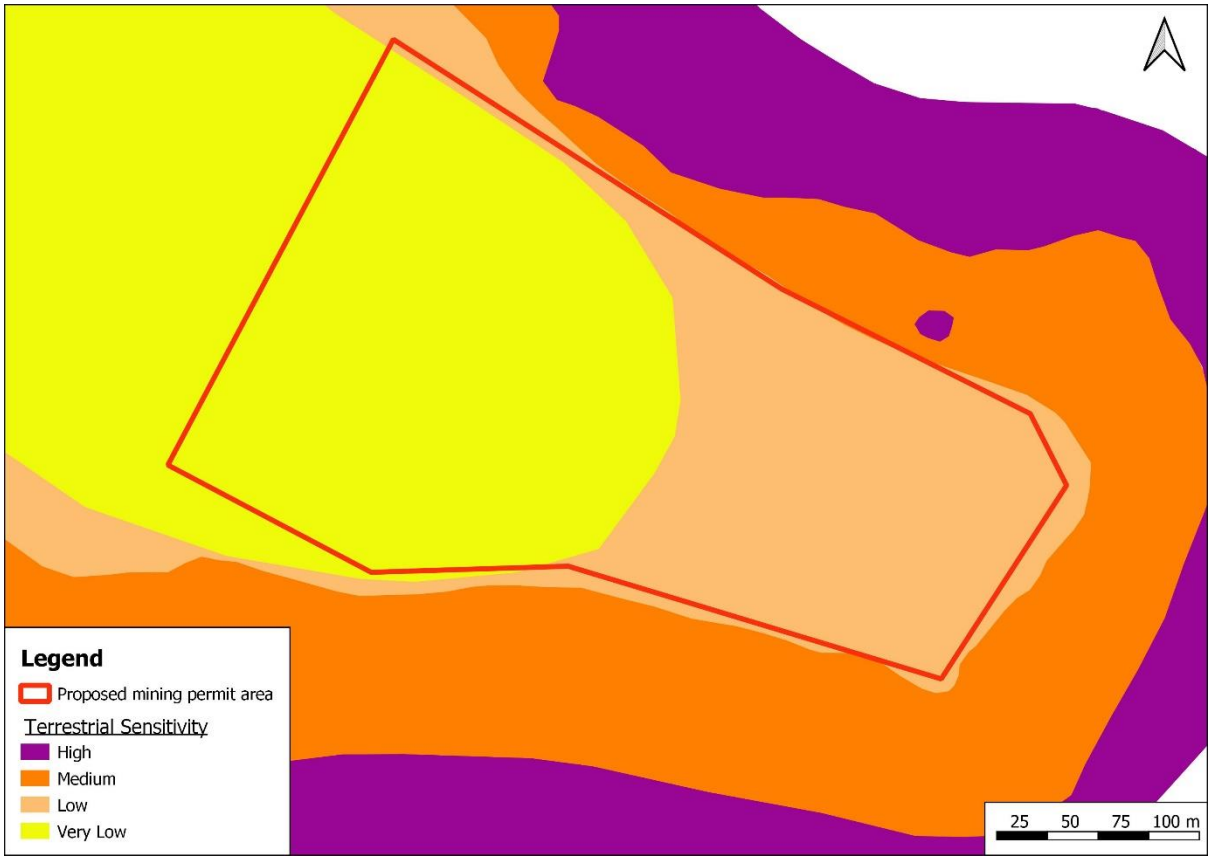


Figure 12: Terrestrial biodiversity sensitivity map for the project based on site verification.

6 COMPLIANCE STATEMENT

The assessment determined that there is a discrepancy between the environmental *status quo* versus the environmental sensitivity as identified on the national web based environmental screening tool (Very High). The tool identified the site as having 'Very High' terrestrial biodiversity sensitivity due to Garden Route Granite Fynbos (Critically Endangered) vegetation (NBA, 2018) and an area of ESA2 habitat (WCBSP, 2017). However, the broad-scale desktop mapping from these data layers is slightly inaccurate and, following on-site assessment, these features were not found to be present within the site.

It is the author's opinion that the site earmarked for the project is significantly modified/transformed due to a long history of cultivation. It has not laid fallow during which period indigenous species could have returned to recolonize the site. In other words, its chances of rehabilitating on its own if cultivation is ceased, is slim. The surrounding area, on the other hand, seems to have been less impacted by cultivation hence the return of fynbos and thicket species. The latter area is thus worth protecting in perpetuity.

There is no remaining natural vegetation within the proposed site boundary, which has been sited upon a hilltop used for vegetable cultivation and pasture crops. Therefore, the project will not impact any Garden Route Granite Fynbos (Critically Endangered) vegetation. The ESA2 feature shown by the

WCBSP was not identified on site and thus the project will not impact any conservation support areas. The reason for the discrepancy is likely due to the 2017 WCBSP data layer having incorporated the broad-scale mapping of the 2011 NFEPA project. The NFEPA data layer classified a small portion of the site as freshwater habitat and subsequently the WCBSP incorporated this polygon as a conservation area (ESA2 habitat). However, the latest available aquatic spatial data of the South African Inventory of Inland Aquatic Ecosystems (SAIIAE), produced in 2018, excludes this area from any national river and wetland datasets. This was confirmed during site verification as no aquatic features were identified within the site. Therefore, the ESA2 area shown within the site should be considered a mapping inaccuracy, and consequently, this should not be a Very High sensitivity feature in the DFFE Screening Tool. Additionally, the No-Go Alternative is the continuation of the *status quo*, which involves the continuation of the current land use, without any habitat restoration.

Due to the above-mentioned discrepancies, and site assessment, the report refutes the 'Very High' sensitivity outcome of the Screening Tool and recommends that the site sensitivity rating for the Terrestrial Biodiversity Theme be regarded as 'Low'.

7 PROPOSED IMPACT MANAGEMENT OUTCOMES

The mining area must be demarcated and there must be no disturbance to the surrounding area. Prior to commencement, measures (cut-off drains/channels) must be put in place to manage runoff and prevent silt from entering the surrounding environment. Topsoil over the area to be mined must be removed and stored for later replacement over the mined area. Topsoil stockpiles should ideally be protected by geotextile, but this will probably not be practical in the long term.

During operation, the stormwater management system must be inspected regularly and maintained. Erosion must be halted immediately, and sediment must not leave the mining area.

Rehabilitation should take place concurrently with mining, as far as possible. Rehabilitation should include sloping the mined area, topsoiling, and stabilisation (including the use of geotextiles where necessary) and seeding.

Generic mitigation measures found in the Environmental Management Programme (EMPr) and standard SHERQ site 'housekeeping' will be sufficient to manage threats such as dust, fire, alien vegetation introduction and proliferation, poor waste management, as well as chemical spills.

8 CONCLUSION

Debbie Fordham of Upstream Consulting was appointed by Kirsten & Tulleken Vervoer cc to conduct an independent biodiversity specialist assessment for the proposed mining permit area on Portion 19 of the Farm Buffels Drift 227, George. The high terrestrial biodiversity theme sensitivity indicated by the Screening Tool is disputed. There is no loss of any terrestrial biodiversity or species of conservation concern expected to occur from the mining of the site. It is the specialist opinion that the proposed activity will have a low potential impact on terrestrial biodiversity and therefore the mining permit can be approved from a terrestrial biodiversity perspective.

.

9 REFERENCES

- BROMILOW, C. 2001. Problem Plants of South Africa: a Guide to the Identification and Control of more than 300 invasive plants and other weeds. Briza Publications, Pretoria.
- CSIR (Council for Scientific and Industrial Research). 2010. National Aquatic Ecosystem Priority Areas (NFEPA). Council for Scientific and Industrial Research, Pretoria, South Africa.
- IUCN. (2017). The IUCN Red List of Threatened Species. www.iucnredlist.org (Accessed: July 2020)
- Mucina, L. & Rutherford, M.C. (Eds.). (2006). The vegetation of South Africa, Lesotho and Swaziland. Strelizia 19. South African National Biodiversity Institute, Pretoria South African.
- Raimondo, D., Von Staden, L., Foden, W., Victor, J.E., Helme, N.A., Turner, R.C., Kamundi, D.A. and Manyama, P.A. (Eds). 2009. Red List of South African Plants. Strelitzia 25. South African National Biodiversity Institute, Pretoria.
- Skowno, A.L., Raimondo, D.C., Poole, C.J., Fizzotti, B. and Slingsby, J.A. (eds.). 2019. South African National Biodiversity Assessment 2018 Technical Report Volume 1: Terrestrial Realm. South African National Biodiversity Institute, Pretoria.
- South African National Biodiversity Institute. 2016. Botanical Database of Southern Africa (BODATSA). Available online at http://newposa.sanbi.org/
- South African National Biodiversity Institute (SANBI). 2006–2018. The Vegetation Map of South Africa, Lesotho and Swaziland, Version 2018. Mucina, L., Rutherford, M.C. and Powrie, L.W. (Editors). Available online at http://bgis.sanbi.org/Projects/Detail/186
- South African National Biodiversity Institute (SANBI). 2012–2020. Red List of South African Plants v. 2020. Available online at http://redlist.sanbi.org/
- South African National Biodiversity Institute (SANBI). 2018. Final Vegetation Map of South Africa, Lesotho and Swaziland 2018 [spatial dataset]. Available online at http://bgis.sanbi.org/SpatialDataset/Detail/1674
- South African National Biodiversity Institute (SANBI). 2018. Terrestrial ecosystem threat status and protection level – remaining extent 2018 [spatial dataset]. Available online at http://bgis.sanbi.org/SpatialDataset/Detail/2676
- South African National Biodiversity Institute (SANBI). 2020. Species Environmental Assessment Guideline: Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessments in South Africa. Version 1.2020. South African National Biodiversity Institute, Pretoria.

10 SPECIALIST CV

CURRICULUM VITAE

Debra Jane Fordham
Cell: 0724448243
Email: debbie@upstreamconsulting.co.za

Professional profile

Debbie Fordham is an ecologist and Professional Wetland Scientist, registered with the SWSPCP (No. 3683) and SACNASP (119102, Cert. Nat. Sci. Ecological Science). She has over 10 years of working experience, largely specialising in aquatic ecology. She has authored over 100 reports and applications and she constantly contributes to the scientific and local community. Debbie holds a M.Sc. degree in Environmental Science from Rhodes University, by thesis, entitled: The geomorphic origin and evolution of the Tierkloof Wetland, a peatland dominated by *Prionium serratum* in the Western Cape.

She is a certified Professional Wetland Scientist (PWS certification number 3683) by the Society for Wetland Scientists (SWS) Professional Certification Program, which is internationally accredited by the Council of Engineering and Scientific Specialty Boards (CESB). She is a member of the Society for Wetland Scientists, the South African Wetland Society, the Southern African Association of Geomorphologists, and SACNASP.

Tertiary Education

- M.Sc. Environmental Science (Rhodes University):

Master of Science thesis entitled: The geomorphic origin, evolution and collapse of a peatland dominated by *Prionium serratum:* a case study of the Tierkloof Wetland, Western Cape.

- BA Hons. Environmental Science (Rhodes University):

Honours dissertation: The status and use of Aloe ferox. Mill in the Grahamstown commonage, South Africa.

Courses: Wetland Ecology, Environmental Water Quality /Toxicology, Biodiversity, Non-Timber Forest Products (NTFPs) and Rural Livelihoods, Environmental Impact Assessment (EIA), Statistics

- **BA -** Environmental Science and Geography (Rhodes University)

Work Experience:

- Ecological specialist (2022/03/01 – present)
- Sharples Environmental Services cc (2016/08/10 – 2022/03/01)

Position: Aquatic Ecologist and WULA Manager

- KSEMS Environmental Consulting (2015/08/10 - 2016/07/31)

Position: Wetland specialist

- AGES EC (Pty) Ltd (2014/10/01 – 2015/08/10)

Position: Aquatic Ecologist and WULA Manager

- Environmental Impact Management Services (2014/02/04-2014/02/07)

Position: Environmental consultant

- Rhodes University (2009/04/01 – 2010/12/17)

Select Reports:

- Terrestrial Biodiversity Compliance Statement for the proposed development of Portion 217 of Vyf Brakke Fontein, Aalwyndal
- Terrestrial Biodiversity Compliance Statement for the residential development of Erf 21281, Mossel Bay
- Aquatic biodiversity impact assessment for the proposed residential development on Portion 21 of Kraaibosch 195, George
- Aquatic biodiversity impact assessment for the expansion of Kolkies River Gypsum Mine.
- Aquatic biodiversity impact assessment for the proposed residential development of Portion 7 and 8, Kranshoek
- Aquatic biodiversity impact assessment for the expansion of Maskam Gypsum Mine and the construction of a fine residue tailings dam, Vanrhynsdorp
- Aquatic biodiversity impact assessment for the construction of the Meul River pumpstation rising main sewer pipeline, George
- Aquatic biodiversity impact assessment for the expansion of Kleingeluk Quarry, Hartenbos
- Unauthorised Clearance of Vegetation and Construction of a Dam on Farm Angeliersbosch Re/157, Prince Albert
- Rehabilitation of The Excavation of a Channel Within the Brandwag River, On the Remainder of Farm Bowerf 161, Brandwacht, Mossel Bay
- Rehabilitation Plan for activities On A Portion of Remainder Portion 104 Of the Farm Modder Rivier No 209, George
- Aquatic Impact Assessment for The Proposed Extension of Walvis Street, Mossel Bay
- Rehabilitation Plan for the transformation of agricultural land to commercial land on Farm Re 109/209, George
- Aquatic assessment for the proposed Dana Bay Access Road, near Mossel Bay
- Invasive Alien Plant Control Plan for New Horizons Mixed-Use Development on Farm Hillview No. 437, Plettenberg Bay
- Cemetery expansion on Erf 566 and 480, Melkhoutfontein
- The expansion of Goue Akker Cemetery in Beaufort West
- Construction of a bulk sewerage pipeline from Green Valley township, Wittedrift, to the Plettenberg Bay WWTW
- Expansion of the Gansbaai Sand en Klip Quarry
- Seven Oaks Residential Development, Wittedrift, Plettenberg Bay
- Gran Sasso Quarry water abstraction and proposed construction of a road crossing a watercourse, Tygervalley, Cape Town
- Maintenance of Trunk Road 33/4 and Trunk Road 34/2, though Meiringspoort, Western Cape Province
- Proposed Waste Water Treatment Works, Irrigation Activities & Effluent Discharge by Parmalat SA (Pty) Ltd, Bonnievale

BRIEF CV OF REVIEW SPECIALIST

M.G. (Mark) BERRY
ENVIRONMENTAL CONSULTANT & BIODIVERSITY SPECIALIST

Address: 14 Alvin Crescent, Somerset West, 7130, Western Cape
Tel: 083 286-9470 **Fax:** 086 759-1908 **E-mail:** markberry@webafrica.org.za

PROFESSIONAL STATEMENT
Environmental assessment professional and biodiversity specialist with over 20 years of experience mainly in the Western Cape Province, but also in the Northern Cape and Eastern Cape. Experience in Environmental Impact Assessments (EIA's), biodiversity assessments, Environmental Management Programmes (EMPr's), Environmental Control Officer (ECO) duties and environmental due diligence investigations.

WORK EXPERIENCE
1989-1990 Nature Conservation Officer in the South African Air Force, based at Langebaan Road Air Force Base
1997-2005 Employed as principal environmental specialist at Planning Partners, a multi-disciplinary consultancy specialising in town and regional planning, environmental planning and landscape architecture. Duties included the conducting of EIA's, compiling EMPr's, ECO duties, biodiversity surveys and status quo environmental assessments for spatial development frameworks.
2000-2006 Examiner for the Board of Control for Landscape Architects (BOCLA), responsible for the setting up and marking of the Environmental Planning Section of exam paper.
2005-current Started Mark Berry Environmental Consultants in June 2005. Responsibilities include office management, seeking tenders, conducting EIA's, compiling EMPr's, construction site environmental audits, biodiversity surveys, etc. A relationship is maintained with previous employer, and, among other, undertook land-use surveys and reporting for the Eskom's site safety reports for three proposed nuclear power plants in the Western and Eastern Cape Provinces.

QUALIFICATIONS
- BSc (1988) University of Stellenbosch
- BSc-Hons in Botany (1991) University of Stellenbosch
- MSc in Botany (1993) Nelson Mandela Metropolitan University
- PhD in Botany (2000) Nelson Mandela Metropolitan University.

PROFESSIONAL MEMBERSHIP
Professional member (reg. no. 400073/98) of the South African Council for Natural Scientific Professions (SACNASP).

REFERENCES
Dr John Manning (Compton Herbarium, Kirstenbosch)
Phone: (021) 799-8660, e-mail: J.Manning@sanbi.org.za
Warren Manuel (Environmental Manager at Mossel Bay Municipality)
Phone: (044) 606-5163, e-mail: wmanuel@mosselbay.gov.za
Andrew Cleghorn (civil engineer and branch manager at Knight Piesold (Pty) Ltd)
Phone: (021) 555-0400, e-mail: acleghorn@knightpiesold.com
Prof Eileen Campbell (Department of Botany, Nelson Mandela Metropolitan University)
Phone: (041) 504-2329, e-mail: Eileen.Campbell@nmmu.ac.za

11 SPECIALIST DECLARATION

Specialist Company Name:	Upstream Consulting			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	NA
Specialist name:	Debbie Fordham			
Specialist Qualifications:	M.Sc. Environmental Science – Rhodes University SACNASP registered Professional Wetland Scientist			
Professional affiliation/registration:	She is a certified Professional Wetland Scientist (PWS certification number 3683) by the Society for Wetland Scientists (SWS) Professional Certification Program, which is internationally accredited by the Council of Engineering and Scientific Specialty Boards (CESB). She is SACNASP registered – no. 119102) and a member of the Society for Wetland Scientists, the South African Wetland Society, and the Southern African Association of Geomorphologists.			
Physical address:	25 Blommekloof Street, George			
Postal address:	25 Blommekloof Street, George			
Postal code:	6530	Cell:	0724448243	
Telephone:		Fax:		
E-mail:	debbie@upstreamconsulting.co.za			

DECLARATION BY THE SPECIALIST

I, __Debbie Fordham_____, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the Specialist

Name of Company: Upstream Consulting

DATE: 22/01/2024

12 SITE SENSITIVITY METHODOLOGY

Site Ecological Importance (SEI) is considered to be a function of the biodiversity importance (BI) of the receptor (e.g. SCC, the vegetation community or habitat type present on site) and its resilience to impacts (receptor resilience or RR) as follows:

SEI = BI + RR

BI in turn is a function of conservation importance (CI) and the functional integrity (FI) of the receptor as follows:

BI = CI + FI

Conservation importance (CI) is evaluated in accordance with recognised established internationally principles and criteria for the determination of biodiversity-related value, including the IUCN Red List of Species, Red List of Ecosystems and key biodiversity areas. CI is defined here as: "The importance of a site for supporting biodiversity features of conservation concern present, e.g. populations of SCC (CR, EN, VU & NT), Rare species, range-restricted species, and areas of threatened ecosystem types, through mainly natural processes". Fulfilling criteria to evaluate CI do not rely on a single specific threshold for each of the above defining characteristics but can act in combination or in isolation, providing a more robust evaluation of CI (Table 12.1).

Table 12.1: Conservation importance (CI) criteria.

CI	Criteria
Very high	Confirmed or highly likely occurrence of CR, EN, VU or Extremely Rare or Critically Rare species that have a global EOO of <10 km^2. Any area of natural habitat of a CR ecosystem type or large area (>0.1% of the total ecosystem type extent) of natural habitat of EN ecosystem type.
High	Confirmed or highly likely occurrence of CR, EN and VU species that have a global EOO of >10 km^2. IUCN threatened species (CR, EN & VU) must be listed under any criterion other than A. If listed as threatened only under Criterion A, include if there are less than 10 locations or <10 000 mature individuals remaining. Small area (>0.01% but <0.1% of the total ecosystem type extent) of natural habitat of EN ecosystem type or large area (>0.1%) of natural habitat of VU ecosystem type. Presence of Rare species.
Medium	Confirmed or highly likely occurrence of populations of NT species, threatened species (CR, EN & VU) listed under Criterion A only and which have more than 10 locations or more than 10 000 mature individuals. Any area of natural habitat of threatened ecosystem type with status of VU. Presence of range-restricted species.
Low	>50% of receptor contains natural habitat with potential to support SCC. No confirmed or highly likely populations of SCC. No confirmed or highly likely populations of range-restricted species. <50% of receptor contains natural habitat with limited potential to support SCC.
Very low	No confirmed and highly unlikely populations of SCC. No confirmed and highly unlikely populations of range-restricted species. No natural habitat remaining.

Functional integrity (FI) of the receptor (e.g. the vegetation community or habitat type) is defined here as the receptors' current ability to maintain the structure and functions that define it, compared to its known or predicted state under ideal conditions. Ecological processes can be considered to be mostly intact and functional if the receptor area has low levels of current ecological disruptors, has good

connectivity to other areas and is a relatively large area. As for CI, the fulfilling criteria to evaluate FI do not rely on a single specific threshold for each of the above defining characteristics but can act in combination or in isolation (Table 12.2).

Table 12.2: Functional integrity (FI) criteria.

FI	Criteria
Very high	Very large (>100 ha) intact area for any conservation status of ecosystem type or >5 ha for CR ecosystem types. High habitat connectivity serving as functional ecological corridors, limited road network between intact habitat patches. No or minimal current negative ecological impacts with no signs of major past disturbance (e.g. ploughing).
High	Large (>20 ha but <100 ha) intact area for any conservation status of ecosystem type or >10 ha for EN ecosystem types. Good habitat connectivity with potentially functional ecological corridors and a regularly used road network between intact habitat patches. Only minor current negative ecological impacts (e.g. few livestock utilising area) with no signs of major past disturbance (e.g. ploughing) and good rehabilitation potential.
Medium	Medium (>5 ha but <20 ha) semi-intact area for any conservation status of ecosystem type or >20 ha for VU ecosystem types. Only narrow corridors of good habitat connectivity or larger areas of poor habitat connectivity and a busy used road network between intact habitat patches. Mostly minor current negative ecological impacts with some major impacts (e.g. established population of alien and invasive flora) and a few signs of minor past disturbance. Moderate rehabilitation potential.
Low	Small (>1 ha but <5 ha) area. Almost no habitat connectivity but migrations still possible across some modified or degraded natural habitat and a very busy used road network surrounds the area. Low rehabilitation potential. Several minor and major current negative ecological impacts.
Very low	Very small (<1 ha) area. No habitat connectivity except for flora with wind-dispersed seeds. Several major current negative ecological impacts

Recalling that biodiversity importance (BI) is a function of conservation importance (CI) and the functional integrity (FI) of a receptor, BI can be derived from a simple matrix of CI and FI as follows:

Biodiversity importance		**Conservation importance**				
		Very high	High	Medium	Low	Very low
Functional integrity	Very high			High	Medium	Low
	High		High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	Low	Medium	Medium	Low	Low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

Receptor resilience (RR) is defined here as: "The intrinsic capacity of the receptor to resist major damage from disturbance and/or to recover to its original state with limited or no human intervention." The fulfilling criteria to evaluate RR are based on the estimated recovery time required to restore an

appreciable portion of functionality to the receptor (Table 12.3) and will require justification by the specialist.

Table 12.3: Receptor resilience (RR) criteria.

RR	Criteria
Very high	Habitat that can recover rapidly (<5 years) to restore >75% of the original species composition and functionality of the receptor functionality, or species that have a very high likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a very high likelihood of returning to a site once the disturbance or impact has been removed.
High	Habitat that can recover relatively quickly (5-10 years) to restore >75% of the original species composition and functionality of the receptor functionality, or species that have a high likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a high likelihood of returning to a site once the disturbance or impact has been removed.
Medium	Will recover slowly (>10 years) to restore >75% of the original species composition and functionality of the receptor functionality, or species that have a moderate likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a moderate likelihood of returning to a site once the disturbance or impact has been removed.
Low	Habitat that is unlikely to be able to recover fully after a relatively long period: >15 years required to restore ~ less than 50% of the original species composition and functionality of the receptor functionality, or species that have a low likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a low likelihood of returning to a site once the disturbance or impact has been removed.
Very low	Habitat that is unable to recover from major impacts, or species that are unlikely to remain at a site even when a disturbance or impact is occurring, or species that are unlikely to return to a site once the disturbance or impact has been removed.

Finally, after the successful evaluation of both BI and RR as described above, it is possible to evaluate the **site ecological importance (SEI)** from the final matrix as follows:

Site ecological importance		**Biodiversity importance**				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low			High	Medium	Low
	Low		Very high	High	Medium	Very low
	Medium	Very high	High	Medium	Low	Very low
	High	High	Medium	Low	Very low	Very low
	Very high	Medium	Low	Very low	Very low	Very low

Table 12.4: Guidelines for interpreting SEI in the context of the proposed development activities.

SEI	Interpretation in relation to proposed development activities
	Avoidance mitigation - no destructive development activities should be considered. Offset mitigation not acceptable/not possible (i.e. last remaining populations of species, last remaining good condition patches of ecosystems/unique species assemblages). Destructive impacts for species/ecosystems where persistence target remains.

High	Avoidance mitigation wherever possible. Minimisation mitigation - changes to project infrastructure design to limit the amount of habitat impacted; limited development activities of low impact acceptable. Offset mitigation may be required for high impact activities.
Medium	Minimisation and restoration mitigation - development activities of medium impact acceptable followed by appropriate restoration activities.
Low	Minimisation and restoration mitigation - development activities of medium to high impact acceptable followed by appropriate restoration activities.
Very low	Minimisation mitigation - development activities of medium to high impact acceptable and restoration activities may not be required.

Annexure 19

Planning and Development
E-mail: town.planning.application@george.gov.za
Tel: +27 (0)44 801 9477

LAND USE PLANNING PRE-APPLICATION CONSULTATION FORM

PLEASE NOTE:

Pre-application consultation is an advisory session and is required prior to submission of an application for rezoning, consent use, temporary departure and subdivision. It does not in any way pre-empt the outcome of any future application which may be submitted to the Municipality.

PART A: PARTICULARS

Reference number: __**Collab no. 3452293**_____

Purpose of consultation: **Pre-Application**_____

Brief proposal: **Consent Use for a Quarry**_____

Property(ies) description: **Portion 19 of the Farm Buffels Drift No. 227, George.**_____

Date: **04/10/2024**_____

Attendees:

	Name & Surname	Organisation	Contact Number	E-mail
Official	**Ilane Huyser**	**George Municipality**	**044 801 9120**	**Ihuyser@george.gov.za**
	Robert Jv Rensburg	**George Municipality**	**044 801 9477**	**rhjansevanrensburg@george.gov.za**
Pre-applicant	**Alexander Havenga**	**Nel & de Kock Town and Regional Planners**	**044 874 5207**	**neldek@mweb.co.za**

Documentation provided for discussion:

(Include document reference, document/plan dates and plan numbers where possible and attach to this form)

Title Deed No. T28967/1993;

SG Diagram No. 716/53;

Locality Map;

Site Development Plan;

Mining Permit; and

Environmental Authorisation.

Has pre-application been undertaken for a Land Development application with the Department of Environmental Affairs & Development Planning (DEA&DP)?

(If so, please provide a copy of the minutes)

	NO

Comprehensive overview of proposal:

Application is being made for a consent use in terms of Section 15.(2)(o) of the By-Law on Municipal Land Use Planning of George Municipality, 2023, for a quarry in order to permit the owner to extract stone and gravel from Portion 19 of the Farm Buffels Drift No. 227, George.

PART C: QUESTIONNAIRES

SECTION A:
DETERMINATION OF APPLICATION TYPES, PRESCRIBED NOTICE AND ADVERTISEMENT PROCEDURES

Tick if relevant		What land use planning applications are required?	Application fees payable
	2(a)	a rezoning of land;	R
	2(b)	a permanent departure from the development parameters of the zoning scheme;	R
	2(c)	a departure granted on a temporary basis to utilise land for a purpose not permitted in terms of the primary rights of the zoning applicable to the land;	R
	2(d)	a subdivision of land that is not exempted in terms of section 24, including the registration of a servitude or lease agreement;	R
	2(e)	a consolidation of land that is not exempted in terms of section 24;	R
	2(f)	a removal, suspension or amendment of restrictive conditions in respect of a land unit;	R
	2(g)	a permission required in terms of the zoning scheme;	R
	2(h)	an amendment, deletion or imposition of conditions in respect of an existing approval;	R
	2(i)	an extension of the validity period of an approval;	R
	2(j)	an approval of an overlay zone as contemplated in the zoning scheme;	R
	2(k)	an amendment or cancellation of an approved subdivision plan or part thereof,	R

		including a general plan or diagram;	
	2(l)	a permission required in terms of a condition of approval;	R
	2(m)	A determination of a zoning;	R
	2(n)	A closure of a public place or part thereof;	R
X	2(o)	a consent use contemplated in the zoning scheme;	R
	2(p)	an occasional use of land;	R
	2(q)	to disestablish a home owner's association;	R
	2(r)	to rectify a failure by a home owner's association to meet its obligations in respect of the control over or maintenance of services;	R
	2(s)	a permission required for the reconstruction of an existing building that constitutes a non-conforming use that is destroyed or damaged to the extent that it is necessary to demolish a substantial part of the building	R
Tick if relevant		**What prescribed notice and advertisement procedures will be required?**	**Advertising fees payable**
Y	N	Serving of notices (i.e. registered letters etc.)	R
Y	N	Publication of notices (i.e. Provincial Gazette, Local Newspaper(s) etc.)	R
Y	N	Additional publication of notices (i.e. Site notice, public meeting, local radio, website, letters of consent etc.)	R
Y	N	Placing of final notice (i.e. Provincial Gazette etc.)	R
		TOTAL APPLICATION FEE* (VAT excluded):	To be confirmed

PLEASE NOTE: * *Application fees are estimated on the information discussed and are subject to change with submission of the formal application and/or yearly application fee increase.*

SECTION B:

PROVISIONS IN TERMS OF THE RELEVANT PLANNING LEGISLATION / POLICIES / GUIDELINES

QUESTIONS REGARDING PLANNING POLICY CONTEXT	YES	NO	TO BE DETERMINED	COMMENT
Is any Municipal Integrated Development Plan (IDP)/Spatial Development Framework (SDF) and/or any other Municipal policies/guidelines applicable? If yes, is the proposal in line with the aforementioned documentation/plans?			**X**	
Any applicable restrictive condition(s) prohibiting the proposal? If yes, is/are the condition(s) in favour of a third party(ies)? [List condition numbers and third party(ies)]			**X**	**Conveyance Attorney to confirm**

Any other Municipal by-law that may be relevant to application? (If yes, specify)			**X**	
Zoning Scheme Regulation considerations: Which zoning scheme regulations apply to this site? **Agriculture** What is the current zoning of the property? **Agricultural Zone I** What is the proposed zoning of the property? **Agricultural Zone I** Does the proposal fall within the provisions/parameters of the zoning scheme? **Yes** Are additional applications required to deviate from the zoning scheme? (if yes, specify) **No.**				

QUESTIONS REGARDING OTHER PLANNING CONSIDERATIONS	**YES**	**NO**	**TO BE DETERMINED**	**COMMENT**
Is the proposal in line with the Provincial Spatial Development Framework (PSDF) and/or any other Provincial bylaws/policies/guidelines/documents?			**X**	
Are any regional/district spatial plans relevant? If yes, is the proposal in line with the document/plans?			**X**	

SECTION C:

CONSENT / COMMENT REQUIRED FROM OTHER ORGANS OF STATE

OUESTIONS REGARDING CONSENT / COMMENT REQUIRED	**YES**	**NO**	**TO BE DETERMINED**	**OBTAIN APPROVAL / CONSENT / COMMENT FROM:**
Is/was the property(ies) utilised for agricultural purposes?	**X**			Western Cape Provincial Department of Agriculture
Will the proposal require approval in terms of Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970)?		**X**		National Department of Agriculture
Will the proposal trigger a listed activity in terms of National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA)?	**X**			Western Cape Provincial Department of

OUESTIONS REGARDING CONSENT / COMMENT REQUIRED	YES	NO	TO BE DETERMINED	OBTAIN APPROVAL / CONSENT / COMMENT FROM:
				Environmental Affairs & Development Planning (DEA&DP)
Will the proposal require authorisation in terms of Specific Environmental Management Act(s) (SEMA)? (National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003) (NEM:PAA) / National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) (NEM:BA) / National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) (NEM:AQA) / National Environmental Management: Integrated Coastal Management Act, 2008 (Act 24 of 2008) (NEM:ICM) / National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEM:WA) (strikethrough irrelevant)			**X**	National Department of Environmental Affairs (DEA) & DEA&DP
Will the proposal require authorisation in terms of the National Water Act, 1998 (Act 36 of 1998)?			**X**	National Department of Water & Sanitation (DWS)
Will the proposal trigger a listed activity in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?			**X**	South African Heritage Resources Agency (SAHRA) & Heritage Western Cape (HWC)
Will the proposal have an impact on any National or Provincial roads?	**X**			National Department of Transport / South Africa National Roads Agency Ltd. (SANRAL) & Western Cape Provincial Department of Transport and Public Works (DTPW)
Will the proposal trigger a listed activity in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993): Major Hazard Installations Regulations		**X**		National Department of Labour (DL)
Will the proposal affect any Eskom owned land and/or servitudes?		**X**		Eskom
Will the proposal affect any Telkom owned land and/or servitudes?		**X**		Telkom
Will the proposal affect any Transnet owned land and/or servitudes?		**X**		Transnet
Is the property subject to a land / restitution claims?		**X**		National Department of Rural Development & Land Reform
Will the proposal require comments from SANParks and/or CapeNature?		**X**		SANParks / CapeNature

OUESTIONS REGARDING CONSENT / COMMENT REQUIRED	YES	NO	TO BE DETERMINED	OBTAIN APPROVAL / CONSENT / COMMENT FROM:
Will the proposal require comments from DEFF?			X	Department of Environment, Forestry and Fishery
Is the property subject to any existing mineral rights?	X			National Department of Mineral Resources
Does the proposal lead to densification to such an extent that the number of schools, healthcare facilities, libraries, safety services, etc. In the area may be impacted on? (strikethrough irrelevant)		X		Western Cape Provincial Departments of Cultural Affairs & Sport (DCAS), Education, Social Development, Health and Community Safety

SECTION D:

SERVICE REQUIREMENTS

DOES THE PROPOSAL REQUIRE THE FOLLOWING ADDITIONAL INFRASTRUCTURE / SERVICES?	YES	NO	TO BE DETERMINED	OBTAIN COMMENT FROM: (list internal department)
Electricity supply:			X	Directorate: Electro-technical Services
Water supply:			X	Directorate: Civil Engineering Services
Sewerage and waste water:			X	Directorate: Civil Engineering Services
Stormwater:			X	Directorate: Civil Engineering Services
Road network:			X	Directorate: Civil Engineering Services
Telecommunication services:			X	
Other services required? Please specify.			X	
Development charges:				

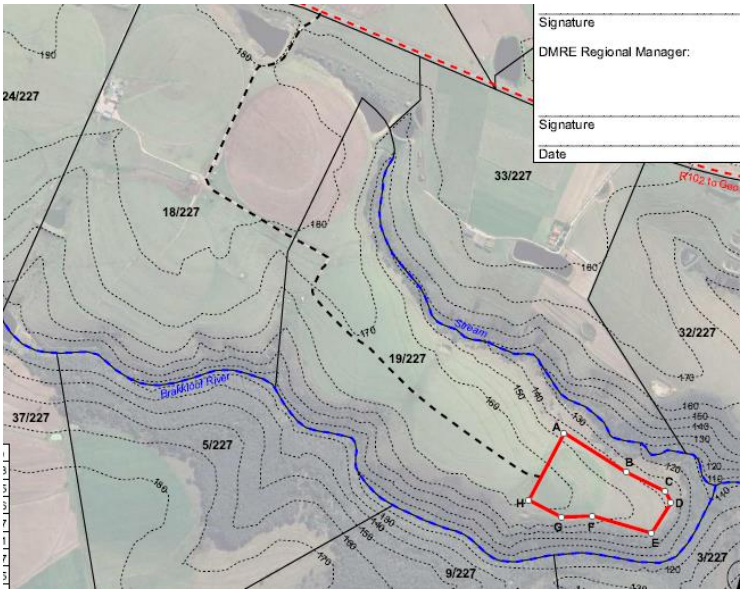
PART D: COPIES OF PLANS / DOCUMENTS TO BE SUBMITTED AS PART OF THE APPLICATION

COMPULSORY INFORMATION REQUIRED:						
Y	N	Power of Attorney / Owner's consent if applicant is not owner (if applicable)		Y	N	S.G. noting sheet extract / Erf diagram / General Plan

Y	N	Motivation report / letter		**Y**	N	Full copy of the Title Deed
Y	N	Locality Plan		**Y**	N	Site Layout Plan
Y	N	Proof of payment of fees		**Y**	N	Bondholder's consent
MINIMUM AND ADDITIONAL REQUIREMENTS:						
Y	N	Site Development Plan		**Y**	N	Conveyancer's Certificate
Y	N	Land Use Plan		Y	N	Proposed Zoning plan
Y	N	Phasing Plan		Y	N	Consolidation Plan
Y	N	Abutting owner's consent		Y	N	Landscaping / Tree Plan
Y	N	Proposed Subdivision Plan (including street names and numbers)		Y	N	Copy of original approval letter
Y	N	Services Report or indication of all municipal services / registered servitudes		Y	N	Home Owners' Association consent
Y	N	Copy of Environmental Impact Assessment (EIA) / Heritage Impact Assessment (HIA) / Traffic Impact Assessment (TIA) / Traffic Impact Statement (TIS) / Major Hazard Impact Assessment (MHIA) / Environmental Authorisation (EA) / Record of Decision (ROD) (strikethrough irrelevant)		Y	N	1 : 50 / 1:100 Flood line determination (plan / report)
Y	N	Other (specify)		Y	N	Required number of documentation copies

PART E: DISCUSSION

The Pre-Application Meetings of 24 October 2024 refers. The plan presented is illustrated below:
The applicant also provided the Mining permit and Environmental Authorisation.



- Access to the site to be indicated and confirmed.
- Need to confirm and indicate if any structures will be erected (to show location, extent, and internal layout).
- Need to address compliance with MSDF 2023, SPLUMA, Zoning Scheme etc.

- Site Layout Plan must contain topographical features and landscape measures in terms pf the proposed mining activity.
- All environmental elements and buffers must be indicated on the Site Layout Plan. To also consider all watercourses and wetlands.
- ROD/Environmental authorisations as well as EMP to be submitted with the application.
- Notification will have to be send to, *inter alia*, Western Cape Agriculture, DEA&DP, DRE, ACSA during PPP.

CES

- The developer may need to require comment from ACSA
- Access: DRE, as road authority, to provided comments
- Water & Sanitation: Currently the Municipality are not available within this area, and the developer will be required to supply the required services. Should municipal services be extended to this rea, the developer will be required, at his cost, to connect to the applicable services, and in addition be required to pay DC's, applicable on the time of connect.
- Stormwater: Developer to adhere to the stormwater by-law.
- Environmental: Developer to obtain the necessary licence and/or approval.

PART F: SUMMARY / WAY FORWARD

See comments above.

OFFICIAL: _Robert Janse van Rensburg (Town Planner)

PRE-APPLICANT: **Alexander Havenga**_____ (FULL NAME)

SIGNED: _____

SIGNED: _____

DATE: ____24/10/2024 _____

DATE: **04/10/2024**_____

OFFICIAL: **Ilané Huyser**

(Senior Town Planner)

SIGNED:  _____

DATE: __24.10.2024_____

**Please note that the above comments are subject to the documents and information available to us at the time of the pre-application meeting and we reserve our rights to elaborate on this matter further and/or request more information/documents should it deemed necessary.*