

Portion 4 of the Farm Duiker Kranse No. 45, Beaufort West RD

Application For:

- Consent Use For A Quarry, in Terms of Section 15 (2)(0) By-Law on Municipal Land Use Planning



Report Number: 1980E/02

June 2026

*Prepared By :
Rowan van Gend*

 **URBAN DYNAMICS**
TOWN & REGIONAL PLANNERS
117 Cape Road, Mill Park, Gqeberha, 6001
Tel: 041 374 3980
Email: admin@udec.co.za

Report Title :	Portion 4 of the Farm Duiker Kranse No. 45, Beaufort West: Application for: Consent Use For A Quarry, In Terms Of Section 15 (2) (0) By-Law On Municipal Land Use Planning
Report Number :	1980E/02
Report Date :	June 2026
Report Status :	Final
Prepared By :	Rowan van Gend PR.PLN A/857/1995
Contact Number :	041 374 3980 083 321 2299
Email Address :	admin@udec.co.za rowan@udec.co.za

Prepared By :	Rowan van Gend PR.PLN A/857/1995
	
Contact Number :	041 374 3980 083 321 2299
Email Address :	admin@udec.co.za rowan@udec.co.za

Note : The data and content contained in this report, annexures and maps are based on information as received and interpreted by Urban Dynamics Eastern Cape from secondary sources, including the Client, Land Owner and Specialist Studies. Although Urban Dynamics Eastern Cape attempts, at all times, to present accurate and reliable information, we make no warranty of any kind, expressed or implied, to the accuracy and reliability of information sourced and obtained from secondary sources.

The data and contents of this report remains the sole propriety and intellectual property of Urban Dynamics Eastern Cape and can only be used for the purposes of the project and evaluation of the application as determined by the relevant legislation.

Content

Chapter 1 : Background	4
1. Background.....	4
2. The Applicant.....	5
3. The Application	5
4. The Project Location	6
5. The Ownership and Title Deed	8
6. Property Description	8
7. Land Use.....	8
Chapter 2 : The Development Proposal	10
2.1 Description of Activities to be Undertaken	10
2.2 Economic advantages of the proposed quarry	14
2.3 Mitigation of dust on site and haulage roads	14
2.4 Environmental, Operational challenges and Mitigation	14
Chapter 3 : Policy & Planning Review	16
3.1 Spatial Planning and Land Use Management Act, Act 16 of 2013 (SPLUMA)	16
3.2 Western Cape Land Use Planning Act (2015)(LUPA).....	18
3.3 Karoo Regional Spatial Development Framework (SDF) 2023	19
3.4 Western Cape Spatial Development Framework (PSDF) 2014	21
3.5 Western Cape Land Use Planning Guidelines for Rural Areas (2019)	22
3.6 Central Karoo District Municipality Spatial Development Framework (SDF) 2019	23
3.7 Beaufort West Local Municipality Spatial Development Framework (MSDF) 2014	24
3.8 Other Legislation and Policies	26
3.9 Compliance with the MSDF.....	27
Chapter 4 : Desirability of the proposed Land Development	28
4.1 The Need for Development.....	28
4.2 Environmental Assessment and Impact (This section should be read together with the Basic Assessment Report).....	29
4.2.1 Topography.....	29
4.2.2 Climate	30
4.2.3 Geology & Soils	30
4.2.4 Vegetation Types: Flora & Fauna.....	30
4.2.5 Compliance with the NEMA Authorisation for the Environmental Authorisation	31
4.3 Access & Movement	32
4.4 Surrounding Land Uses	32
4.5 Public Interest & Participation	33
Chapter 5 : Conclusion	34

Maps

1. Existing Zonings
2. Regional Locality
3. Aerial View
4. Terrain Characteristics
5. Existing Land Use
6. Site Plan
7. Surrounding Property Owners

Annexures

1. Pre-application Consultation Comment, Minutes, Attendance Register, T1 Pre-application Consultation form
2. Application Form T2
3. Power of Attorney
4. Trust Resolution
5. Trust Letter of Authority
6. Deeds Office Enquiry
7. Title Deed
8. Conveyancer Certificate
9. Bond Holders Consent
10. SG Diagram
11. Environmental Basic Assessment Report
12. Proof of payment of application fees

1. Background

Mining is of great importance to the rural economy of the Western Cape and the value and contribution of sand and gravel mining in the region should not be underestimated.

An opencast quarry is a type of surface mine utilized to extract raw earth materials—such as limestone, sandstone, granite, sand, and gravel—that are used for building and infrastructure. It is the most common and economical extraction method worldwide for building materials that are located relatively close to the surface of the earth.

Primary materials extracted from quarries include the following:

- Aggregates: - Crushed stone, sand, and gravel used for making concrete, asphalt, and road bases.
- Dimension Stone: - Natural blocks of marble, granite, or slate used for building facades, paving, and monuments.
- Cement Raw Material - Limestone, shale, and clay used in cement manufacturing.

In this instance the quarry is intended for the sourcing and supply of aggregates to supply construction material for the development of renewable facilities and supporting infrastructure



All construction and building projects are highly dependent on the sustainable supply of such material. In order to grow and support the construction sector, it is crucial that the sustainable and viable supplies are readily available.

The interest in the development of renewable energy facilities in the Beaufort West district is rapidly growing and the provision of construction material, to support the industry, should be provided as cost competitive as possible. The role of the Municipality to support the development should not be underestimated.

The availability and cost of supplying the mined resource to construction sites has a significant effect on the viability of the construction project and more so the construction industry. Locality of the mine and

haulage distance to transport the raw material to the construction site are key factors to ensure the sustainability of the project.

2. The Applicant

Urban Dynamics EC (UDEEC) has been appointed by the owners of Portion 4 of the Farm Duiker Kranse No. 45, located in the Beaufort West Municipality, Western Cape, to prepare and submit an application for a Consent Use to permit a quarry on a portion of the Agriculture Zone 1 property. The duration of the consent use is directly linked to the period granted for the mining permit. **Refer to Annexure 3 and 4.**

Bomlingo Projects intends to establish a quarry on the Farm and mine material required for the development of renewable energy facilities and associated infrastructure in the Beaufort West Municipal area.

The contractor, on behalf of the land owner, is in the process of obtaining a mining permit and environmental authorisation from the Department of Mineral Resources for the intended mining activity on an approximate 5 ha portion of the farm.

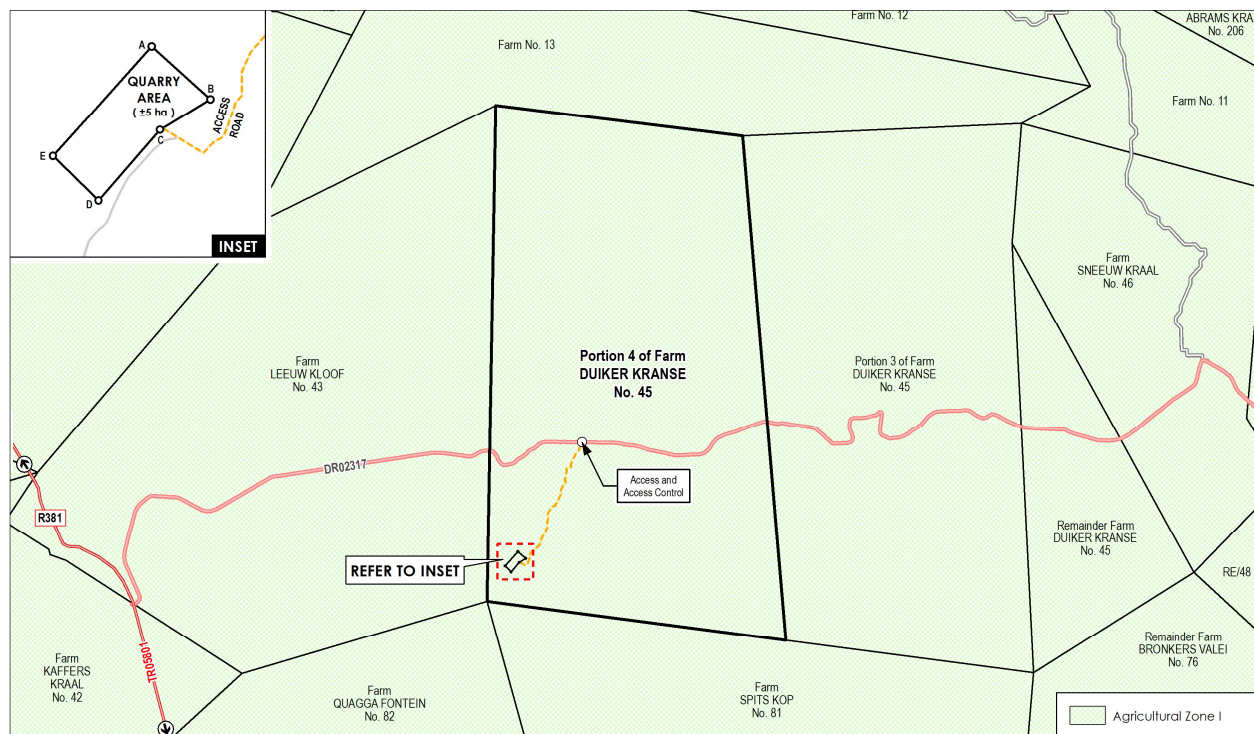
3. The Application

The current zoning of the Farm is Agriculture Zone, however a consent use can be granted for a quarry by the Beaufort West Municipality.

Application is made for:

- **A Consent Use for a quarry on a minor portion of 5 ha:**

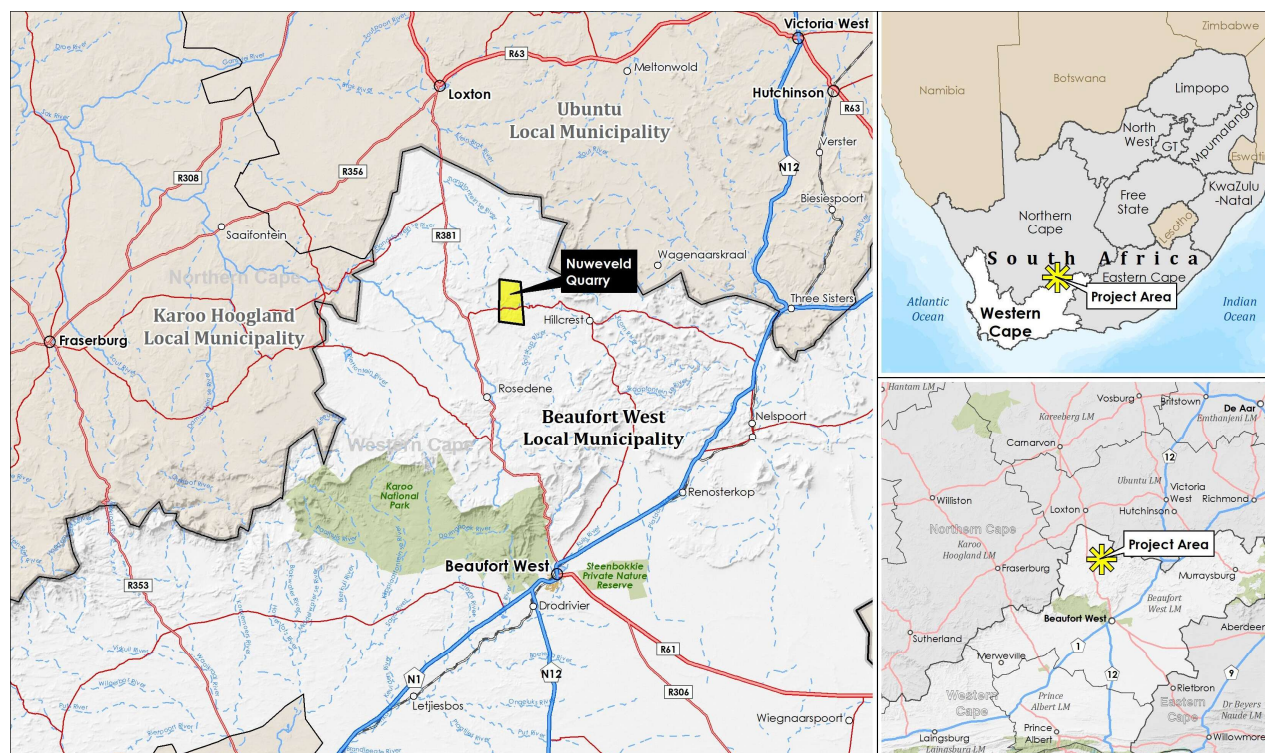
PROPERTY DESCRIPTION:	Portion 4 of the Farm Duiker Kranse No. 45
SITE AREA:	5 ha
CURRENT ZONING:	Agriculture
CURRENT USE OF APPLICATION SITE:	Vacant veld for grazing
USE OF LAND THE PAST 10 YEARS:	The subject area has not been actively farmed, irrigated or planted during the last 10 years
EXPECTED DURATION OF NEW LAND USE:	A period not exceeding 5 years



Map 1: Existing Zonings

4. The Project Location

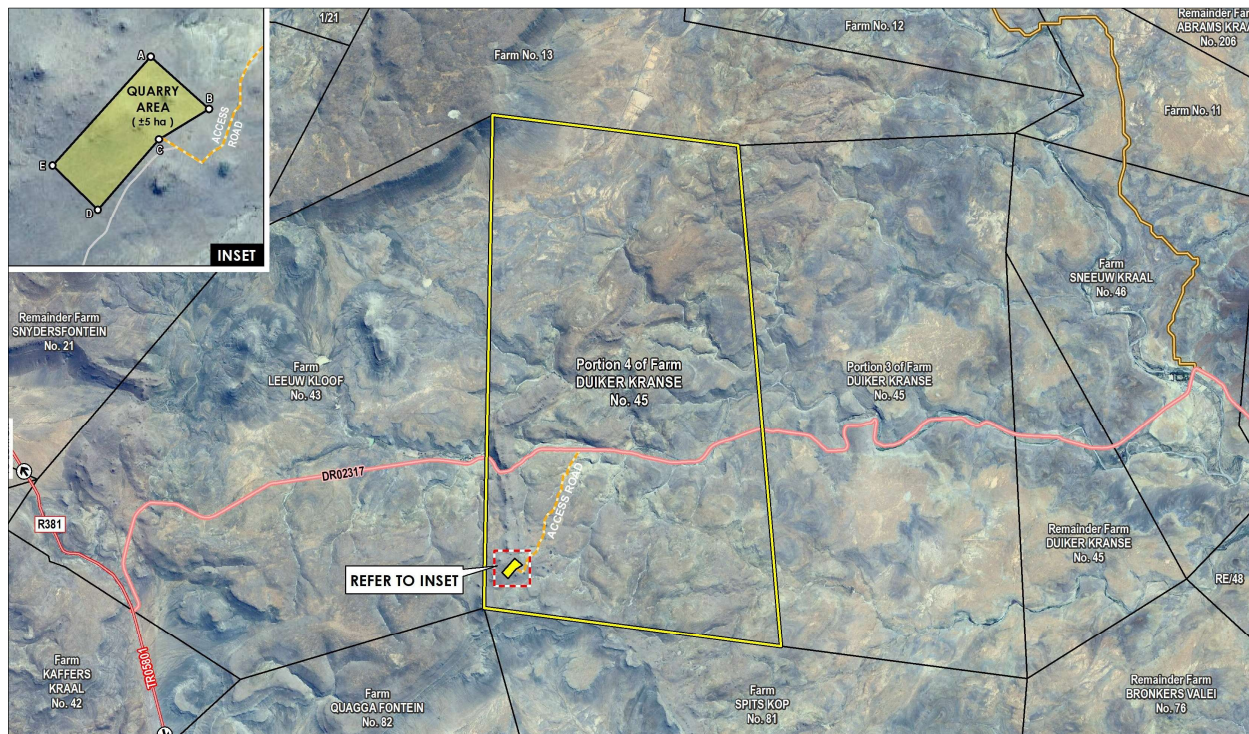
The quarry is proposed on Portion 4 of the Farm Duiker Kranse No. 45, located about 50km north of Beaufort West and about 90km southeast of Loxton (Northern Cape Province). From Beaufort West, the site can be accessed by turning left from the N12 into a district dirt road and travelling about 50km Northeast of Beaufort West, driving over the De Jagers Mountain Pass.



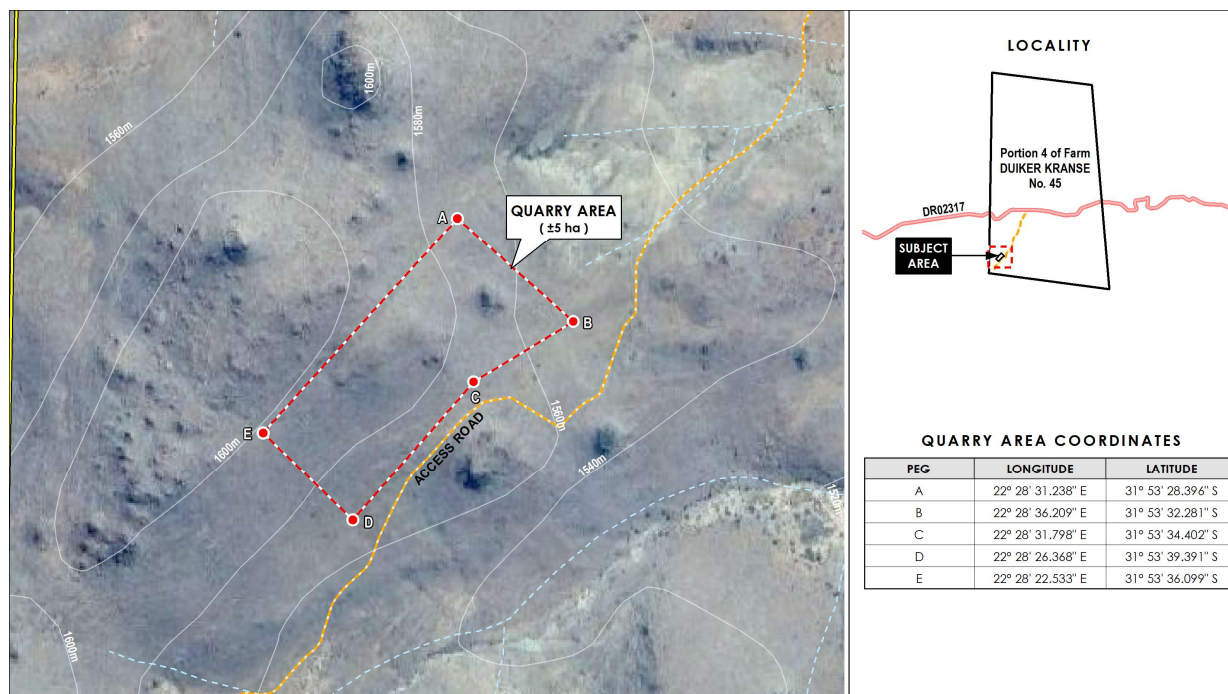
Map 2: Regional Locality

The extent of the expansion of the existing quarry will be 5 ha. The GPS position of the centre point of the site are:

QUARRY AREA COORDINATES		
PEG	LONGITUDE	LATITUDE
A	22° 28' 31.238" E	31° 53' 28.396" S
B	22° 28' 36.209" E	31° 53' 32.281" S
C	22° 28' 31.798" E	31° 53' 34.402" S
D	22° 28' 26.368" E	31° 53' 39.391" S
E	22° 28' 22.533" E	31° 53' 36.099" S



Map 3: Aerial View



Map 4: Terrain Characteristics

5. The Ownership and Title Deed

The Farm Duiker Kranse No. 45 is owned by the Gansfontein Trust and registered by the Title Deed No T43759/2002. No restrictive title deed conditions have been identified which will prevent the intended quarry from being established.

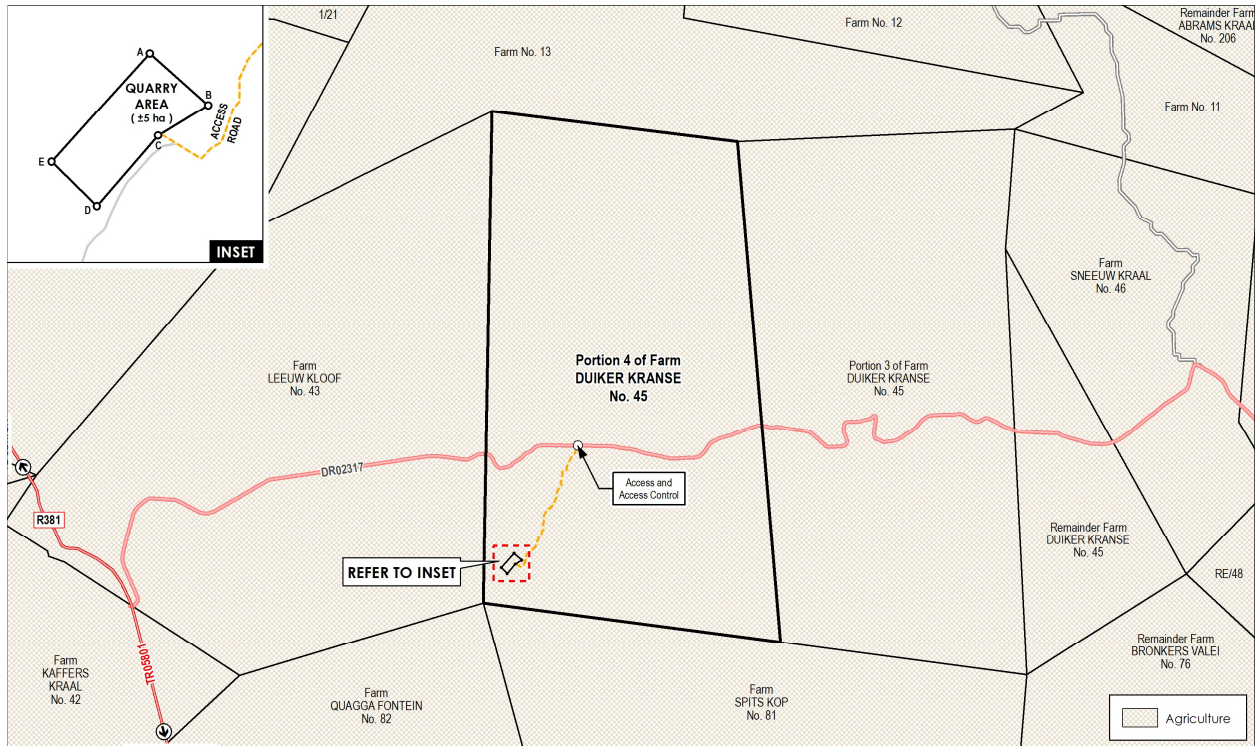
6. Property Description

The following depicts the official ownership of the farm.

PROPERTY DESCRIPTION:	Portion 4 of the Farm Duiker Kranse No. 45
OWNERSHIP:	Gansfontein Trust
TITLE DEED:	T43759/2002
BOND:	Yes, ABSA Bank
RESTRICTIVE TITLE DEED CONDITIONS:	None

7. Land Use

The overall land use of Portion 4 of the Farm Duiker Kranse No. 45, with an extent of 3 890, 9665Ha, is agriculture, livestock farming to be precise. However, the demarcated quarry of approximately 5 ha is excluded from agricultural activities by means of fencing. According to the landowner, this portion of the farm never had palatable grazing field for the livestock, hence it was suitable for mining.



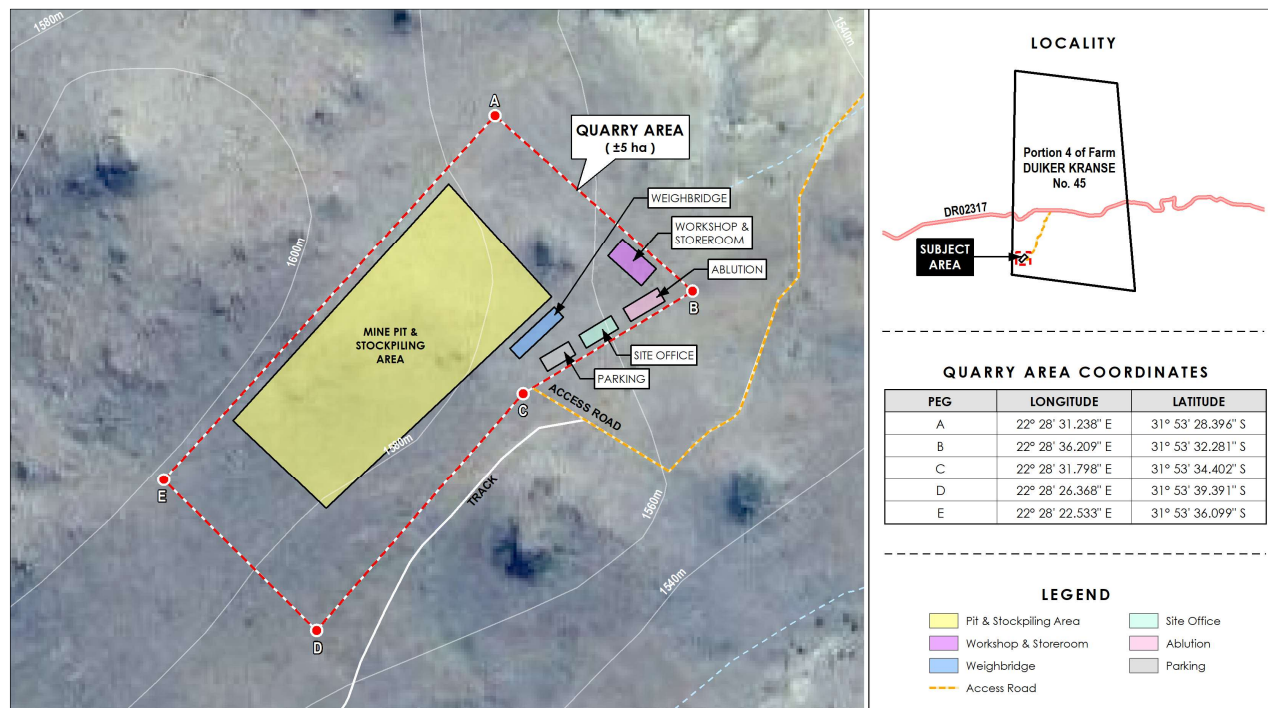
Map 5: Existing Land Use

2.1 Description of Activities to be Undertaken

Bomlingo Projects (Pty) Ltd proposes to undertake mining operation that will take place on a privately owned property, on Portion 4 of Farm Duiker Kranse 45, Division of Beaufort West in the Beaufort West Municipality, Western Cape Province. The proposed mining will take place over a two-year period with an option to effect annual renewal for three consecutive years.

It is of importance to mention that the proposed mining activity will not operate as a commercial quarry but solely meant to supply construction material to the renewable energy facilities in the district.

The site area of approximately 5 ha will include the fenced to secure the mine and stockpile area weighbridge, workshop, storeroom, ablution facility, site office and parking areas. The site will be accessed by internal private farm roads.



Map 6: Site Plan

Uses to be provided on site includes the following:

- Site Office;
- Workshop, Storeroom, parking areas;
- Ablution and employees lockers
- Weighbridge.

A small quarry site requires specific facilities to function safely, efficiently, and in compliance with mining and environmental authorisations and labour regulations. Essential operational and support infrastructure includes the quarry pit, processing equipment, site security, and mandatory worker amenities.

Operational facilities, environmental and safety infrastructure and worker amenities and administration can include the following;

- Extraction area: The open pit where raw rock, gravel, or sand is mined, often using benching methods.
- Processing plant: Crushers (jaw or cone) and screening equipment to size the raw aggregate.
- Stockpile bays: Separated, designated areas for sorting and storing different grades of finished material.
- Haulage roads: Well-maintained, graded internal roads designed to accommodate heavy machinery and prevent traffic hazards.
- Overburden dump: An isolated, stabilized location for storing topsoil and waste rock.
- Water management: Settlement ponds or tanks to wash materials, control dust, and capture runoff.
- Perimeter fencing: Security fencing, lockable gates, and highly visible warning signs to prevent unauthorized public access.
- Weighbridge: A drive-on scale at the entrance to accurately measure outbound truckloads for billing and transport limits.
- Site office: A temporary or prefabricated unit for daily administration, safety logs, and compliance records.
- Sanitation: Portable or plumbed toilets and adequate hand-washing stations.
- Changing facilities: Lockers and dry areas for workers to store personal belongings and change out of dirty gear.
- First aid: A clearly marked, fully stocked first aid station.
- Break room: A clean shelter, such as an insulated mobile cabin, for employees to eat meals and rest.



The actual area to be mined will be approximately 5.0 ha.

Opencast Quarrying comprise of the following activities and processes.

- **Site clearance** followed by overburden removal:
This process comprises of stripping away the topsoil and rock layer (overburden) that sits on top of the valuable deposit. The removal of vegetation and topsoil will be undertaken in accordance with the mine plan and environmental authorisation.



- **Drilling and blasting**

Creating blast holes to fracture and loosen the hard rock face using explosives. A licensed suitable blasting service provider will be employed to ensure safe and risk free blasting.



- **Excavation:**

Once the hard rock is loosened and excavated, loading the loosened rock or sand into heavy-duty haul trucks using hydraulic excavators or front-end loaders will be applied in terms of the mine plan. All machinery will be secured and operated within the boundaries of the fenced site.



- **Processing**

The mined rock is transported through plants to sort, crush, and screen it into specific marketable sizes. The mined material is crushed through a jaw crusher and screened on a processing plant into the required product sizes required for the construction of renewable energy facilities and supporting infrastructure.



- **Stockpiling**

Ready material will be stockpiled according to grades for dispatch to market. Stockpiles of ready material will be kept at reasonable height and watered to minimise dust emission. For better management of stockpiles, hauled material will have to be regularly dispatched to market. The mined material will be stockpiled at a designated area just adjacent to the pit.

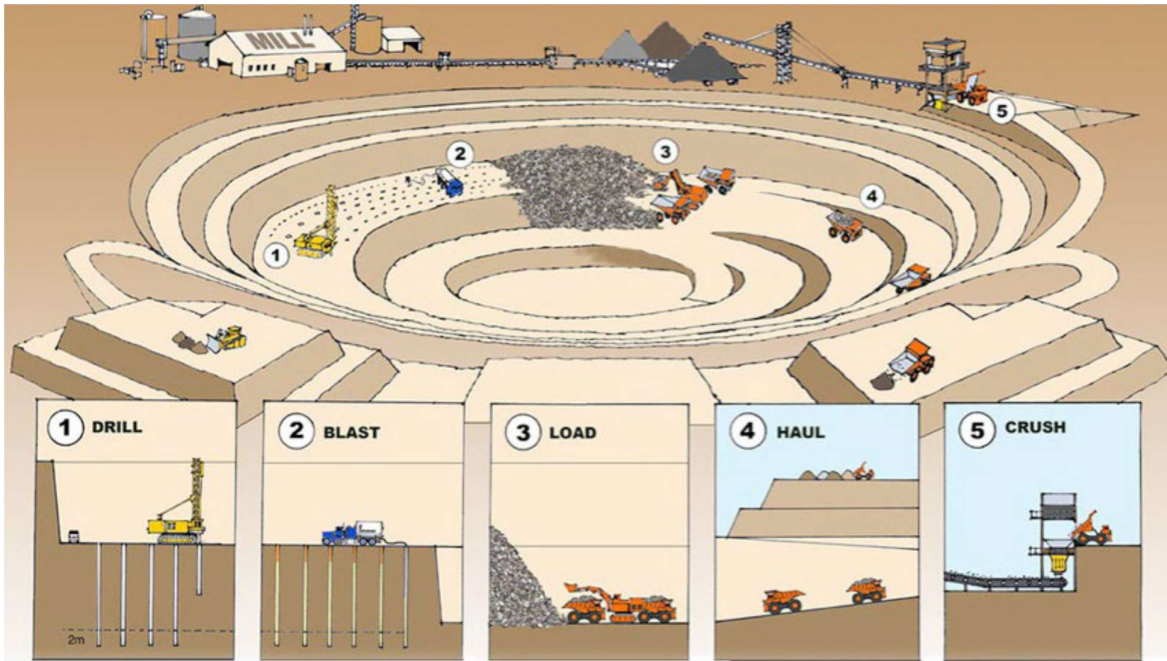
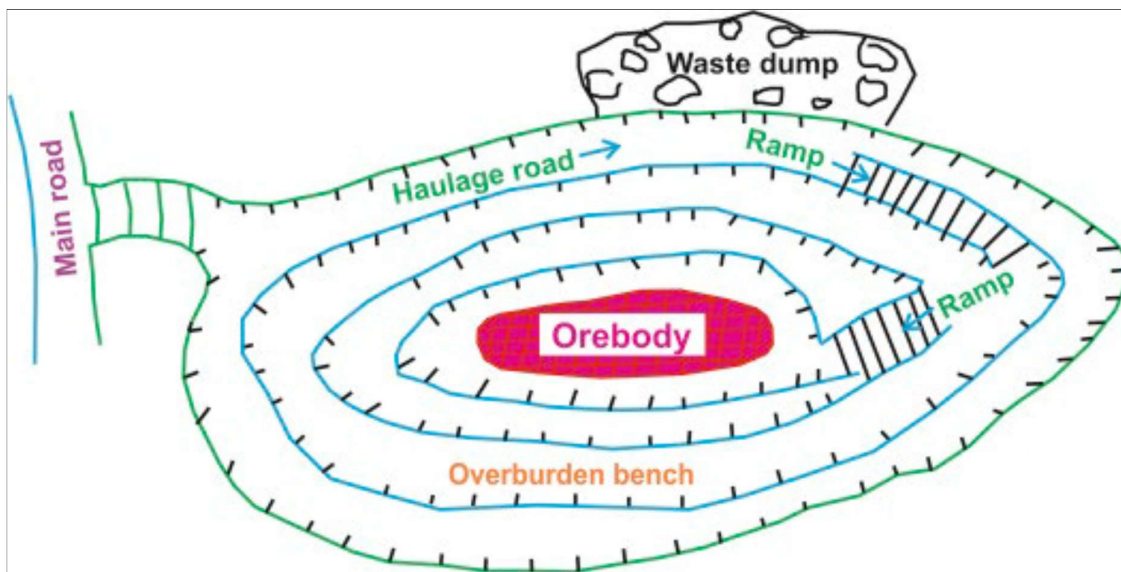


Illustration of Open cast mining methodology to be adopted



Typical mine layout of an open cast mining methodology

The proposed mine area is within an active livestock farm currently in use by the lease to farm sheep. There are no wild animals identified onsite, however, as per the findings of the terrestrial assessment presence of wild animals may not be ruled out, given its area extent of 392.6857H. The mine area will be fenced to restrict access thus there will be no interference with the current livestock farming or wild animals. Vegetation disturbance will be limited to the 5 Ha demarcated mining area and along the access road, leaving the rest of the faunal habitat intact. The integrity of the natural ecosystem and biodiversity will not be lost.

2.2 Economic advantages of the proposed quarry

The value of the developing the selected site include:

- Open access which will allow the use of large, bulky earthmoving machinery without space restrictions.
- Cost-Effective operation which requires lower initial capital and operating costs compared to the acquisition of aggregates from distant source increasing the haulage cost in supplying the construction material.
- Full resource utilization which provide total visibility of the resource, preventing valuable materials from being left behind.

2.3 Mitigation of dust on site and haulage roads

The management of dust, caused by construction and mining activity, is regulated by the National Dust Control Regulations promulgated in the Government Notice No. 827 of 1 November 2013.

The Basic Assessment Report for the proposed Mining of Aggregate over Portion 4 of the Farm Duiker Kranse No. 45, acknowledges this statutory compliance and provides the following mitigation measures to adequately manage and control air pollution.

- A phased mining approval is to be adopted to manage the clearance and rehabilitation of vegetation.
- The wetting of roads by a water tanker and sprinkler system at sensitive areas such as the farm house, will be applied.
- Work will be ceased during extremely windy conditions.
- Water spraying on site mining areas.
- Installation of fallout dust buckets and minoring quarterly.
- Mining activity will be undertaken and prescribed terms as approved by the mining authorisation.
- Dust fallout will be monitored by an independent consultant in compliance with the Mine Health and Safety Act.

2.4 Environmental, Operational challenges and Mitigation

Careful consideration will be made to:

- Habitat disruption can alter landscapes, destroy biodiversity, and can lead to soil erosion if not rehabilitated.
- Pollution such as noise, heavy machinery emissions, dust and airborne particulate matter is caused which should be mitigated and managed to minimise the impact on the area.
- Water impacts carry a risk of polluting local water bodies through runoff and can alter underground water tables.

Mitigation and management of the utilised site is required in terms of the authorisations granted. Notwithstanding the challenges, the environmental authorisation granted will impose stringent conditions and measures on the permit holder to rehabilitate the disturbed area in a sustainable manner for ongoing agriculture purposes. This involves rehabilitating the exhausted quarry into dams, ecological reserves and other farming related uses.



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

The recent introduction of SPLUMA in 2016 requires for all land development applications to comply and be motivated in accordance with this act. This application complies with the principles of SPLUMA, as well as other sections which will be elaborated on further below.

Section 7

The following principles apply to spatial planning, land development and land use management:

- (a) The Principle of spatial justice, whereby –
- (i) Past spatial and other development imbalances must be redressed through improved access to and use of land;**
 - (ii) 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 characterised by widespread poverty and deprivation;**
 - (iii) Spatial planning mechanisms, including land use schemes, must incorporate provisions that enable redress in access to land by disadvantages communities and persons;**
 - (iv) 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;**
 - (v) Land development procedures must include provisions that accommodate access to secure tenure and the incremental upgrading of informal areas; and**
 - (vi) A Municipal Planning Tribunal considering an application before it may not be impeded or restricted in the exercise of its discretion solely on the ground that the value of land of property is affected by the outcome of the application;**

This application will in all instances adhere to the above principle. Not only is the location of the application site of importance but also the people that the upgrading will benefit. The approval of this application will indicate the support of the Beaufort West Local Municipality towards planning practices that support the need to be more flexible and inclusionary.

- (b) The principle of spatial sustainability, whereby spatial planning and land use management systems must-
- (i) Promote land development that is within the fiscal, institutional and administrative means of the Republic;**
 - (ii) Ensure that special consideration is given to the protection of prime and unique agricultural land;**
 - (iii) Uphold consistency of land use measures in accordance with environmental management instruments;**
 - (iv) Promote and stimulate the effective and equitable functioning of land markets;**
 - (v) Consider all current and future costs to all parties for the provision of infrastructure and social services in land developments;**
 - (vi) Promote land development in locations that are sustainable and limit urban sprawl;**

And

(vii) Result in communities that are viable;

This application complies with the above principle. The site is not viable agricultural land in any form and the quarry will support the development of sustainable energy generating windfarms in the area, the application does not result in urban sprawl and will contribute to a viable and a well-functioning community within the municipality's area of authority.

- (c) The principle of efficiency, whereby –
- (i) Land development optimises the use of existing resources and infrastructure;**
 - (ii) Decision-making procedures are designed to minimise negative financial, social, economic or environmental impacts; and**
 - (iii) Development application procedures are efficient and streamlined and timeframes are adhered to by all parties;**

This application complies with the above principle, specifically the optimal use of existing services infrastructure. The application will not have any negative impacts as listed under (c) (ii) above. The stakeholders wish to finalize the application timeously in order to formalize this driver of economic development.

- (d) The principle of spatial resilience, whereby flexibility in spatial plans, policies and land use management systems are accommodated to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks; and The site does not lie within any environmentally sensitive areas and support for the application would allow for the establishment of an economic activity within the Beaufort West area of authority which would support local communities.

The site does not lie within any environmentally sensitive areas and support for the application would allow for the establishment of an economic activity within the Beaufort West area of authority which would support local communities.

- (e) The principle of good administration, whereby –
- (i) 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 embodied in this Act;**
 - (ii) All government departments must provide their sector inputs and comply with any prescribed requirements during the preparation or amendment of spatial development frameworks;**
 - (iii) The requirements of any law relating to land development frameworks;**
 - (iv) The preparation and amendment of spatial plans, policies, land use schemes as well as procedures for development applications, include transparent processes of public participation that afford all parties the opportunity to provide inputs on matters affecting them; and**
 - (v) Policies, legislation and procedures must be clearly set in order to inform and empower members of the public."**

This application complies with the above principle, although the main intent of this principle is to align administration and decisions taken by spheres of government and local authorities. The development conforms to the applicable land use provided for in the Municipal Spatial Development Framework. All the required internal departments will have the opportunity to provide comments on the application.

3.2 Western Cape Land Use Planning Act (2015)(LUPA)

Chapter 5 of this Act highlights the need to apply land use planning principles to any proposed development. In this regard section 59 of the Act is relevant and is considered below:

59. (1) Land use planning is guided by the following principles of spatial justice:

- (a) past spatial and other development imbalances should be redressed through improved access to, and utilisation of, land;
- (b) spatial development frameworks and policy at all spheres of government should address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements and areas characterised by widespread poverty and deprivation;
- (c) spatial planning mechanisms, including zoning schemes, should incorporate provisions that enable redress in access to land by disadvantaged communities and persons;
- (d) land use management systems should include all areas of a municipality and specifically include provisions that are flexible and appropriate for the management of disadvantaged areas and informal settlements;
- (e) land development procedures must include provisions that accommodate access to, and facilitation of, security of tenure and the incremental upgrading of informal areas;
- (f) a competent authority contemplated in this Act or other relevant authority considering an application before it, may not be impeded or restricted in the exercise of its discretion solely on the ground that the value of land or property will be affected by the outcome of the application; and
- (g) the right of owners to develop land in accordance with current use rights should be recognised.

(2) Land use planning is guided by the following principles of spatial sustainability:

- (a) land use planning should—
 - (i) ***promote land development that is spatially compact, resource-frugal and within the fiscal, institutional and administrative means of the relevant competent authority in terms of this Act or other relevant authority;***
 - (ii) ***ensure that special consideration is given to the protection of prime, unique and high potential agricultural land;***
 - (iii) ***uphold consistency of land use measures in accordance with environmental management instruments;***
 - (iv) ***promote and stimulate the effective and equitable functioning of land markets;***
 - (v) ***consider all current and future costs to all parties for the provision of infrastructure and social services in land developments;***
 - (vi) ***promote land development in locations that are sustainable and limit urban sprawl;***
 - (vii) ***result in communities that are viable; and***
 - (viii) ***strive to ensure that the basic needs of all citizens are met in an affordable way;***
- (b) the sustained protection of the environment should be ensured by having regard to the following:
 - (i) ***natural habitat, ecological corridors and areas with high biodiversity importance;***
 - (ii) ***the provincial heritage and tourism resources;***
 - (iii) ***areas unsuitable for development, including flood plains, steep slopes, wetlands and areas with a high water table and landscapes and natural features of cultural significance; and***
 - (iv) ***the economic potential of the relevant area or region;***
- (c) climate change adaptation and climate change mitigation strategies should be developed and considered in land use planning;
- (d) the provision and conservation of, and the management of the demand for, energy should be considered in land use planning;

- (e) the safe utilisation of land should be ensured by taking into consideration factors such as sea-level rise, storm surges, flooding, fire hazards and geological formations;
- (f) the illegal occupation of land should be discouraged with due recognition of informal land development practices; and
- (g) development should be principle-driven and should prioritise long-term social, economic and environmental benefits over short-term benefits.

(3) Land use planning is guided by the following principles of efficiency:

- (a) land development should optimise the use of existing resources, infrastructure, agriculture, land, minerals and facilities;
- (b) integrated cities and towns should be developed, whereby—
 - (i) the social, economic, institutional and physical aspects of land development is integrated;**
 - (ii) land development in rural and urban areas in support of each other is promoted;**
 - (iii) the availability of residential and employment opportunities in close proximity to, or integrated with, each other is promoted;**
 - (iv) a diverse combination of land uses is promoted;**
 - (v) the phenomenon of urban sprawl in urban areas is discouraged and the development of more compact towns and cities with denser habitation is promoted;**
 - (vi) historically distorted spatial patterns of settlement are corrected; and**
 - (vii) the quality and functionality of the public spatial environment is promoted;** and
- (c) policy, administrative practice and legislation should promote speedy land development.

Having considered the above principles in detail the applicant is confident that the proposed expansion of the quarry and associated re-zoning application complies in full with the relevant sections of the Act.

3.3 Karoo Regional Spatial Development Framework (SDF) 2023

The Karoo Regional Spatial Development Framework is an instrument to align the spatial planning, government spending, government operational decisions and direct investment to support integrated regional development. The focus of the framework is spatial issues of regional interest or regional significance and provides the context for more detailed local scale planning.

The Karoo Regional SDF identified various regional drivers and shapers, including regional development pillars.

Renewable energy is identified as a priority regional development driver/shaper with a relative strength in sustaining or strengthening the base of 9 out of 10. This is significant in support of the proposed renewable energy facilities in the district.

REGIONAL DEVELOPMENT PILLARS



Climate change mitigation and economic growth further confirmed in the spatial vision.

The Karoo Regional, where innovation based on unique ecosystem, natural assets, cultural heritage and traditional local knowledge is used to build a sustainable future for local communities that will stand as a global testament to human ingenuity, adaptability and resilience in arid regions.

And spatial objectives:

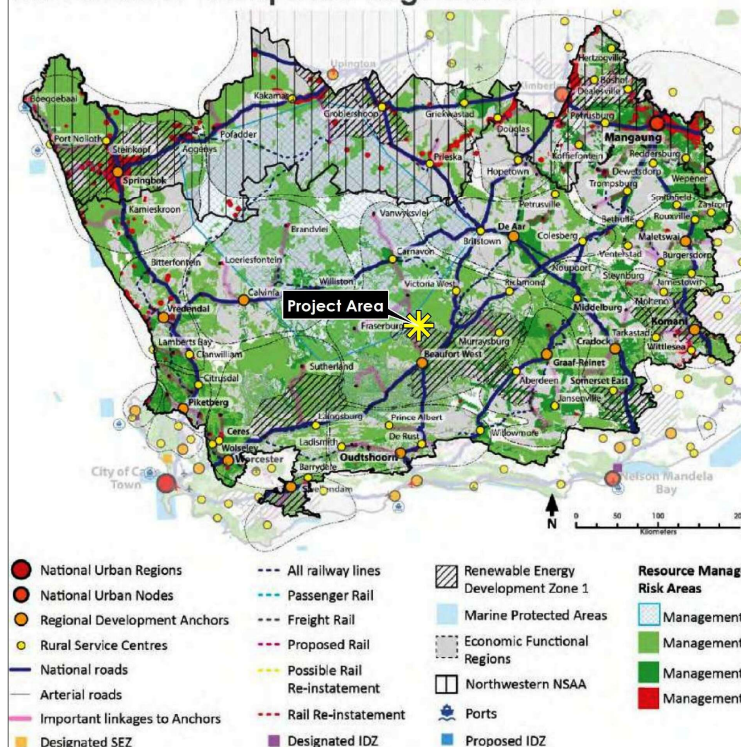
- Support the Karoo Vision and Identity
- Provide Regional Transformation Guidance
- Prioritise Regional Heritage and Conservation
- Enable Regional Growth, Innovation and Change
- Support Regional Collaborative Action

The SDF further notes that:

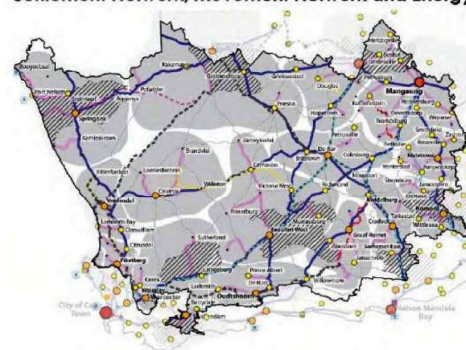
The large-scale economic infrastructure base forms the macroeconomic landscape of the Region and delivers economic growth and job opportunities at a regional scale while contributing to the national and global economy in a number of areas. The large-scale regional economic activities are, amongst others:

- Solar and wind-energy generation
- Other business and technical services in support of large scale activities, e.g. manufacturing, maintenance and repair facilities and services for solar and wind energy generators and related infrastructure, personal, legal and financial services, trade and retail, etc.

Karoo RSDF: Composite Regional SDF



Settlement Network, Movement Network and Energy



Resource Management and Risk Areas



Extract from Karoo RSDF

3.4 Western Cape Spatial Development Framework (PSDF) 2014

The PSDF sets out the basis for addressing the Western Cape's spatial agenda, it is a framework plan which allows functional regions or municipalities to formulate coherent spatial policies and integrated development plans, and which gives greater certainty over future development opportunities.

The Provincial Spatial Development Framework (PSDF) takes forward the NDP's spatial agenda as well as give effect to the Provincial Strategic Objectives (SPOs), which include creating economic opportunities, focusing on education, promoting accessibility, safety, inclusiveness and resource efficiency, creating wellness, liveability, inclusiveness and ensuring development and governance.

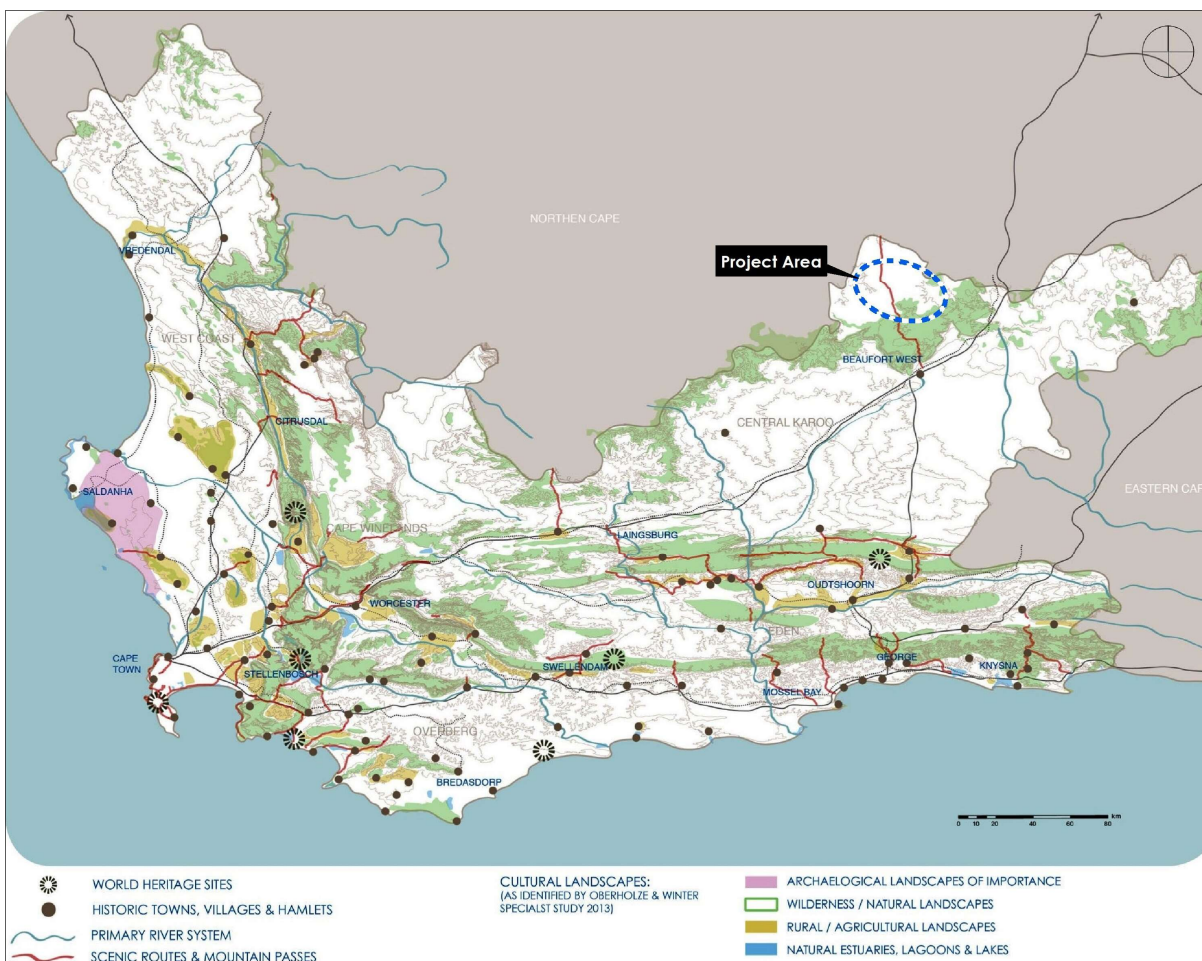
In terms of the PSDF, the Western Cape Government is committed to developing 'green' economy and their goal is for the province to be the lowest carbon province in the country and the leading green economic hub of the African continent. Generating energy from renewable sources (solar, wind power, biomass) is recognised in the PSDF as one of the efforts to ensure environmental sustainability. It is further acknowledged that the province has the best wind and wave energy in the country, as well as a good solar and bio-energy potential.

The following provincial spatial policies have been identified as applicable to this proposed development:

- **Spatial Policy R4: Energy** — Independent Power Producers and sustainable energy producers (wind, solar, biomass and waste conversion initiatives) are to be supported in suitable rural locations.
- **Spatial Policy R4: Climate Change Mitigation** — Renewable energy generation should be supported at scale since it significantly mitigates climate change.
- **Spatial Policy RS: Safeguard cultural and scenic assets** — The PSDF identifies priority focus areas proposed for conservation or protection include landscape under pressure of large-scale infrastructural developments such as wind farms, solar energy facilities, transmission lines and shale gas development in the Central Karoo. The Karoo National Park north of Beaufort West is a protected landscape, and the mountain passes and 'poorts' are of scenic and heritage significance. The PSDF specifically highlights the importance of amongst others the Molteno pass (R381) in the Nuweveld mountain range.

These cultural and scenic assets are illustrated in the PSDF (refer to the figure below). According to this illustration the following should be noted in terms of the development proposals:

- The R381 is indicated as a scenic route, and this should be taken into consideration in the visual impact assessment;
- Other than the scenic route, the EIA Application Area itself does not fall into an area identified as a sensitive wilderness area, natural landscape, rural or agricultural landscape or important archaeological landscape:



3.5 Western Cape Land Use Planning Guidelines for Rural Areas (2019)

The PSDF (2014) called for the review of the Draft Western Cape PSDF Rural Land Use Planning and management Guidelines (2009) to reviewed and updated to support and guide the implementation of the provincial agenda in rural areas. This Guideline is thus a greater refinement of the 2014 PSDF.

The objectives of the Rural Areas Guidelines are to:

- Promote sustainable development in appropriate rural locations throughout the Western Cape and ensure the inclusive growth of the rural economy;
- Safeguard priority biodiversity areas and the functionality of the province's life supporting ecological infrastructure and ecosystem services (i.e. environmental goods and services);
- Maintain the integrity, authenticity and accessibility of the Western Cape's significant farming, ecological, coastal, cultural and scenic rural landscapes, and natural resources;
- Assist Western Cape municipality to plan and manage their rural areas more effectively, and to inform the principles of their zoning schism and spatial development framework in a pro-active manner;
- Provide clarity to all role players and partners (public and private) on the type of development that is appropriate beyond the current built-up areas, suitable locations where it could take place and the desirable form ad scale of such a development:

- Be viewed as a gender mainstreaming tool which will move the Western Cape further along the trajectory towards the achievement of equality, particularly the youth and gender equality imperatives in rural land use planning.

❖ **Infrastructure Installations**

It is acknowledged in the guidelines that renewable energy installations will by its space extensive nature, be located outside urban areas.

The majority of the implementation guidelines have been incorporated in the new Beaufort West Standard Zoning Scheme By-Law (2020). The following is additional:

- Installations to be located on previously disturbed terrain (where possible), or land of low biodiversity or agricultural value;
- Installations should not interfere with or negatively impact on existing/planned agriculture;
- Only essential installations to be accommodated inside Agriculture;
- Avoid slopes of more than 12% and if not possible, erosion must be controlled.

❖ **Development Applications**

Guidelines are included to guide authorities with land use decisions in rural areas and to enable them to impose suitable conditions. These are summarised below:

- Consider the compatibility of the proposed land use activity given the Biodiversity and Spatial Planning Category;
- Preserve unique or high value agricultural land, and do not compromise existing farming activities;
- Ensure existing and future mineral resources are not compromised;
- Consider the impact on cultural and scenic landscapes;
- Ensure the development does not unduly expand the Municipality's reticulation networks;
- Ensure the proposal does not impact negatively on the authenticity of rural landscapes;

3.6 Central Karoo District Municipality Spatial Development Framework (SDF) 2019

The Beaufort West Local Municipality is situated in the Central Karoo District Municipal area. The SDFs for these areas present the spatial vision and objectives for development implementation, specifically in relation to Gasfontein quarry facility.

The spatial vision for Central Karoo District Municipality:

Working Together in Development and Growth

in order to ensure that the Central Karoo becomes a place where economic growth, social development and sustainability is achieved whilst maintaining the rural character, as well as embracing and developing the diversity of the communities.

❖ **District wide spatial concept:**

The **spatial concept for the district municipality** focusses on sustainable development, resilience and partnerships.

The **four strategies** of the municipal wide spatial concept are:

1. A region that protects the environment, enhances resilience and capitalises on and honour's the Karoo charm in support of a vibrant people and economy.
2. Improve regional and rural accessibility and mobility for people and goods in support of a resilient economy.
3. Allocate government resources, infrastructure and facilities in a manner that uplifts and skills people and focusses on maximising impact on the most possible people, while providing a basic level of service for all.
4. Partnership-driven governance and administration towards improved financial and non-financial sustainability and resilience.

Municipal strategy 1 (applicable to this application)

A resilient region is one that can adapt to and mitigate against the negative effects of climate change, increasing temperatures, reduced rainfall and the host of downstream impact on the economy and society at large. The future vibrancy of the economy and social advances will invariably be rooted in the resilience of the natural environment to a host of negative impacts.

▪ Policies in support of this strategy (applicable to this application):

Support and promote the renewable energy:

The Karoo region is blessed with significant solar and wind energy – the prerequisites for successful renewable energy projects. The Central Karoo should leverage these assets to encourage independent Power Producers to locate in the region by making and keeping the Central Karoo a well-managed and desirable place to locate.

National government has identified preferred areas or Renewable Energy Development Zones (REDZ's), as well as identified areas for electricity generation. Notwithstanding this, there are vast areas of the Central Karoo outside these REDZ's that hold potential to generate renewable energy. These areas hold not be completely ignored in supporting the future energy resilience of the province and the country.

Policy Guidelines:

- Actively seek out green energy projects to be located in the region.
- Put in place incentives to encourage green energy operators to locate in the Central Karoo.
- Lobby the National Department of Mineral Resources and Energy to expand the Renewable Energy Development Zones extensively within the Central Karoo, in order to promote renewable energy opportunities.

The Gasfontein quarry project supports the principles as contained in the Central Karoo District Municipality Spatial Development Framework.

3.7 Beaufort West Local Municipality Spatial Development Framework (MSDF) 2014

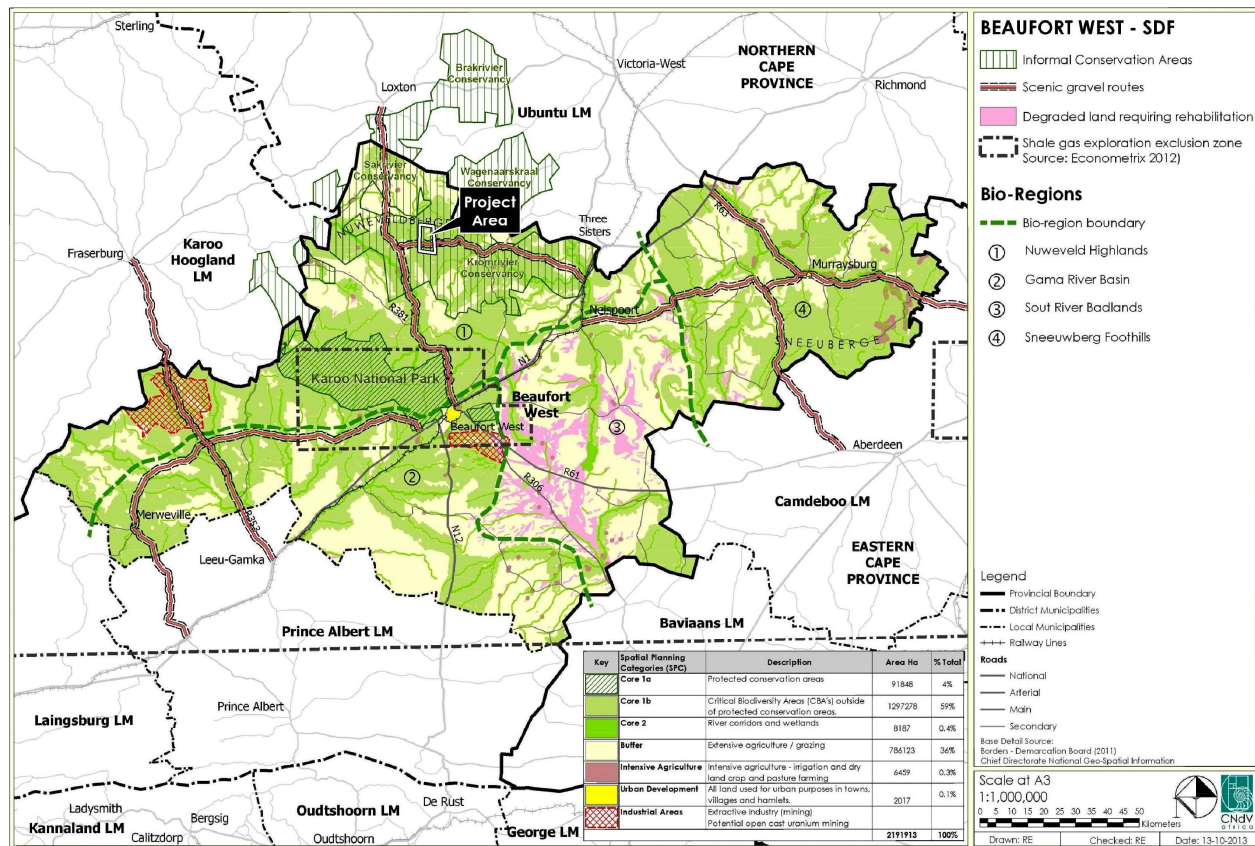
The Municipal Spatial Development Framework (MSDF) for Beaufort West links to the objectives of the IDP and becomes the spatial representation of the IDP objectives. The MSDF is linked with other spatial policies, including the PSDF and the DMSDF.

❖ Bio-Regions

The SDF identified four bio-regions that can be distinguished in terms of the natural environment and economy. The bio-regions are:

- Nuweveld Highlands
- Gamka River Basin
- Sout River Badlands
- Sneeuberg Foothills

The SDF states that the Nuweveld Highlands bio-region has fairly good potential for wind and solar energy projects. The development of the renewable facilities will require the cost effective supply of material for construction. The locality of the proposed quarry meets this objective.



Extract from Beaufort West SDF

The SDF promotes major infrastructure projects such as large wind energy generation projects in general and sets out siting principles and development guidelines.

The SDF makes certain recommendations and provides guidelines for the siting of Renewable Energy Projects as well as provisions for the design of facilities, which are summarised below. These recommendation should be considered as guidelines when applications are considered.

The guidelines refer to:

- Slope
- Geology
- Soils
- Rainfall
- Surface Hydrology & Groundwater
- Vegetation
- Terrain Study

The extensive Environmental Report process and support specialist studies address the issues and guidelines adequately. The implementation of the Gasfontein quarry facility will be in accordance with the Environmental management Programme (EMPr) and Environmental Authorisation (EA).

3.8 Other Legislation and Policies

All other legislation and regulations pertaining to such land uses, such as the National Environmental Management Act, 1998 (Act 107 of 1998), the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) the National Heritage Resources Management Act, 1999 (Act 15 of 1999) and other applicable legislation will still apply. These principles seek to inform and guide the District Municipality and its Local Municipalities on land use change to permit mining.

The following are key considerations in the assessment of land use change applications as recommended by the International Union for the Conservation of Nature and Natural Resources (IUCN):

- **Principle 1:** Mining operations should be planned to minimise the creation of dust, carbon and other gas emissions such as perfluorinated carbon compounds.
- **Principle 2:** Topsoil resources in areas subject to mining or extractive land uses shall prior to the commencement of any activities be characterised and mapped in order to determine the quantity of soil, soil texture and depth and the composition of vegetation.
- **Principle 3:** The District Municipality is subject to brief and severe thunderstorms which causes flash flooding; erosion control shall therefore be applied at all mining activity sites by using appropriate soil stabilisation techniques. These techniques could either be by way of mechanical means to stabilise wind-blown soil or the establishment of permanent plant cover.
- **Principle 4:** Restoration and rehabilitation of landscapes affected by mining and extractive land uses should be agreed to with the District Municipality and affected Local Municipality as part of an application for land use change and prior to the land use and other rights granted in terms of national or provincial legislation being taken up.
- **Principles 5:** Water use should be minimised and water conservation maximised by harvesting rainfall, reinstating the surface hydrological system on completion of the project or increasing the potential for groundwater recharge through the creation vegetated areas and wetlands. A waste management plan drafted in terms of an environmental management plan should also address waste minimisation and the impact of waste on water resources (including minimisation, containment, modification and removal of waste from water resources)
- **Principle 6:** Survey and mapping of plant species shall be undertaken before mining activities are undertaken. The seeds of local plant species and topsoil shall be conserved for rehabilitation and ecosystem restoration.
- **Principle 7:** Surveys of wildlife in affected mining areas shall be undertaken prior to any mining activities being undertaken. If endemic or threatened species are identified, special protection measures must be considered.
- **Principle 8:** Mining companies and developers shall provide adequate protection or support to any affected settlement within the District in respect of relocations, dust pollution, contaminated ground water, noise pollution and any other detrimental impacts as determined by authorities in consultation with affected communities and the Local Municipality and District Municipality. Mining companies and developers shall provide the necessary support through development levies and contributions to

improve infrastructure affected by mining operations. These include roads, water, energy, housing and other public services.

- **Principle 9:** Mining companies and developers shall consult with local communities, Local Municipalities, District Municipality, Provincial and National Government to build local capacity for economic development in industries supplying the mining industry.

The applicant is confident that the proposed application and associated studies comply with the guiding principles referenced above and will aim to ensure that all relevant measures are put in place to ensure continued compliance with the guidelines.

3.9 Compliance with the MSDF

- The SDF makes certain recommendations and provides guidelines for the siting of Renewable Energy Projects. As well as provisions of the design of facilities.
- The MSDF provides guidelines only. A detailed scientific site assessment process, supported by various specialist studies, has been conducted and based on the detailed assessment.
- The development proposal makes use of natural resources which will contribute to energy for the local and national economy, whilst taking into consideration all environmental sensitivities on the site.
- The layout and design of the facility follows the guidelines for renewable energy installations in that it will not be situated on land of high agricultural value, and it will not interfere with any agricultural activities.
- Various employment and other economic development opportunities (i.e. local workforce, local spending etc.) will be created with this project.
- The MSDF indicated that substations and powerlines within the site should preferably be buried and follow road alignments wherever possible. This is a guideline only and the EMPr will be followed to mitigate impacts as identified.
- The Gasfontein quarry proposal supports the principles and spatial vision of the Beaufort West SDF and is deemed to be consistent with the SDF.

4.1 The Need for Development

The gravel material will be used as aggregate in the turbine bases on the wind farm close to the quarry as well as the access road to the windfarm. The wind farm will generate much needed electricity for the area. Wind is a free fuel and users of wind energy have a smaller carbon footprint.

The proposed development is paramount to the success of the wind farm completion. Geological tests in the surrounding area show insufficient quality of gravel material for this purpose and the cumulative impact of importing high volumes of suitable aggregate for the wind turbine bases and access road will exceed the quarry's impact, therefore the need for the quarry extremely high.

It was also found that no commercial sources suitable for the turbine basis and access roads are available in close proximity to the site. The use of only commercial sources of gravel/aggregates for a project of this magnitude would also be inordinately expensive, and would render the project unviable. It was therefore decided that investigations would be conducted to obtain aggregate material to be used for the wind farm construction in close proximity to the quarry.

Should the mining of the aggregate material not be allowed, the necessary material for the wind farm concrete of the turbine bases will not be available and the wind farm construction will be in jeopardy.

The following factors have an impact on the availability of suitable quarry areas:

- Highly specific rock material is required for the wind turbine bases and access road which is found only in the vicinity of the proposed quarry site.
- Distance from the wind farm is an important factor and every km that a quarry is further away from the project adds between R3.5 and R5.0 million in haul cost to the project. If the haul cost becomes excessive the project will not be economically viable to implement.
- Geological maps were consulted as part of a desktop study to determine suitable geological areas where road building material can be obtained.
- Extensive site visits were undertaken by a geologist and specialist to identify this as a suitable material area.
- The land owner was engaged to obtain permission to test the area.
- Discussions were undertaken with the landowner regarding land acquisition.

The following are reasons for the preferred site alternative:

- The site is not within a threatened veldtype (ecosystem).
- The site is not within or close to any priority areas, which include protected areas (nature reserves), important bird areas (IBAs) and national protected area expansion strategy (NPAES) focus areas.
- There are no watercourses in the study area, including drainage lines. The closest watercourse is a small ephemeral (erratic) unnamed stream just over 500m south of the site.
- During field investigations no Red Data Listed (RDL) or Orange Data Listed (ODL) plants were observed. None are expected to occur.
- The study site is not situated within a Critical Biodiversity Area (CBA) or Ecological with the study area boundaries.

- Site investigations were conducted during the summer (wet) season of the region and the findings and availability of field data is sufficient to reached acceptable findings and outcomes from the assessment.
- There are no obvious fatal flaws in terms of the natural environment.
- No application for water use license necessary for this quarry a no watercourse will be affected.
- The quarry has the required aggregate material to be used for the construction of the wind turbine basis for the wind farm.
- The quarry is in close proximity to the wind farm.
- Discussions were held with the relevant landowner and he does not have any objection to the proposed opening of the quarry on his farm.

4.2 Environmental Assessment and Impact (This section should be read together with the Basic Assessment Report)

The application for the Mining Permit and Basic Assessment Environmental application is being undertaken for the proposed quarry. It is anticipated that the Environmental Authorization and land mining permit will be granted shortly.

The following paragraph provided detail on the biodiversity of the study area.

4.2.1 Topography

The project site is located on a gently sloping area with rocky outcrops and a rocky hillslope on the east. It varies in elevation from about 1 664 in the northernmost corner to about 1 629 m at the rocky hillslope in the southernmost corner. The existing access road starting from the district road at an elevation of about 1 641 m crosses for the most part over undulating terrain. It crosses for the most part relatively flat terrain and increases moderately in elevation towards the project site.



4.2.2 Climate

The project site lies 1625m above sea level, its regional rainfall occurs mainly in autumn and summer, peaking in March. Mean annual precipitation ranges from about 180 mm in the west to 430 mm in the east. The incidence of frost is relatively high but ranging widely from <30 days (in the lower-altitude Cradock area) to >80 days of frost per year (bordering the Upper Karoo Hardeveld on the Compassberg and mountains immediately to the west). The mean maximum and minimum monthly temperatures in Middelburg (Grootfontein) are 36.1°C and –7°C for January and July, respectively. Corresponding values are 37°C and –8°C for Victoria West and 36.6°C and –4.2°C for Hofmeyr (Mucina & Rutherford, 2006).

The variation in precipitation between the months with the lowest and highest levels of rainfall is 42 mm, as observed. The average temperatures vary during the year by 12.9 °C. The month with the highest relative humidity is June (51.13 %). The month with the lowest relative humidity is September (36.91 %). The month with the highest number of rainy days is February (7.77 days). The month with the lowest number of rainy days is June (2.93 days).

4.2.3 Geology & Soils

The Project Area is located on a massive dolerite sheet intruded into the Teekloof formation consisting of brownish-red and greenish-grey mudstone with subordinate siltstones and sandstones. The inclined dolerite sheets tend to form crescent-shaped or concentric intrusions. The Site is located on the northeastern part of such a concentric structure. The primitive, skeletal soils in rocky areas developing over sedimentary rocks such as mudstone and arenites of the Adelaide Subgroup of the Karoo Supergroup and to a lesser extent also the Eccia Group (Waterford and Volkrust Formations) as well as Jurassic dolerite sills and dykes and subsummit positions of mesas and butts with dolerite boulder slopes.

4.2.4 Vegetation Types: Flora & Fauna

South Africa is divided up into nine major Biomes.

- **Flora**

The vegetation of the project site is that of the upper Karoo and characterized by low open shrubland. Grasses are more common in depressions and on sandy soils. The most dominant species included the shrubs *Chrysocoma ciliata*, *Dicerothamnus rhinocerotis*, *Euryops lateriflorus*, and graminoids by *Aristida* spp., *Eragrostis obtusa* and *Sporobolus ioclados*

Furthermore, in terms of the Western Cape Biodiversity spatial plan, the project site falls outside the Critical Biodiversity Areas or Ecological Supported Areas



- **Fauna**

The proposed mine area is within an active livestock farm currently in use by the lease to farm sheep. There are no wild animals identified onsite, however, as per the findings of the terrestrial assessment presence of wild animals may not be ruled out, given its area extent of 392.6857H. The mine area will be fenced to restrict access thus there will be no interference with the current livestock farming or wild animals.

Vegetation disturbance will be limited to the 5Ha demarcated mining area and along the access road, leaving the rest of the faunal habitat intact. The integrity of the natural ecosystem and biodiversity will not be lost.

4.2.5 Compliance with the NEMA Authorisation for the Environmental Authorisation

The Environmental Authorisation granted for the Nuweveld North Wind Energy Facility is subject to a number of conditions which are relevant to the upgrading of the farm roads and area identified for the mining activity. The environmental authorisation to be obtained for the mining activity will impose site specific conditions. However to ensure the environmental compliance and to lessen the overall impact of both temporary mining and long term wind farm, the following conditions extracted from the authorisations already granted are relevant and should form part of the planning approval.

- Effective monitoring system to detect any leakage or spillage of any hazardous substances during their transportation, handling, use and storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems.
- Where roads pass right next to major water bodies, provision shall be made for fauna such as toads to pass under the roads by using culverts or similar structures.
- Bridges design must be such that it minimise impact to riparian areas with minimal alterations to water flow and must allow the movement of fauna and flora.
- Wetlands, rivers and river riparian areas must be treated as "no-go" areas and appropriately demarcated as such. No vehicles, machinery, personnel, construction material, fuel, oil, bitumen and waste must be allowed into these areas without the express permission of and supervision by the ECO, except for rehabilitation work in these areas.
- Signs must be placed along construction roads to identify speed limits, travel restrictions, and other standard traffic control information. To minimise impacts on local commuters, consideration should be given to limiting construction vehicles travelling on public roadways during the morning and late afternoon commute time.

- Signage must be erected at appropriate points warning of turning traffic and the construction site.
- All structures crossing streams must be located and constructed so that they do not decrease channel stability or increase water velocity.
- A designated access to the site must be crated and clearly marked to ensure safe entry and exit.
- Construction vehicles carrying materials to the site should avoid using roads through densely populated built-up areas so as not to disturb existing retail and commercial operations.
- Road borders should be regularly maintained to ensure that vegetation remains short and that they therefore serve as an effective firebreak.
- Roads must be designed so that changes to surface water runoff are avoided and erosions is not initiated.
- All construction vehicles should adhere to low speed limit to avoid collisions with susceptible species such as snakes and tortoises.
- The potential noise impact be re-evaluated should be layout be changed such that any wind turbines are located closer than 1,000 m from a confirmed noise sensitive areas.
- The holder of this authorisation must ensure that the construction staff working in areas where the 8 hours ambient noise levels exceed 75dBA must wear ear protection equipment.
- The holder of this authorisation must ensure that all equipment and machinery are well maintained and equipped with silencers.
- The holder of this authorisation must provide a prior warning to the community when a noisy activity e.g. blasting is to take place.
- Positions of turbines jeopardizing compliance with accepted noise levels should be revised during the micro-sitting of the units in question and predicted noise levels re-modelled by the noise specialist, in order to ensure that the predicted noise levels are less than 45dB(A).
- Construction staff must be trained in actions to minimise noise impacts.

The aforementioned conditions are expected to be imposed in the authorisation and should be strictly monitored by the overall project Environmental Control Officer to be appointed for the project.

4.3 Access & Movement

The site will gain access from the existing access to the farm directly from the R381 linking Beaufort West to Loxton.

Internal access is provided from the existing farm roads to be upgraded in accordance with the conditions imposed in the environmental authorisation.

4.4 Surrounding Land Uses

The areas surrounding the application site are mainly characterised by agricultural farm land.

It is anticipated that the proposed quarry due to its limited life span and size would not have any material implications on the surrounding land uses.

The impact of the proposed extension of the quarry on the surrounding land owners will be minimal, as the mining activity will be limited to the mining area.

The access road will constantly be maintained and kept in a good condition at all times and to not inconvenience other users. Final maintenance of the road will be done prior to leaving the site.

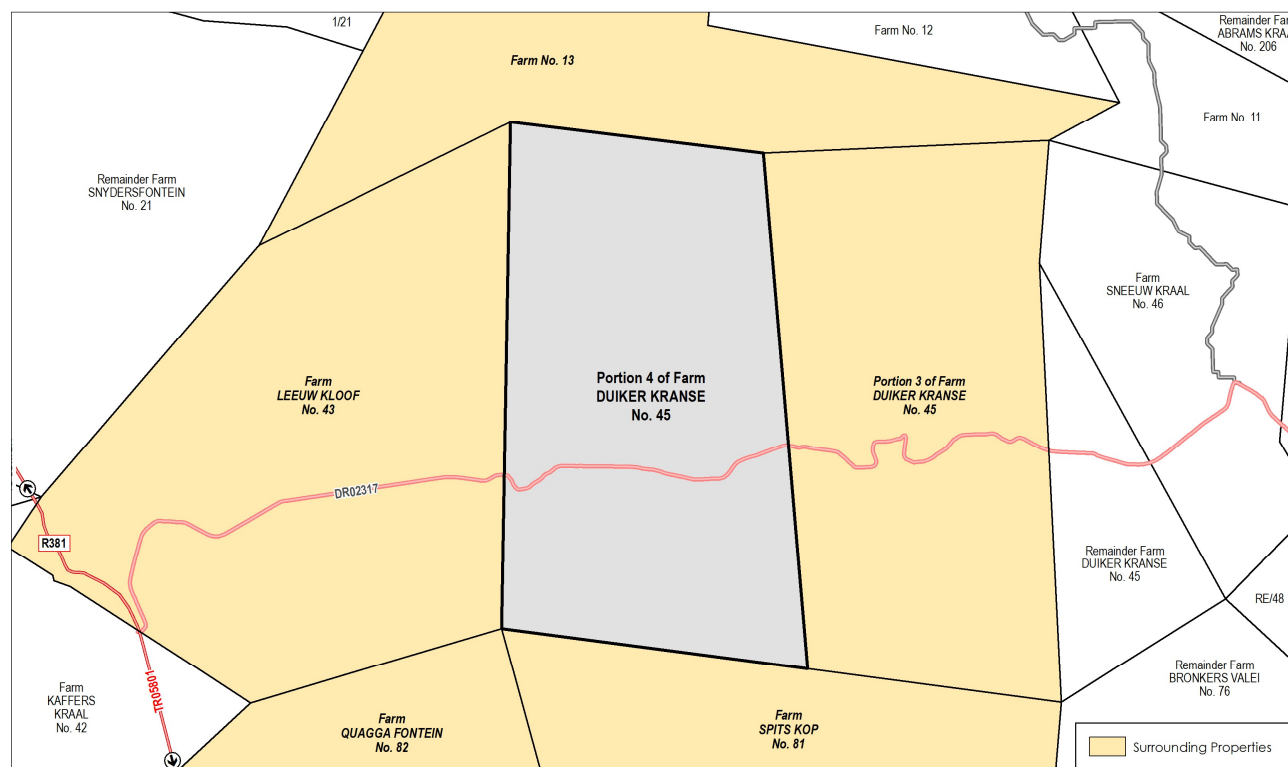
The quarry will employ approximately 15 people on a full time basis, whilst the local business opportunities will benefit from the multiplier effect of the investment.

Rehabilitation of the mine on completion of the project improve the safety of the local population and farm animals.

4.5 Public Interest & Participation

Public participation with respect to the application for Departure should be conducted by the Beaufort West Local Municipality through the normal procedures as outlined in the relevant Land Use Management Legislation. Urban Dynamics EC, as the applicant, will assist the Beaufort West Local Municipality with the process and in the unlikely event of any objections received, Urban Dynamics EC and the professional team will respond to any comments received by the Municipality.

As part of the public participation process, the application should be advertised through the relevant media and referred to possible interested and affected parties, as identified by the Beaufort West Local Municipality.



Map 7: Surrounding Property Owners

5

Chapter 5 : Conclusion

The application seeks a temporary departure for the expansion of the existing quarry for a period of 5 years. Given the details of applications submitted and approved with regard to the mining activity and rehabilitation it is concluded that the quarry is unlikely to result in any permanent impacts on the surrounding area or existing land uses. Your favourable commendation would be appreciated.