FISH BY THE SEA (PTY) LTD

PROPOSED PROSPECTING FOR DIAMONDS ON AN APPROXIMATELY 121HA AREA BETWEEN THE LOW AND HIGH WATER MARK OF THE SEA: PORTION 4 OF THE FARM RIETFONTEIN EXTENSION NO. 151 AND PORTION 4 OF THE FARM GRAAUW DUINEN NO. 152, VANRHYNSDORP

DRAFT SCOPING REPORT

DMR REF: WC 50/1/1/2/10454/ PR

Date: 15 January 2024

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Document title:	**PROPOSED PROSPECTING FOR DIAMONDS AND BULK SAMPLING ON AN APPROXIMATELY 121HA AREA BETWEEN THE LOW AND THE HIGH-WATER MARK OF THE SEA: PORTION 4 OF THE FARM RIETFONTEIN EXTENSION NO. 151 AND PORTION 4 OF THE FARM GRAAUW DUINEN NO. 152, VANRHYNSDORP**
Author:	Bernard de Witt
Signature:	

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

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

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

NAME OF APPLICANT: **Fish by the Sea (Pty) Ltd**
TEL NO: **083 321 1822**
FAX NO: **011 3926798**
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DMR REFERENCE NUMBER: **WC 50/1/1/2/10454/ PR**

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.

OBJECTIVE OF THE SCOPING PROCESS

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

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

Statement of Independence
EnviroAfrica cc has no interest in the outcome of this report, nor any interest that can reasonably be deemed to have negatively affected the independence of EnviroAfrica in managing the application for environmental authorisation.

Disclaimer
The opinions expressed in this report have been based on the information supplied to EnviroAfrica by the Applicant. EnviroAfrica has exercised all due care in reviewing the supplied information, with conclusions from the review depending on the accuracy and completeness of the supplied data.

EnviroAfrica does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them.
Professional environmental opinions presented in this report apply to the site conditions and features as they existed at the time of GDSC's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which GDSC had no prior knowledge nor had the opportunity to evaluate.

DEFINITIONS

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 –
i. The property on which or location where it is proposed to undertake the activity;
ii. The type of activity to be undertaken;
iii. The design or layout of the activity;
iv. The technology to be used in the activity, and;
v. The operational aspects of the activity.

Baseline - Information gathered at the beginning of a study which describes the environment prior to development of a project and against which predicted changes (impacts) are measured.

Basic Assessment Process – This is the environmental assessment applied to activities listed in Government Notice No. R 983 (Listing 1) as amended by GNR 327 (dated 7/04/2017) and No. R985 (Listing 3) as amended by GNR 324 (dated 7/04/2017)**.** These are typically smaller scale activities of which the impacts are generally known and can be easily managed. Generally, these activities are considered less likely to have significant environmental impacts and, therefore, do not require a full-blown and detailed Environmental Impact Assessment (see below).

Biodiversity - The diversity, or variety, of plants, animals and other living things in a particular area or region. It encompasses habitat diversity, species diversity and genetic diversity.

Borehole - Includes a well, excavation, or any other artificially constructed or improved groundwater cavity which can be used for the purpose of intercepting, collecting or storing water from an aquifer; observing or collecting data and information on water in an aquifer; or recharging an aquifer.

Community - Those people who may be impacted upon by the construction and operation of the project. This includes neighbouring landowners, local communities and other occasional users of the area.

Construction Phase - The stage of project development comprising site preparation as well as all construction activities associated with the development.

Consultation - A process for the exchange of views, concerns and proposals about a project through meaningful discussions and the open sharing of information.

Critical Biodiversity Area - Areas of the landscape that must be conserved in a natural or near-natural state in order for the continued existence and functioning of species and ecosystems and the delivery of ecosystem services.

Cumulative Impacts - Direct and indirect impacts that act together with current or future potential impacts of other activities or proposed activities in the area/region that affect the same resources and/or receptors.

Environment - The surroundings within which humans exist and that are made up of
i. The land, water and atmosphere of the earth;
ii. Micro-organisms, plant and animal life;
iii. Any Part or combination of (i) and (ii) and the interrelationships among and between them; and
iv. The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental Authorisation (EA) – The authorisation by a competent authority of a listed activity.

Environmental Assessment Practitioner (EAP) – The person responsible for planning, management and co-ordination of environmental impact assessment, strategic environmental assessments, environmental management plans or any other appropriate environmental instrument introduced through regulations.

Environmental Impact Assessment (EIA) – In relation to an application to which scoping must be applied, means the process of collecting, organizing, analysing, interpreting and communicating information that is relevant to the consideration of that application. This process necessitates the compilation of an Environmental Impact Report, which describes the process of examining the environmental effects of a proposed development, the anticipated impacts and proposed mitigatory measures.

Environmental Impact Report (EIR) - A report assessing the potential significant impacts as identified during the Scoping phase.

Environmental Management Programme (EMPr) - A management programme designed specifically to introduce the mitigation measures proposed in the Reports and contained in the Conditions of Approval in the Environmental Authorisation.

Gross Domestic Product (GDP) by region - represents the value of all goods and services produced within a region, over a period of one year, plus taxes minus subsidies.

Hydrocarbons – Oils used in machinery as lubricants, including diesel and petrol used as fuel.

Impact - A change to the existing environment, either adverse or beneficial, that is directly or indirectly due to the development of the project and its associated activities.

Interested and Affected Party ("I&AP") – Any individual, group, organization or associations which are interested in or affected by an activity as well as any organ of state that may have jurisdiction over any aspect of the activity.

Municipality –
(a) Means a metropolitan, district or local municipality established in terms of the Local Government: Municipal Structures Act, 1998 (Act No. 117 of 1998); or
(b) In relation to the implementation of a provision of this Act in an area which falls within both a local municipality and a district municipality, means
    (i) The district municipality, or
    (ii) The local municipality, if the district municipality, by agreement with the local municipality, has assigned the implementation of that provision in that area to the local municipality.

EIA Regulations - The EIA Regulations means the regulations made under section 24(5) of the National Environmental Management Act (Act 107 of 1998) (Government Notice No. R 982, R 983, R984 and R 985 in the Government Gazette of 4 December 2014 refer as amended by GNR 324, 325, 326 and 327 of 7 April 2017.

No-Go Alternative – The option of not proceeding with the activity, implying a continuation of the current situation / status quo

Public Participation Process ("PPP") - A process in which potential Interested and Affected Parties are given an opportunity to comment on, or raise issues relevant to, specific matters.

Registered Interested and Affected Party – All persons who, as a consequence of the Public Participation Process conducted in respect of an application, have submitted written comments or attended meeting with the applicant or environmental assessment practitioner (EAP); all persons who have requested the applicant or the EAP in writing, for their names to be placed on the register and all organs of state which have jurisdiction in respect of the activity to which the application relates.

Scoping process - A procedure for determining the extent of and approach to an EIA, used to focus the EIA to ensure that only the significant issues and reasonable alternatives are examined in detail

Scoping Report – The report describing the issues identified during the scoping process.

Significant impact – Means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.

Spatial Development Framework ("SDF") - A document required by legislation and essential in providing conservation and development guidelines for an urban area, which is situated in an environmentally sensitive area and for which major expansion is expected in the foreseeable future.

Specialist study - A study into a particular aspect of the environment, undertaken by an expert in that discipline.

Stakeholders - All parties affected by and/or able to influence a project, often those in a position of authority and/or representing others.

Sustainable development - Sustainable development is generally defined as development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. NEMA defines sustainable development as the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.

Visibility - The area from which the project components would actually be visible and depends upon topography, vegetation cover, built structures and distance.

Visual Character - The elements that make up the landscape including geology, vegetation and land-use of the area.

Visual Quality - The experience of the environment with its particular natural and cultural attributes.

Visual Receptors - Individuals, groups or communities who are subject to the visual influence of a particular project.

ACRONYMS AND ABBREVIATIONS

amsl	Above mean sea level
BA	Basic Assessment
BPEO	Best Practicable Environmental Option
CBA	Critical Biodiversity Area
DM	District Municipality
DMR	Department of Mineral Resources
DWS	Department of Water and Sanitation
DSR	Draft Scoping Report
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Management Programme
ESA	Ecological Support Area
EStA	Early Stone Age
FoT	"Free on Truck ": means there is no processing and that it's a raw product.
FSR	Final Scoping Report
GA	General Authorisation
GDP	Gross Domestic Product
GDPR	Regional Gross Domestic Product
GGP	Gross Geographic Product
GNR	Government Notice Reference
ha	Hectares
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
km	Kilometres
km²	Square kilometres
LED	Local Economic Development
LM	Local Municipality
LoM	Life of Mine
LN	Listing Notice
L/s	Litres per second
LSA	Late Stone Age
m³	Metres cubed
MAP	Mean Annual Precipitation
MAPE	Mean Annual Potential Evaporation
MASMS	Mean Annual Soil Moisture Stress (% of days when evaporation demand was more than double the soil moisture supply)
MFD	Mean Frost Days
MPRDA	Mineral and Petroleum Resources Development Act 28 of 2002
MSA	Middle Stone Age
MSDS	Material Safety Data Sheet
NEMA	National Environmental Management Act 107 of 1998 as amended
NEM:BA	National Environmental Management: Biodiversity Act 10 of 2004
NEM:WA	National Environmental Management: Waste Act 59 of 1998
NFEPA	National Freshwater Ecosystem Priority Area
NHRA	National Heritage Resources Act 25 of 1999
NWA	National Water Act 36 of 1998
PES	Present Ecological State
RDL	Red Data List
ROM	Run of Mine
S&EIR	Scoping and Environmental Impact Reporting
SAHRA	South African National Heritage Resources Agency
SCC	Species of Conservation Concern
SDF	Spatial Development Framework
SLP	Social and Labour Plan
StatsSA	Statistics South Africa
WMA	Water Management Area
WML	Waste Management License
WUL	Water Use License

CONTENTS

1 CONTACT PERSON & CORRESPONDENCE ADDRESS

Details of the EAP

This Draft Scoping Report was prepared by Bernard de Witt, who has more than 30 years of experience in environmental management and environmental impact assessments.

After qualifying with a B. Sc. in Forestry and a B. A. (Hons) in Public Administration at the University of Stellenbosch, Bernard joined the Department of Forestry as an Indigenous Forest Planner in 1983, going on to become Manager of the Table Mountain Reserve with the Cape Town Council.

He then joined Cape Nature Conservation (CNC) and headed its Conservation Planning Section before taking up the position of District Manager of the Boland area (inc. the Hottentots Holland and Kogelberg). As a Regional Ecologist, he co-ordinated managerial and scientific inputs into Provincial Nature Reserves in the Boland, Overberg and West Coast regions of the Western Cape Province.

For the last four years of his employment, he assessed and evaluated development applications, from an environmental perspective, on behalf of CNC (now Western Cape Department of Environmental Affairs and Development Planning ("DEA&DP")). Since he left DEA&DP, he has been involved in environmental consulting in the private sector as a member of EnviroAfrica.

Refer to **Appendix A** for CV of EAP.

2 LOCATION OF THE ACTIVITY

Table 1: Details of the proposed prospecting site

Farm Name:	Portion 4 of the Farm Rietfontein Extension No. 151 and Portion 4 of the Farm Graauw Duinen No. 152, Vanrhynsdorp
Application area size	121ha
Magisterial district:	Vanrhynsdorp
Distance and direction from nearest town	55km north-west of Koekenaap and 50km west of Nuwerus
21-digit Surveyor General Code for each farm portion	C07800000000015100004 for Portion 4 of the Farm Rietfontein Extension No. 151 and C07800000000015200004 for Portion 4 of the Farm Graauw Duinen No. 152, Vanrhynsdorp

Locality Map

Refer to the locality plan attached as **Figure 1.**

Figure 2 shows the relevant properties and geographic co-ordinates thereof.

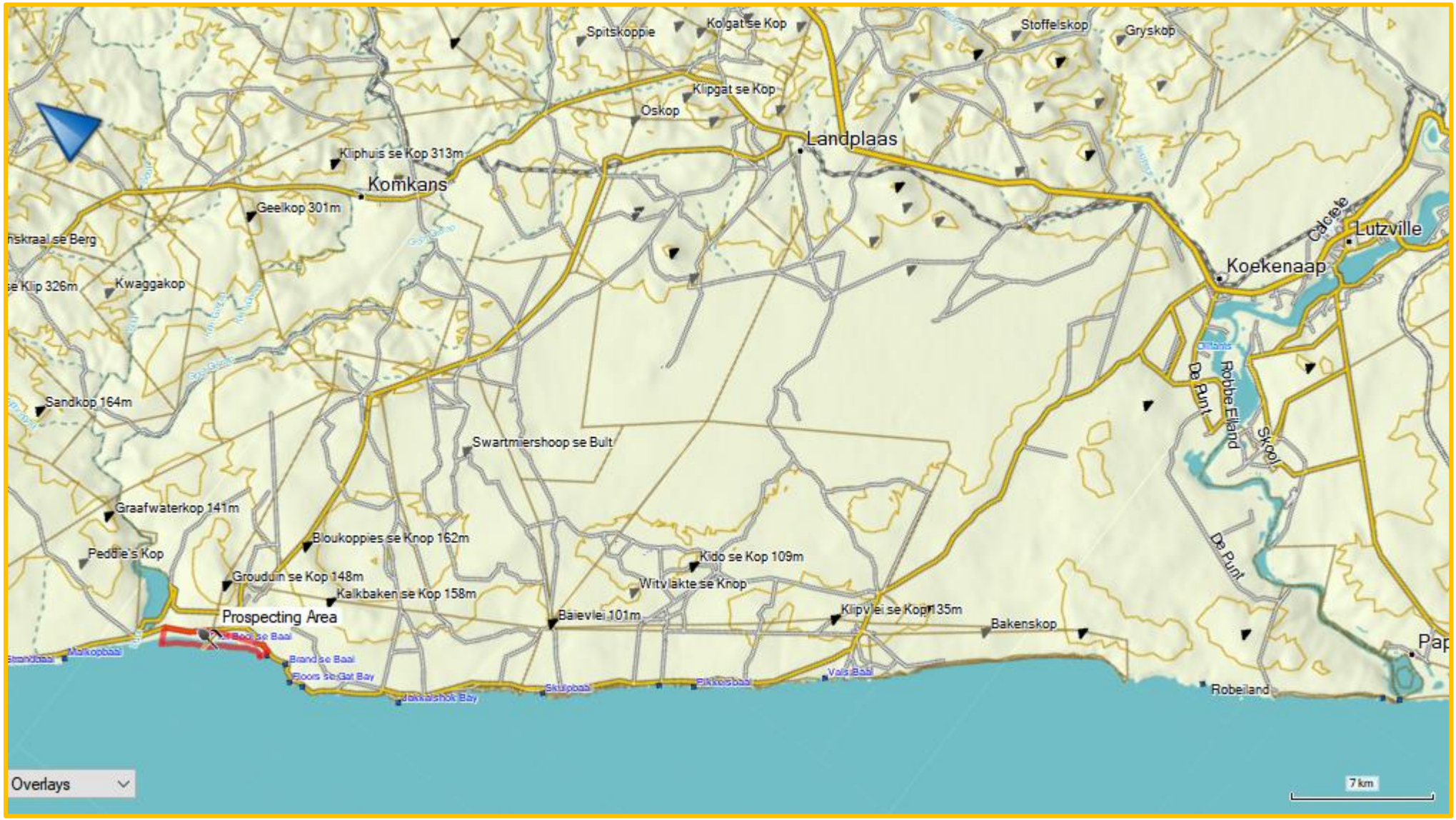

Figure 1: Locality plan showing proposed site as polygon with red perimeter

ID,Lat,Long	ID,Lat,Long	ID,Lat,Long	ID,Lat,Long	ID,Lat,Long
1 S31,29093° E17.87934°	2 S31.29076° E17.88168°	3 S31.28986° E17.88204°	4 S31.28883° E17.88232°	5 S31.28803° E17.88230°
6 S31.28533° E17.88174°	7 S31.28386° E17.88113°	8 S31.28294° E17.88069°	9 S31.28249° E17.88028°	10 S31.28212° E17.87973°
11 S31.28138° E17.87918°	12 S31.28111° E17.87867°	13 S31.28113° E17.87808°	14 S31.28113° E17.87777°	15 S31.28086° E17.87757°
16 S31.28077° E17.87785°	17 S31.28036° E17.87809°	18 S31.27973° E17.87807°	19 S31.27889° E17.87815°	20 S31.27816° E17.87791°
21 S31.27697° E17.87714°	22 S31.27607° E17.87669°	23 S31.27566° E17.87620°	24 S31.27502° E17.87587°	25 S31.27381° E17.87495°
26 S31.27292° E17.87397°	27 S31.27222° E17.87349°	28 S31.27082° E17.87204°	29 S31.27060° E17.87138°	30 S31.27047° E17.87058°
31 S31.26992° E17.87032°	32 S31.26899° E17.87041°	33 S31.26772° E17.87003°	34 S31.26451° E17.86852°	35 S31.26334° E17.86746°
36 S31.26096° E17.86656°	37 S31.25905° E17.86551°	38 S31.25529° E17.86257°	39 S31.25332° E17.86050°	40 S31.25120° E17.85889°
41 S31.25290° E17.85562°	42 S31.25393° E17.85686°	43 S31.25529° E17.85786°	44 S31.25695° E17.85965°	45 S31.25879° E17.86125°
46 S31.26185* E17.86326°	47 S31.26381°E17.86483°	48 S31.26799° E17.86679°	49 S31.26980° E17.86813°	50 S31.27111° E17.86890°
51 S31.27193° E17.86984°	52 S31.27277° E17.87036°	53 S31.27333° E17.87140°	54 S31.27558° E17.87335°	55 S31.27736° E17.87388°
56 S31.28407° E17.87879°	57 S31.28569° E17.87907°	58 S31.28648° E17.87935°	59 S31.28705° E17.87987°	60 S31.28790° E17.88029°
61 S31.28905° E17.88024°	62 S31.28961°E17.87994°	63 S31.29025° E17.87963°		

Figure 2: Locality plan of proposed site showing farm Boundaries and co-ordinates

3 DESCRIPTION OF THE PROPOSED ACTIVITIES

3.1 Introduction and Background

The applicant *i.e*., Fish by the Sea (Pty) Ltd proposes prospecting for alluvial diamonds between the high-water mark of the sea and the low-water mark of the sea on Portion 4 of the Farm Rietfontein Extension No. 151 and Portion 4 of the Farm Graauw Duinen No. 152, Vanrhynsdorp. The prospecting work includes bulk sampling as is described below.

3.1.1 Description of planned non-invasive activities:

PHASE 1: Literature Study Imagery Analysis Geological Mapping Geophysical Survey

During this phase the desktop studies and studying of available information on surrounding exploration work that has previously been done will be supplemented by field observations. Ground Resistivity measurements will also be used to “home in” on target areas.

3.1.2 Description of planned invasive activities:

PHASE 2: Preliminary evaluation - Prospecting pits
The objective of the preliminary evaluation phase is to determine a ballpark estimate of grade and size and thus possible in-situ value of the deposit. This is normally established by collecting mini samples by the most cost-effective method available. Due to the relative shallow overburden, prospecting pits is the most common technique and will be employed during this exploration program to allow for geological samples.
The results of the previous exploration program have indicated a series of small but very promising target areas across the entire prospecting area which are probably linked to paleo channels and raised marine beaches within the area.
Pit development will be the same as for trench development (Bulk Sampling) as shown in the diagrams below but on a much smaller scale and it is anticipated that no more than 20 such pits will be developed. After results are logged the pit will be backfilled immediately for security and safety reasons before the project moved to the next pit position.

The following volumes of material requiring earthmoving are only an estimation used in the costing exercise

- Pit floor to inspect and logged the gravel: 5.0m long and 2.0m wide (10m²)
- Depth of Topsoil: 0.5m to be stockpiled separate from overburden
- Depth of Overburden: 5m to be stockpiled separate from topsoil
- Depth of Gravel: 1m to be logged and photographed
- Total Depth of Prospecting Pit: 6.5m
- Footprint including 3m bench: 11m long x8m wide (88m²)
- Volume topsoil: 88m² X 0.5m = 44m³
- Volume overburden: 50m² (average 88m² top & 10m² bottom) X 5m = 250m³
- Volume gravel: 10m² X 1m = 10m³

Total earthmoving from 20 Prospecting pits: (44m³+250m³) X 20 = 5880m³

3.1.3 Description of bulk sampling activities

PHASE 3 Bulk sampling (Trenches)
The bulk sample will consist of a trench excavated perpendicularly to the low-water mark or paleo beach. There will only ever be one bulk sample open at any given time and it is anticipated that only four such sample sites will be developed (Figure 4, refers).

The bulk sampling or trial mining however needs to continue till approximately 1 000 carats has been recovered for the feasibility of the mine to be concluded and the determination to continue with a Mining Right application. The information from this trial mining is also essential to determine the most efficient final recovery method.
The following are pertinent regarding the prospecting trench development.
The trench width will be determined by:

- Overburden depth. The deeper the overburden, the wider the trench will be at the surface.
- The angle of repose and safety of the sidewalk in terms of slumping. The operator on site must determine these, as they are in situ safety considerations.

Prospecting trenching development will consist of the following procedures: Refer to Figure 3.

- Remove the overburden (beach sand) cover to a create a berm average 5m high around the excavation to prevent seawater and waves entering the excavation (Photo 1).
- Extract alluvial material ±5m thick layer and use infield screen to remove fines and oversize -2mm and +21mm, ±99% scalping for immediate backfill (Photo 2).
- The remaining ±1% (concentrate from the trommel screen) will be bagged and trucked to the containerised processing plant (Bourevestnik autosorter). This process makes use of flow sort X-ray media separator and the final concentrate for diamond recovery is deposit in safe boxes. (Photo 3).

The following volumes requiring earthmoving are only an estimation used in the costing exercise (Refer figure 4 and Photo study below):

- Depth of Overburden: 5m -10 to be used as a berm around the excavation to keep sea water and waves out of the excavation
- Depth of Gravel: 2-5m
- ROM: resource scalped by 99% through infield screening and 1% concentrate (+2mm and -21mm) are bagged and transported to containerised Bourevestnik x-ray sorter
- Total Depth of Prospecting Trench: 10-15m
- Footprint of trench: 300m long x 150m wide (45 000m² or 4.5Ha)
- Volume overburden: 45 000m² X 10m deep = 450 000m³
- ROM 45 000m² X 5m = 225 000m³
- Concentrate 225 000m³ X 1% = 2 250m³ X 2SG = 4 500 tons

The applicant requires 5000 tonnes concentrate per sample for processing to obtain a representative sample for sufficient statistical analysis to complete a resource statement and to determine a grade of carats per 100 ton (CPHT).

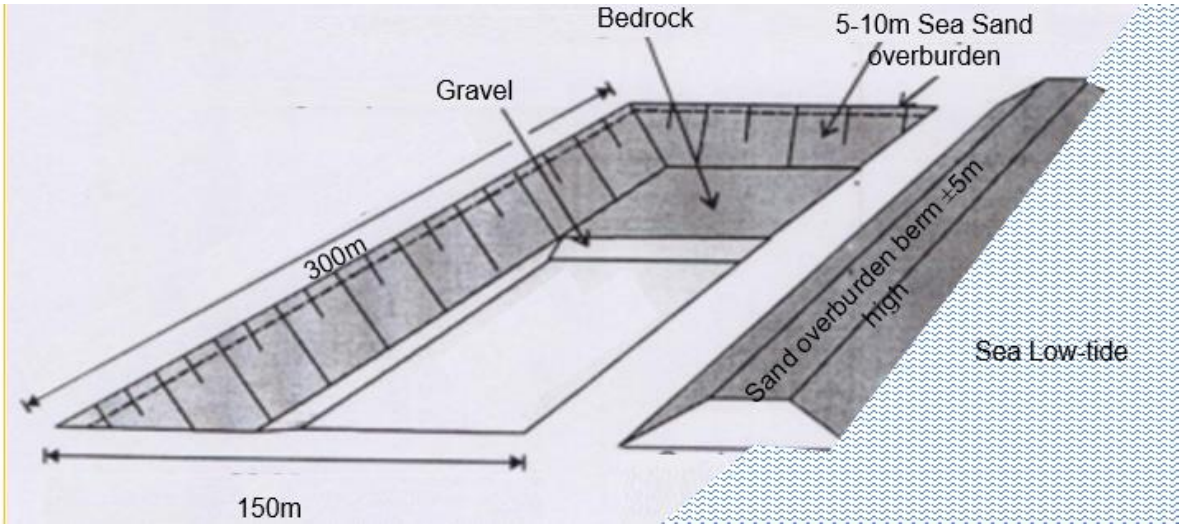

Figure 3: Schematic trench development

Photo 1: Berm to prevent waves from entering excavation

The maintenance of the berm is a continuous process due to wave action while sampling is ongoing and as soon as the berm is breached, the area is backfilled and levelled within two high tide events. Also note in Photo 1, the 8" mono pump used to pump water from excavations to help prevent flooding during sampling

Photo 2: Infield trommel screen

The screen removes fines and oversize, ±99% scalping (-2mm and +21mm) for immediate backfill. Also shown in Photo 2 is a tough bag for collecting concentrate ±1% that will be transported to the processing plant.

The excavator is used to feed the trommel screen and for backfilling and levelling of the waste product on a continuous basis. The screen makes use of the make-up water that gathers in the pit.

Photo 3 Bourevestnik auto sorter

Mobile 6m containerised processing plant to be moved in relation to sample sites. The material from tough bags is processed for the final recovery of diamonds and the waste is backfilled

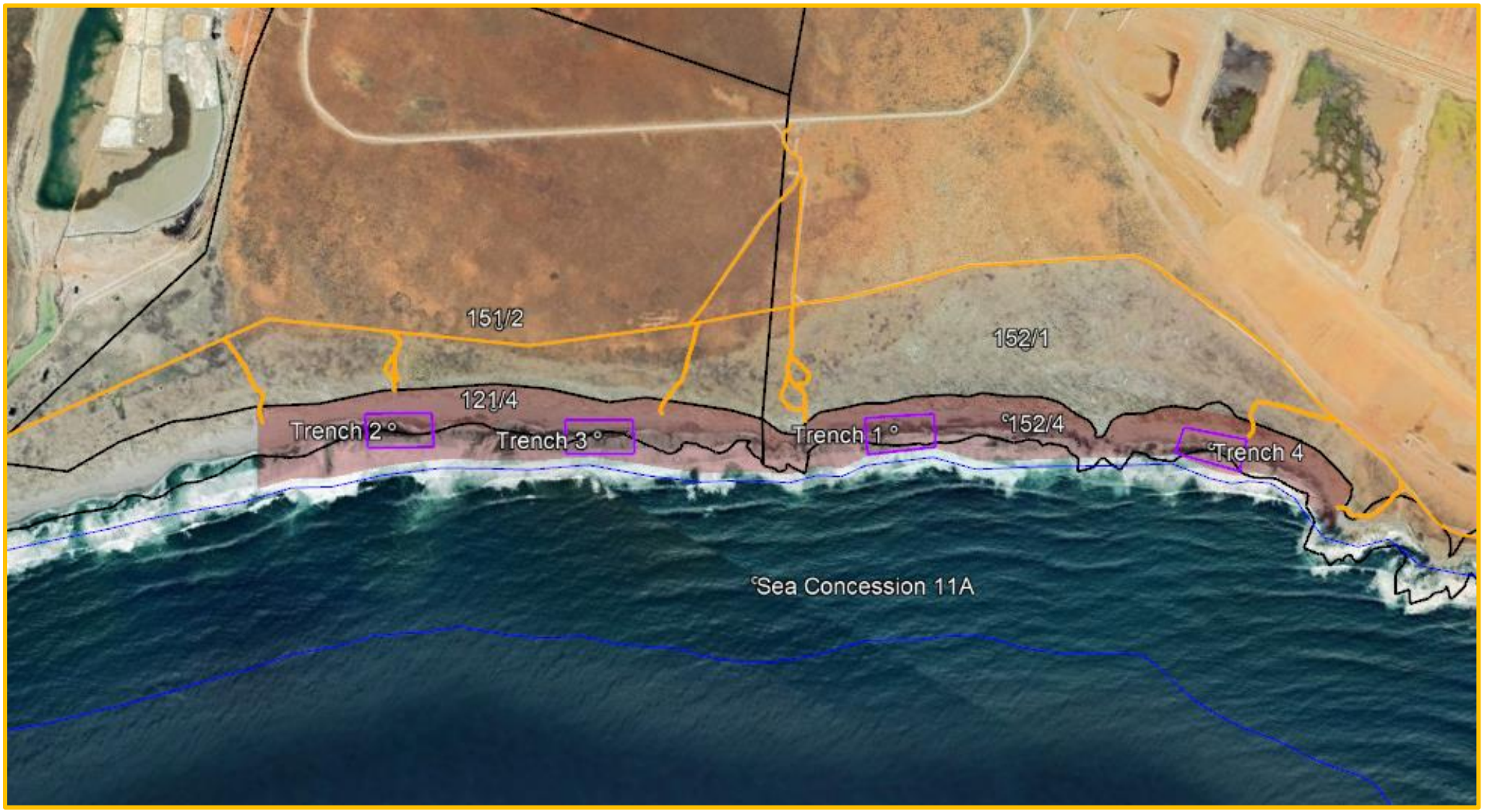

Figure 4: View of prospecting area with proposed trenches, existing access roads, equipment parking area and processing plant container.

Table 2: Bulk Sampling Activities

ACTIVITY		DETAILS
Number of pits/trenches planned		Estimated 4 bulk samples until 20000 tons concentrates has been processed
Dimensions of excavations	Number of excavations	Length Breadth Depth
	4	300m 150m 10m
Locality		The sample sites will be developed perpendicularly to the low tide line or paleo beach. Refer to Figure 4 for estimated positions to be finalized during Phase 2
Volume Overburden (Waste) per bulk sample area		45 000m² X 10m deep = 450 000m³
Volume Ore per bulk sample area		45 000m² X 5m = 225 000m³ Infield screening (remove 99% fines and oversize from gravel) for immediate backfill Concentrate remaining = 2 250m³
Density Overburden		25 000m³ X SG of 2 = 50 000 tons
Density Ore		2 500m³ X 2SG = 5000 tons
Phase(s) when bulk sampling will be required		Phase 3
Timeframe(s)		Year 3 and 4

3.1.4 Description of pre-/feasibility studies

The project geologist monitors the program, consolidates, and processes the data and amends the program depending on the results. This is a continuous process throughout the program and continues even when no prospecting is done on the ground. Each physical phase of prospecting is followed by desktop studies involving interpretation and modelling of all data gathered. These studies will determine the manner in which the work program is to proceed in terms of activity, quantity, resources, expenditure and duration. A GIS based database will be constructed capturing all exploration data.

3.2.4 Associated infrastructure

Accommodation will be provided off-site in one of the nearby towns.
Equipment will be transported to site via the existing roads (including gravel and jeep track). No new roads will be required.

No water will be abstracted in terms of section 21(a) of National Water Act, 1998 (Act no. 36 of 1998) and no water reticulation will be laid-on to the mine work area(s) either.

No secondary processing plant and services will be developed on the prospecting area.
A temporary equipment laydown area will be developed at one of the informal campsites used for recreational activities. This is also the area where the earth moving equipment will be parked when not in use and will include secured storage (containerized storage) area and a mobile chemical toilet.
Fuel will be contained in a mobile bowser provided with a bunded parking area.

3.2.5 Decommissioning phase

Planning for closure and restoration from the beginning of an operation makes the process easier; waste can be removed as it is created; excavations and surface disturbance can be planned so that topography restoration is less complicated; and topsoil can be re-used at shorter intervals. The decommissioning and closure phase at the end of the life of the mine will consist of implementing the Final Rehabilitation, Decommissioning and Closure Plan that will form part of the final EIR. Rehabilitation is carried out on a continuous basis as part of the annual rehabilitation plan. The rehabilitation work will be conducted under the supervision of an ECO and will be monitored continuously, with annual environmental audits conducted by an independent accredited person to help ensure effective restoration and rehabilitation.

Post prospecting topography for sampling areas will follow the original landform shape. Rehabilitation will involve backfilling the small pits and this will be assisted by the action of high tides and storm events. The operation will not create any overburden or fine residue dumps. No water reticulation will be laid-on to the mine work area(s) either. No secondary processing plant and services will be developed within the prospecting area and no offices and accommodation will be provided on-site.

Table 3: Summary of proposed prospecting activities

Phase	Activity	Skill(s) required	Timeframe	Outcome
1	Non-invasive Literature Study Imagery Analysis Geological Mapping Geophysical	Project Manager Geologist	Month 1-12	Maps, plan & report on previous work. Delineation of potential gravel resource.
2	Preliminary evaluation Prospecting Pits	Project Manager Geologist	Month 13-30	Diamond Ore Characterization (DOC) study for metallurgical purposes
3	Evaluation phase Bulk sampling (Trenching)	Project Manager Geologist	Month 31-48	Diamond Ore Characterization (DOC) study for metallurgical purposes and to allow the sufficient recovery of diamonds for evaluation and foot printing purposes.
4	Final analysis, quality control, database update and resource statement	Project Manager Geologist Economist	Month 49-54	Feasibility study and decision making if results prove negative then decommissioning and final closure if results prove positive then continue with mining
5	Application for mining right or final decommissioning and closure	Project Manager	Month 55-60	Mining right or Closure certificate

4. Applicable listed activities

Table 4: Applicable listed activities

NAME OF ACTIVITY	Aerial extent ha or m²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	WASTE MANAGEMENT
The operation directly relates to prospecting of a mineral resource (diamonds) and requires a prospecting right in terms of section 16 of the MPRDA • Refer to Figure 1, 2 and 3: Mine Layout • Accessing the site via existing tracks and access roads to the area. • Bulk sampling trenches will be developed as shown in Figure 3 • After samples are completed the trench will be backfilled immediately for security and safety reasons before the project moved to the next trench position. • Sea water from make-up in the trench will be used used during screening process. • No Tailings and Fine residue (slimes) dumps will be created. • Refuse collection containers and mobile ablution facilities to be provided as part of the mobile containerized processing plant.	Total Prospecting Area ±121Ha	X	**Item 20 of GN. R. 983 of 2014 (as amended),** *i.e.,* **"***Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the MPRDA, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the prospecting right*"	N/A
This operation requires permission in terms of Section 20 of the MPRDA for the removal and disposal of bulk samples of any minerals. The applicant requires 4500-5000 tons concentrate for processing from each sample to obtain a representative sample for sufficient statistical analysis to complete a resource statement and to determine a grade (CPHT).	Total footprint of all Bulk samples ±18Ha Total volume of all Bulk samples for immediate backfill ±270 0000m³.	X	**Item 19 of GN. R. 984 of 2014 (as amended)** *i.e.,* "*The removal and disposal of a mineral, which requires a permission in terms of section 20 of the MPRDA, as well as any other applicable activity as contained in Listing Notice 2, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the permission"*_____	N/A
The continuous establishment and reclamation of temporary stockpiles resulting from activities which require a prospecting right	Total volume of all Bulk samples for immediate backfill ±270 0000m³.	X	N/A	**Item 15 in Category A of GN. R. 633** *i.e.*, "*The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a*

				prospecting right or mining permit in terms of the Mineral and Petroleum Resources Development Act. 2002 (Act No. 28 of 2002)". GN.R. 632 (dated 24/07/2015): Regulations regarding the Planning and Management of Residue Stockpiles and Residue Deposits from a Prospecting, Mining, Exploration or Production Operation
OTHER ACTIVITIES (Associated infrastructure not considered to be listed activities) Processing area with containerized processing plant, Storage Facilities, Waste Management Facilities and Ablution Facilities Storage of fuel for equipment in mobile fuel bowser provided with bunded parking area.	< 0.5ha <80m^3	Not listed	NA	NA

4 POLICY AND LEGISLATIVE CONTEXT

Table 5: Applicable Legislation and Guidelines

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.
Constitution of South Africa, specifically everyone has a right; a. to an environment that is not harmful to their health or wellbeing; and b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that: i. prevents pollution and ecological degradation; ii. promote conservation; and iii. Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.	Prospecting right with bulk sampling activities	The proposed prospecting and bulk sampling activities will be conducted in such a manner that significant environmental impacts are avoided, where significant environmental impacts cannot altogether be avoided, the impacts will be minimised and mitigated in order to protect the environmental right of South Africans.
Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) [MPRDA] Section 24 (as amended) **MPRDA Regulations as amended by GN R. 349 of 18 April 2011.**	Application to the DMR for a prospecting right in terms of Section 22.	If the application for prospecting rights with bulk sampling is approved, the conditions and requirements attached to the prospecting right approval will be complied with during prospecting. The DMR is the Competent Authority for the application.
National Environmental Management Act, 1998 (Act No. 107 of 1998) (as amended) [NEMA]	Application to the DMR for Environmental Authorisation in terms of the EIA Regulations, 2014 (as amended)	An Application for Environmental Authorisation must be submitted to the DMR for an Environmental Authorisation. The listed activities that are triggered by this application make it a requirement that this application follows the Scoping and Environmental Impact Reporting process. An environmental authorisation must be obtained before the proposed prospecting work can be commenced with. The compilation of this Draft Scoping Report and the Public Participation Process being conducted is required in terms of the EIA Regulations of 2014 (as amended).
National Environmental Management: Waste Act, (Act 59 of 2008) [NEMWA] (as amended) **Listed waste management activity in GN R. 921 (dated 29/11/ 2013)** **Regulations regarding the planning and management of residue stockpiles and residue deposits from a prospecting, mining, exploration or production operation in GNR 632 of 24 July 2015.**	Application to the DMR for a waste management licence in terms of the NEMWA	An application for a waste management licence must be submitted to the DMR for a waste management licence. The listed waste management activity triggered determines the application process to be followed. The applicable listed waste management activity has been included in Table 4.
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) [NEMBA] National list of ecosystems that are threatened and in need of protection, 2011 (in	Section 9	There are no Critically Endangered, Endangered or Vulnerable ecosystems identified on the proposed site itself. The proposed site consists of land

GN 1002 dated 2 December 2011)		located between the high-water mark of the sea and the low water mark of the sea and land that is devoid of vegetation.
National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004). National Dust Control Regulations in GN R. 827 of 1 November 2013	Section 9	Dust control measures will be included in the EMPr
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	Section 9	A Palaeontological Impact Assessment and an underwater Heritage Impact Assessment have been conducted and these will be submitted to Heritage Western Cape as part of the public consultation process. Sensitive areas will be identified as no-go areas during sampling and all required mitigation measures and will be included in the EMPr
Land Use Planning Act, 2014 (Act No. 3 of 2014) (LUPA)	Land use permitting application to Matzikama Local Municipality.	Consent use may be required from the Matzikama Local Municipality before the proposed prospecting activities can be conducted on properties that are zoned Agriculture. The municipality will be invited to comment on the application.
Municipal Plans and Policies		
Standards, Guidelines and Spatial Tools		
Mining and Biodiversity Guideline: 2013 Mainstreaming biodiversity into the mining sector. Pretoria.	Section 5.1 & 8.1.9 Figure 5	The mitigation measures to address and mitigate the potential impacts of the proposed prospecting for alluvial diamonds and bulk sampling will be included in the EMPr.
DEA Guideline on Need & Desirability (2017)	Section 5.7	Refer to Section 5.7
DEA Guideline on PPP DMR Guideline on Consultation with Communities and I&APs (undated)	Section 7, Table 6 & **Appendix B**.	Refer to Section 7 & Table 6 and **Appendix B** (to be completed in FSR)
DEAT Integrated Environmental Management Information Series 5: Impact Significance (2002)	Section 8	To be included in the EIR phase.
DEAT Integrated Environmental Management Information Series 7: Cumulative Effects Assessment (2004)	Section 8	To be included in the EIR phase.
SANBI BGIS databases (www.bgis.sanbi.org)	Baseline environmental description and Figures 1 to 5	Used during desktop study to check for sensitive environments within and close to the proposed site.
SANS 1929:2005 Edition 1.1 – Ambient Air Quality Limits for Common Pollutants	Management and monitoring measures	Standard for dust fallout. Dust mitigation measures will be included in the EMPr.

In addition to the foregoing, the Applicant must also comply with the provisions of other relevant conventions and legislation, which includes, amongst others, the following:

International Conventions

- United Nations Convention on Law of the Sea, 1982 (UNCLOS);
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Convention) and the 1996 Protocol (the Protocol); and
- Convention on Biological Diversity (1992).

Other South African Legislation

- Dumping at Sea Control Act, 1980 (No. 73 of 1980);
- Hazardous Substances Act, 1983 and Regulations (No. 85 of 1983);
- Marine Living Resources Act, 1998 (No. 18 of 1998);
- Marine Traffic Act, 1981 (No. 2 of 1981);
- Marine Pollution (Control and Civil Liability) Act, 1981 (No. 6 of 1981);
- Marine Pollution (Prevention of Pollution from Ships) Act, 1986 (No. 2 of 1986);
- Marine Pollution (Intervention) Act, 1987 (No. 65 of 1987);
- Maritime Safety Authority Act, 1998 (No. 5 of 1998);
- Maritime Safety Authority Levies Act, 1998 (No. 6 of 1998);
- Maritime Zones Act 1994 (No. 15 of 1994);
- Mine Health and Safety Act, 1996 (No. 29 of 1996);
- National Environmental Management: Integrated Coastal Management Act, 2008 (No. 24 of 2008);
- National Environmental Management: Protected Areas Act, 2003 (No. 57 of 2003)
- National Heritage Resources Act, 1999 (No. 25 of 1999);
- Occupational Health and Safety Act, 1993 (No. 85 of 1993) and Major Hazard Installation Regulations;
- Sea-Shore Act, 1935 (No. 21 of 1935);
- Sea Birds and Seals Protection Act, 1973 (No. 46 of 1973);

5 NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

6 NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

Mining and Biodiversity Guidelines (2013)

The Mining and Biodiversity Guidelines (2013)[1] state that: "Sustainable development is enshrined in South Africa's Constitution and laws. The need to sustain biodiversity is directly or indirectly referred to in several Acts, not least the National Environmental Management: Biodiversity Act (No. 10 of 2004) (hereafter referred to as the Biodiversity Act) and is fundamental to the notion of sustainable development. International guidelines and commitments as well as national policies and strategies are important in creating a shared vision for sustainable development in South Africa."

The DMR, as custodian of South Africa's mineral resources, is tasked with enabling the sustainable development of these resources. This includes giving effect to the constitutional requirement to "prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development"[2].

The primary environmental objective of the MPRDA is to give effect to the "environmental right"[3] contained in the South African Constitution. The MPRDA further requires the Minister to ensure the sustainable development of South Africa's mineral resources, within the framework of national environmental policies, norms, and standards, while promoting economic and social development.

The Mining and Biodiversity Guidelines (2013) document identifies four categories of biodiversity priority areas in relation to their biodiversity importance and implications for mining. The categories of relevance to this application for alluvial diamonds prospecting and bulk sampling as shown in Figure 6 are: Category B: Highest Biodiversity importance – highest risk for mining and Category C: High Biodiversity Importance – high risk to mining.

These categories have since been super-ceded by the Critical Biodiversity Area (CBA) map (Section 9), which would be interpreted as Category B is now CBA 1, Category C is now CBA 2 and Category D is now Ecological support areas. These categories basically require an EIA process to address the issues of sustainability.

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

[2] Constitution of the Republic of South Africa (No. 108 of 1996).

[3] Section 24 of the Constitution states that "everyone has the right (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that: prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

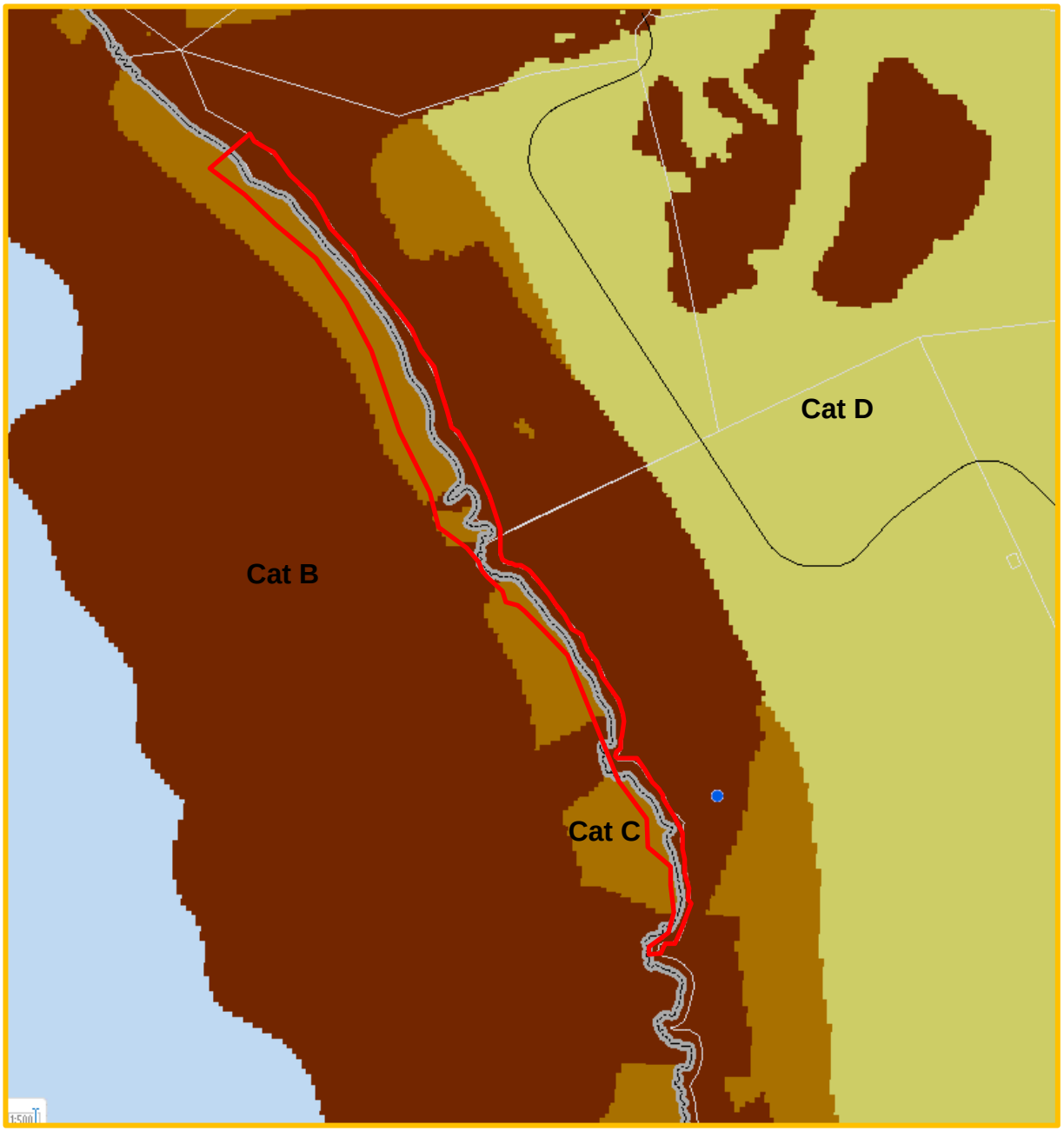

Figure 5: Location of Prospecting area in terms of Mining and Biodiversity Guidelines (sourced off SANB BGIS Map Viewer)

Employment benefits

The proposed prospecting with bulk sampling is a temporary land use, and the proposed site will be rehabilitated in accordance with the Final Closure, Decommissioning and Rehabilitation Plan, attached as Annexure 1.

The benefits of the project can be divided into social and economic classifications.
In terms of employment opportunities and job security, the proposed alluvial diamonds prospecting and bulk sampling activities will not per se generate much in the form of employment opportunities. However, should the prospecting with bulk sampling activities prove that a feasible resource mineral is present to allow for mining, a new mine may be developed which would generate extensive employment opportunities in an area where a great need exists for employment opportunities.

West Coast District Municipality IDP

The West Coast District Municipality extends over an area of 31 099 km2 and has a total population of 464 056 inhabitants and 122 074 households (Table 5). The district includes five local municipalities (Matzikama, Cederberg, Bergrivier, Saldanha Bay, and Swartland) which all have access to the Atlantic Ocean as well as the N7 national road (with the exception of Saldanha municipality) (WCDM, 2021). The population consists of 50.3% female and 49.7% male, with three predominant population group; Coloured (66.58%), Black African (16.36%), and White (15.71%) communities.

Most of the populations' first language is Afrikaans (83.67%) followed by IsiXhosa (8.58%), English (3.98%) and other indigenous languages (IsiNdebele, Sesotho, and Setswana).

The WCDM population dependency ratio is quite high (45.9%) with 68% in the working age group (15-64 years), followed by the young (25%, 0-14 years) and the elderly group (7%, 65+ years). A high dependency ratio puts greater strain on people who are part of the workforce to support their economic dependents (children and elderly people). A higher dependency ratio also means greater pressure on social systems and the delivery of basic services. The level of education in the WCDM is relatively low, with a literacy rate was 79.1% (lower than the average of the Western Cape's 87.2% and slightly lower than the rest of South Africa 80.9%) (Socio Economic Profile West Coast District Municipality). The dropout rate for high school learners (Grades 10 to 12) within the West Coast local municipalities varied from 23.2% to 33%. These high levels of dropouts were influenced by socio-economic factors such as teenage pregnancy, availability of no-fee schools and unemployment (Socio Economic Profile West Coast District Municipality). The average income in the WCDM fall within three ranges: no income (10.5%), R1 to R9 600 per annum (5.3%) and R9 601 to R76 400 per annum for which most of the population can be categorised (57.8%). There were 183 969 people employed in the WCDM in 2018, which constitutes 7.1% of the total employment in the Western Cape. The WCDM experienced an average annual increase of 3 480 jobs over the period 2014-2018, with the Swartland municipality generating the most employment opportunities of 1 146 in the last year, conversely to Matzikama and the Bergriver municipality which only created some 546 jobs. In 2019, the WCDM experienced a loss of 389 jobs, which will have a significant impact on the WCDM economy if this trend continues.

The WCDM experienced the slowest economic growth in the Western Cape between 2005-2013, averaging 3.0% (WCDM 2021). In contrast, the province showed a growth rate of 6.8% over the same period. The West Coast experienced strong growth in its construction (6.2%) and commercial services (6.1%), which include wholesale and retail trade, catering and accommodation; transport, storage and communication; and finance, insurance, real estate and business services sectors (WCDM 2021). The sectors that experienced a reduction over the 2005-2013 period was the agriculture (0.3%), manufacturing (0.3%) and other sectors (3.0%). The general government and community, social and personal (CSP) services sector in the West Coast experienced a steady 2.8% growth. The largest sectors in the West Coast economy in 2013 were the finance, insurance, real estate, and business services (27%), manufacturing (017%), agriculture, forestry and fishing (14%) and wholesale and retail trade, catering and accommodation services (13%) (WCDM 2021). The agriculture, forestry and fishing sector were the primary source of employment, with 70 060 jobs in 2018, contributing 38.1% to total employment in the WCDM. However, the agriculture, forestry and fishing sector contributed the most to the WCDM employment in 2018 (38.1%, or 70 060 jobs).

Table 6: Demographic profile summary of the West Coast District Municipality and Strandfontein

Indicator	West Coast District	Strandfontein
Population Total	391 766	431
Household Total	106 781	92
Area (km²)	31 118.6	4.18
Population group		
Coloured (%)	66.58	14.8
Black African (%)	16.36	50.6
White (%)	15.71	33.2
Indian or Asian(%)	0.56	0.9
Other (%)	0.79	0.5
Gender distribution		
Male (%)	49.7	51.4
Female (%)	50.3	48.6
First language		
Afrikaans (%)	83.67	69.4
English (%)	3.98	3.2
IsiXhosa (%)	8.58	22.6
Setswana (%)	0.63	0
Dependency ratio	45.9	18.1
Average annual income		
No income		10.9
R1 – R9 600 (%)		3.3
R9 601 – R76 400 (%)		47.8
R76 400–R614 400 (%)		38

The vision of the West Coast District Municipality IDP is: "Weskus the caring centre for innovation & excellence."

The West Coast District Municipality's (WCDM) Integrated Development Plan 2017 – 2022 notes that it has "a vast number of mineral resources, of which some are currently not being exploited" and deems that "mining could potentially make an increased economic contribution to the WCDM economy when these unexploited resources are utilised in future".

The Mission Statement is:

- Promote drivers of change, by leading well-coordinated and innovative initiatives to achieve sustainable and integrated development of West Coast;

The Strategic Objectives are

- Care for the social wellbeing, safety, and health of all our communities.
- Promote regional economic growth and tourism
- Co-ordinate and promote the development of bulk and essential services and transport infrastructure
- Foster sound relationships with all stakeholders, especially local Municipalities
- Maintain Financial Viability and Good Governance

Values

- Integrity- accountability and ethics to the citizens.

- Transparency- to be transparent and open in our business.
- Loyalty- putting the organisation first.
- Respect- will treat public and colleagues with fairness, respect, and consideration.
- Quality- achieving or exceeding measurable standards.
- Ownership- taking pride in our work.
- Teamwork- working together to achieve our goals.

Matzikama Local Municipality IDP

The Matzikama municipality's area of jurisdiction is situated on the north-west coast of the Western Cape and borders the Northern Cape Province (Kamiesberg municipality in the north and Hantam municipalities in the east), the Atlantic Ocean on the west, and the Western Cape (Cederberg municipality) in the south (WCDM 2021). The municipality consist of 18 towns, with three coastal settlements (Doringbaai, Papendorp, and Strandfontein) and several small inland towns which serves as agriculture service centres (Ebenhauser, Lutzville, and Koekenaap) (MM 2019; WCGPT 2018). Matzikama municipality is defined by an arid environment with a flourishing natural irrigation system sustained by the Olifants River. The Olifants River (Vanrhynsdorp Government Scheme) consist of 237 km canals and supply water for several towns, industrial and domestic waste, local agriculture, and irrigation (DWS 2019). Most of the economic activities are concentrated in the south of the municipality, with Vredendal being the largest town and primary economic node (WCGPT 2018). The agriculture sector is largely attributed by the viniculture industry and combined with the forestry and fishing sector contributed the most towards Matzikamas municipal GDP and employment in 2018 (Mayson et al., 2020; MM 2019). The agriculture, forestry and fishing sector employed approximately 25 492 people in 2014 consisting of a mixed workforce of semi-skilled and unskilled workers (PGWC 2018). Matzikama's real GDPR per capita in 2018 was R39 000 which is considerably lower than most surrounding municipalities, including the WCDM (at R59 000). Matzikama municipality real GDPPR decreased between 2018 and 2019 by 2.5%, in addition to a low GDP growth rate of 2.1% over the period 2008-2017, which is 0.3% less than the WCDM average growth rate (WCDM 2021; MM 2020). It is estimated that the Matzikama municipality experienced its largest decline in its annual GDP growth rate in 2019 (4%) when compared to the GDP growth rate between 2014 and 2018 (MM 2021/22). It is anticipated that the COVID-19 pandemic will worsen Matzikama's local economy as a decline in economic performance has already been observed since 2018. A further reduction in municipal revenue, unemployment in the private sector, land grabs for informal housing and the stagnation of development programs is likely to occur in 2021. (MM 2021/22).

Western Cape Provincial Spatial Development Framework (PSDF)

The aim of the Western Cape Spatial Development Framework (PSDF) is to:

- gives spatial expression to the national and provincial development agendas,
- serve as a basis for coordinating integrating and aligning on the ground delivery of national and provincial departmental programmes,
- support municipalities to fulfil their municipal planning mandate in line with the national and provincial agendas, and
- communicates government's spatial development intentions to the private sector and civil society."

The Goals of the PSDF is to take the Western Cape on a path towards:

- more inclusivity, productivity, competitiveness, and opportunities in urban and rural space-economies;
- better protection of spatial assets (e.g., cultural, and scenic landscapes) and strengthened resilience of natural and built environments; and
- improved effectiveness in the governance of urban and rural areas."

The rural economy includes but is not limited to farming; fishing and aquaculture; mining; forestry; commodity processing and servicing; eco and agri-tourism; outdoor recreation and events; infrastructure and service delivery; and diverse natural resource related activities (e.g., extraction, rehabilitation, harvesting, etc.). Agriculture is going through a difficult transition period with its traditional export market in recession, escalating pressure on operating margins (i.e., input costs escalations exceed commodity price increases), more stringent international and national compliance requirements, and instability in the labour market as well as the after effects of an unprecedented drought.

DEA Guideline on Need and Desirability

As referenced in the DEA Guideline on Need and Desirability (2017), NEMA defines "evaluation" as "the process of ascertaining the relative importance or significance of information, in the light of people's values, preferences and judgements, in order to make a decision." In evaluating each impact (negative and positive) in terms of each of the aspects of the environment, "need and desirability" must specifically be considered in the analysis of each impact of the proposed activity. However, to determine if the proposed activity is the best option when considering "need and desirability" it must also be informed by the sum of all the impacts considered holistically. In this regard "need and desirability" also becomes the impact summary regarding the proposed activity.

These Guidelines state that: "In considering the impact summary it must be remembered that ultimately the aim of EIA is to identify, predict and evaluate the actual and potential risks for and impacts on the geographical, physical, biological, social, economic and cultural aspects of the environment, in order to find the alternatives and options that best avoid negative impacts altogether, or where negative impacts cannot be avoided, to minimise and manage negative impacts to acceptable levels, while optimising positive impacts, to ensure that ecological sustainable development and justifiable social and economic development outcomes are achieved".

The **principles of Integrated Environmental Management (EIM)** as set out in Section 2 of the NEMA have been considered in this application for environmental authorisation as is explained below.

- **Environmental management placing people and their needs at forefront of its concern, and serve their physical, physiological, developmental, cultural, and social interests equitably** – This process is being undertaken in a transparent manner and all effort has been made to involve all the relevant stakeholders and I&APs. Public participation is being undertaken for I&APs to raise issues / concerns / comments for taking into account in the process.
- **Socially, environmentally, and economically sustainable development** – All aspects of the receiving environment and how these will be impacted have been considered and will be investigated to ensure a minimum detrimental impact to the environment. Where the impact cannot be avoided, suitable and effective mitigation measures have been proposed to ensure that the impact is mitigated, and these are detailed and included in the EMPr.
- **Consideration for ecosystem disturbance and loss of biodiversity** – the proposed site includes areas identified as CBA. The vegetation type that exists on the proposed site is not listed in the "National List of Threatened Ecosystems that are Threatened and in Need of Protection" in GN 1002 dated 9/12/2011. Ecosystem disturbance and loss of biodiversity will be included in the impact assessment. The EMPr and the Final Rehabilitation, Decommissioning and Closure Plan (Closure Plan) will include mitigation measures for minimising the impacts of the operation on the environment.
- **Pollution and environmental degradation** – The recommendations for impact avoidance and mitigation received form specialist professionals and received during the public participation process will be detailed in the EMPr, and Closure Plan to help minimise potential environmental degradation.

- **Landscape disturbance** – All aspects of the receiving environment and how this is likely to be impacted have been considered and will be investigated to help ensure minimal negative impact to the environment. Where the impact cannot not be avoided, suitable and effective mitigation measures will be detailed in the EMPr and Closure Plan to ensure that the impacts are mitigated.
- **Waste avoidance, minimisation, and recycling** – These aspects have been considered and will be incorporated in the EMPr and the Closure Plan.
- **Responsible and equitable use of non-renewable resources** – These aspects have been considered and there is currently not much scope in the proposed development for reducing reliance on non-renewable resources, e.g., the usage of vehicles that rely on petrol or diesel transport.
- **Avoidance, minimisation, and remedying of environmental impacts** - All aspects of the receiving environment and how this will be impacted have been considered and investigated to ensure a minimum detrimental impact to the environment. Where the impact could not be avoided, suitable and effective mitigation measures will be proposed to ensure that the impact is mitigated. The required mitigation measures will be included in the EMPr and the Closure Plan.
- I**nterests, needs and values of Interested and Affected Parties** – The Scoping and EIR process is being undertaken in a transparent manner and all effort is being made to involve all the relevant stakeholders and I&APs. All the comments received on this Draft Scoping Report and the responses of the EAP thereto will be included in the Scoping Report.
- **Access to information** – Potential I&APs and the commenting authorities have been notified that the Draft Scoping Report is available for comment.
- **Promotion of community well-being and empowerment** – This process is being undertaken in a transparent manner and all effort is being made to involve all the relevant stakeholders and registered I&APs.

The potential impacts on the biophysical environment and socio-economic conditions will be assessed, and steps been taken to avoid or at least mitigate the potential negative impacts and to enhance the positive impacts. Adequate and appropriate opportunity is being provided for partaking in the public participation process. Environmental attributes have been considered based on the available information and environmental management practices have been identified and will be implemented to ensure that the proposed activities will proceed in accordance with the principles described in Section 2 of the NEMA.

7 DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PREFFERED SITE, ACTIVITY & ALTERNATIVE

Process to Reach the Proposed Preferred Alternative

With reference to the site plan showing the location of the proposed activities on the proposed site, details are provided of the alternatives considered with respect to:

(a) the type of activity to be undertaken;
(b) layout of the activity;
(c) the technology to be used in the activity;
(d) the operational aspects of the activity; and
(e) the option of not implementing the proposed development.

Appendix 2 in Section 2 (h)(i) of the EIA Regulations, 2014 (as amended), requires that all S&EIR processes identify and describe feasible and reasonable alternatives. Alternatives considered during screening phases of the project are described below.

Site alternatives

The proposed site has been selected based on the existing historical prospecting and production records of the area and on the results of designated research. The results of previous exploration work indicate a series of small but very promising target areas across the proposed site that are probably linked to paleo channels and raised marine beaches within the area.

Having considered the above and the fact that the proposed site is also located relatively close to existing diamond mines, the proposed alluvial diamonds prospecting with bulk sampling is likely to yield results that warrant the eventual establishment of on-site diamond mining operations.

In light of the above, it was deemed unwise to spend time considering other site alternatives and so the proposed site is the only site alternative considered

Type of Activity

The proposed site has been selected based on the existing historical prospecting and production records of the area and on the results of designated research. The results of previous exploration work indicate a series of small but very promising target areas across the proposed site that are probably linked to paleo channels and raised marine beaches within the area.

Having considered the above and the fact that the proposed site is also located relatively close to existing diamond mines, the proposed alluvial diamonds prospecting with bulk sampling is the only activity alternative considered in addition to the ‘no-go’ alternative.

Design or Layout of Activity

The proposed prospecting with bulk sampling is contemplated only between the low and the high-water mark of the sea, making the proposed site a narrow strip of land. In view of this space limitation and the need to avoid disturbing the on-site vegetated areas, the only layout alternative considered is the layout alternative described in detail in Section 3 of this Draft Scoping Report.

Technology Alternatives

The relatively soft and shallow beach sand on the proposed site makes the use of excavators and the other equipment described in Section 3 more cost-effective than any other technology The technology detailed in Section 3 is therefore the only technology alternative considered.

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The No-go Alternative

The ‘no-go’ alternative entails keeping the existing land use on the land parcels that constitute the proposed site unchanged. The land is zoned Agriculture but is disused, as no agricultural activity takes place on the thereon. The proposed site is instead used informally by campers to set up informal recreational campsites.

The no-go alternative also means that the proposed prospecting with bulk sampling would not take place and so the potential and feasibility diamond mining on the proposed site would remain uncertain. In such a situation, the possibility will not come into existence of a future investment in a diamond mine on the proposed site and the potential socio-economic benefits of mining, e.g., mining-related employment opportunities that would otherwise have become available would never materialise.

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8 PUBLIC PARTICIPATION PROCESS

Introduction

The public participation process being followed is in accordance with the requirements specified in Regulation 41 of the EIA Regulations, 2014 (as amended). The complete details of the public participation process conducted on the Draft Scoping Report, including copies of comments received and responses made thereto will be included in the Scoping Report

Commenting period on Draft Scoping Report

I&APs have been notified in writing that the Draft Scoping Report is available for public participation for a commenting period of at least 30 days via electronic mail correspondence in which the internet link for downloading the report is included. The electronic mail correspondence includes notification that the report is also accessible on the website of EnviroAfrica.

Site notices, pamphlets and a newspaper advertisement have also been used to notify I&APs of the availability of the Draft Scoping Report and the report has also been made available on the website of EnviroAfrica. It has been specified in all the said notices that the commenting period ends on 16 February 2024.

Summary of Issues Raised by I&APs

This table has been completed following comments received on the Draft Scoping Report.

Table 7: Summary of Issues Raised by I&APs

Interested and Affected Parties **List the names of persons consulted in this column, and** **Mark with an X where those who must be consulted were in fact consulted.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
AFFECTED PARTIES					
Landowner					
Lawful occupier/s of the land					
Landowners or lawful occupiers on adjacent properties					
Municipal Councillor					

Municipality					
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA					
N/A					
Communities					
N/A					
Dept. Land Affairs					
N/A					
Traditional Leaders					
N/A					
Dept. Environmental Affairs & Nature Conservation					
Other Competent Authorities affected					
Dept. Water & Sanitation					
Dept. Agric., Land Reform & Rural Development					
OTHER AFFECTED PARTIES					
Million Rise Trading (Pty) Ltd					
INTERESTED PARTIES					
Mr. Annas van der Merwe Legal advisor for farm owners					

9 THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE PROJECT SITE

Type of Environment Affected by the Proposed Activity

9.1.1 Regional Setting

The proposed site is located on Portions 4 of the Farm Graauw Duinen No. 152 and the Farm Rietfontein Extension No. 151, Vanrhynsdorp, This is south of the Sout River and north of Brand se Baai along the west coast. The proposed site is remote, with the nearest formal community of Koekenaap located more than 50km south-east of the proposed site. The nearest town, Lutzville is located approximately 63km south-east along the R363 Regional Road.

According to the Screening Tool Report, two wind energy developments and no solar energy far ms exist within 30km of the proposed site and no intersections with Environmental Management Framework areas exist. The area inland of the proposed site comprises livestock farms (sheep) and coastal environment utilized for ad hoc recreation. Salt mining is taking place more than 1km to the north of the proposed site, with large scale strip mining and beach mining to the south and east.

This proposed prospecting with bulk sampling will concentrate mostly on the current exploration results of Trans Hex as part of their Concession 11A and Surf Zone exploration. Some of the results on recovery of diamonds for these areas were made available, showing the possible continuation of resource availability from the low to the high-water mark of the sea.

Most of the tracks providing access to the beach exist as a result of informal camping and Kelp collection.
The small size of the proposed prospecting and bulk sampling has resulted in no new infrastructure being contemplated on the proposed site and existing tracks will be utilised.
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9.1.2 Landscape and Land Use

The proposed site and surrounding area are characterised by undulating topography sloping gently towards the west. The inland area is covered with vegetated sand dunes aligned in a north to south manner.

The proposed site is zoned Agriculture, but no agricultural activity takes place thereon. The proposed site is instead used informally by campers to set up informal recreational campsites.

The areas inland from the proposed site are used as range for livestock to graze. The other landuses in the vicinity of the proposed site include salt mining as well as well as diamond mining.

9.1.3 Geology and Soils

The geology of the study area is complex with a diversity of metamorphic formations and sedimentary and igneous rock types. The most prominent and resistant are volcano-sedimentary metamorphites and gneisses of the mid-Protozoroic Namaqualand Metamorphic Complex and the limestones, dolomites and phylites of the Pan-African Gariep Supergroup (AEMCO, 2016).

The study area is underlain by unconsolidated and semi-consolidated sediments of Quaternary age. These sediments overlie meta-sediments of the Vanrhynsdorp Group, the metamorphic rocks of the Namaqualand Metamorphic Complex (NMC), as well as granites and dykes of the Koegel Fontein Complex (KFC) (Figure 7).
Unconsolidated and/or semi-consolidated sediments overlying the basement rock formations comprise:

- Dune deposits;
- Littoral (shoreline) deposits;
- Alluvial deposits (associated with the presence of preferential flow paths in the basement); and
- Wind transported deposits.

The sands decrease in age in a westward direction towards the coast. Prevailing soils are yellow-red-brown silty sands of Pleistocene origin, often overlain by a calcrete layer varying in depth and compaction. Windblown sands overlie the calcrete layer and have a high sodium level due to the proximity to the sea and the presence of salt in the dew precipitates on the soil surface. These high sodium levels make the soil forms unsuitable for crop production, although the natural vegetation is well-adapted to high salinity levels. The unconsolidated nature of the sediment leads to high potential for erosion by runoff and wind.

Exploration of marine alluvial diamonds shows that there are preferential localities in which marine sedimentary deposits have higher probabilities of containing diamonds. These include gullies, potholes, and bedrock depressions, all of which are associated with marine wave-cut terraces. Such bedrock features are key concentration factors, and control all major aspects of sediment deposition in the marine environment. Diamonds are generally found close to the bedrock and are deposited in high-energy environment sediments containing pebbles, cob-bles, and boulders. These sediments commonly owe their existence to storm beach deposits along the base lines of low cliffs and wave-cut terraces. Also, it is upon these surfaces that diamondiferous gravels have been concentrated and redistributed northward by wave and current action during sea-level still stands. Due to numerous sea-level fluctuations, particularly in the Quaternary, multiple terrace development during sequential periods of transgression and regression has resulted in modification of existing terraces and the disruption of the depositional pattern of marine diamonds.

Figure 6a: Regional geology around proposed site

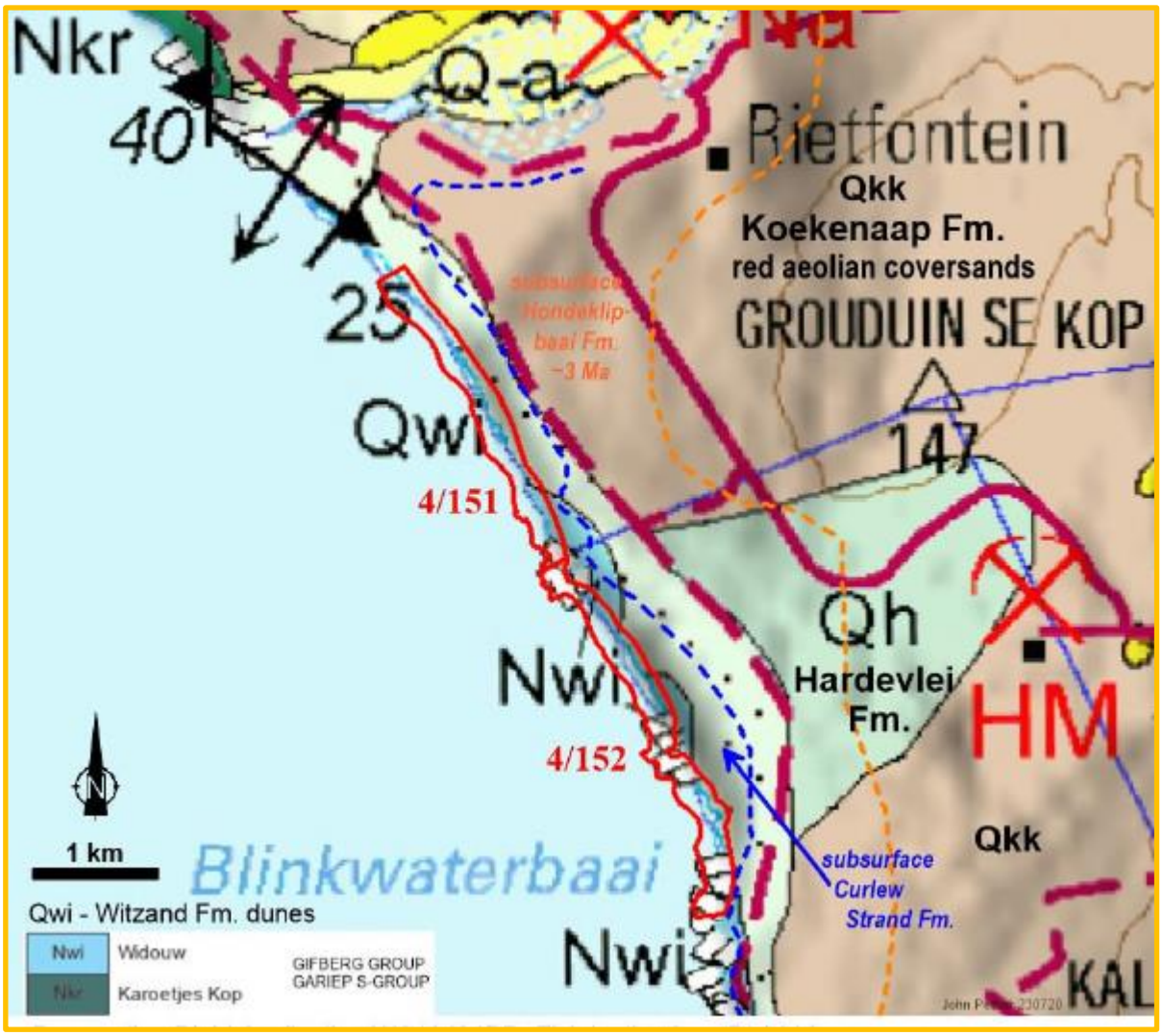

Figure 6b: Surface geology of proposed site with approximate subsurface extent of underlying marine formations

9.1.4 Topography

The geology and topography of the area, together with the semi-arid climate and the proximity to the coast, have determined the basic landscape features and visual elements of the study area. The proposed site and surrounding area is characterised by undulating topography sloping gently to the west. The inland area is covered with vegetated sand dunes aligned north to south. The highest elevation is in the east of the study area gradually decreasing towards the coast in the west. Elevations range from more than 30m above mean sea level (mamsl) along the eastern boundary down to sea level along the western coastal boundary of the study area).

A steep-sided valley system, c.30 km long and c.100 m deep, follows the course of the Sout River estuary on the northern boundary of the mining area. The estuary is a severely degraded system and is currently worked as a saltpan (Golder Associates, 2011).

The coastline is dominated by exposed rocky headlands alternating with fine grained sandy beaches often backed by a rocky and/or sandy escarpment. Wavecut platforms and pebble beaches are absent along this stretch of the coastline. The coastline included in this application form part of the Southern Benguela Ecoregion. The coastline of the study area is characterised by Sandy Shores (S-Shores) and Mixed Shores. Much of the coastline between Hondeklipbaai and the Olifants River mouth comprises sandy shores. Sandy beaches are one of the most dynamic coastal environments. Except for a few beaches in large bay systems (such as St Helena Bay, Saldanha Bay, Table Bay), the beaches along the South African West Coast are typically highly exposed. Exposed sandy shores consists of coupled surf-zone, beach, and dune systems, which together form the active littoral sand transport zone (Short & Hesp 1985).

Three morphodynamic beach types are described: dissipative, reflective, and intermediate beaches (McLachlan et al. 1993). Generally, dissipative beaches are relatively wide and flat with fine sands and low wave energy. Waves start to break far from the shore in a series of spilling breakers that 'dissipate' their energy along a broad surf zone. This generates slow swashes with long periods, resulting in less turbulent conditions on the gently sloping beach face. Reflective beaches in contrast, have high wave energy, and are coarse grained (>500 pm sand) with narrow and steep intertidal beach faces. The relative absence of a surf-zone causes the waves to break directly on the shore causing a high turnover of sand. Intermediate beach conditions exist between these extremes.
There are 64 estuarine systems along the West Coast between the Orange River and Cape Agulhas (SANBI 2018) of which approximately 75% are 'Critically Endangered' or 'Endangered', while 13% are considered 'Vulnerable'.
Numerous smaller estuaries along the West Coast are intermittently, or seasonally open (Holgat, Buffels, Swartlintjies, Bitter, Spoeg, Groen, Brak, Sout and Jakkals Rivers). The nearest estuary to the study area is the Sout River 1km to the north.

9.1.5 Slope

See Section 9.14 above.

9.1.6 Climate

Graauw Duinen and Rietfontein Extension is in an arid environment with average temperatures of approximately 16°C. In the coldest months of the year (May to August) temperatures below 10°C are often recorded. The highest temperatures are reached from December to January (may well exceed 30°C). The maximum recorded temperature was 42.5°C in March 2017 and the minimum temperature was 4.6°C recorded in July 2016 (Council for Scientific and Industrial Research meteorological station at Brand se Baai, 2011 – 2018 data). The site and its surrounds experience hot dry summers and very low rainfall winters. The area receives rain throughout the year, with most of it occurring between the months of May and August (Figure 10). The mean annual rainfall from 1993 to 2018 was c.140 mm/a, although it is evident that the years since 2013 have been dominated by dry weather patterns which caused the drought experienced in the region.
One of the major contributors to precipitation in the area is fog, which contributes up to 252.9 mm/a over 100 days of the year (Anglo American Corporation, 1990).
According to Mucina and Rutherford 2006, winter-rainfall climate with irregular rain events occurring mostly from May to August and almost always no rain between November and February. MAP of 115 mm. Dew is experienced throughout the winter and frosts hardly occur.

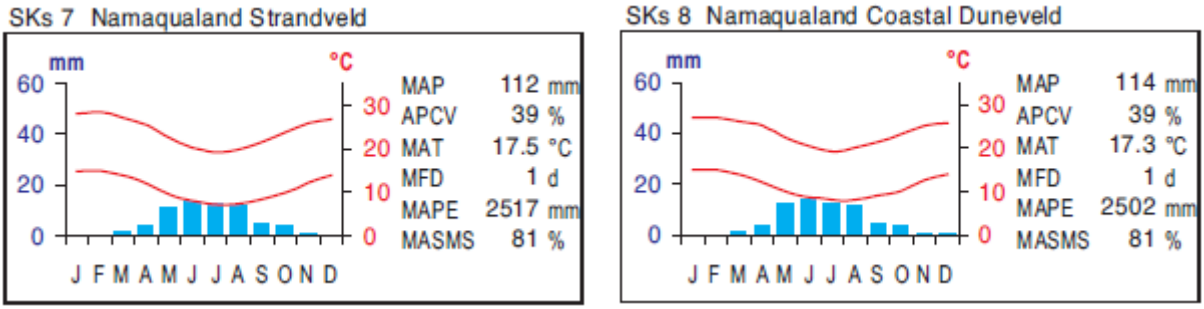

Figure 7: Climate diagram (Mucina and Rutherford 2006)

This section is based on desktop information sourced from Air Quality Impact Assessments completed for strip mining operations adjacent to the proposed site, mainly Airshed, 2018.

9.1.7 Air Quality

This section is based on desktop information sourced from Air Quality Impact Assessments completed for strip mining operations adjacent to the proposed site, mainly Airshed, 2018.

Criteria pollutants are considered those pollutants most commonly found in the atmosphere, that have proven detrimental health effects when inhaled and are regulated by ambient air quality criteria. These generally include carbon monoxide (CO), nitrogen dioxide (NO2), sulphur dioxide (SO2), Particulate Matter (PM) and ground level ozone (O3). In determining ambient air quality, concentrations of pollutants are measured and/or modelled and compared against air quality standards.

These standards are intended to protect human health and environmental degradation and, as such, focus on emissions perceived to pose a health or environmental risk.
The National Ambient Air Quality Standards (NAAQS) and additional standards for particulate matter less than 2.5 µm in aerodynamic diameter (PM2.5) are provided in Table 9. These standards are based on international best practices and aim to protect human health and indicate safe exposure levels for most of the population throughout an individual's lifetime, including the very young and the elderly.

Table 8: National Ambient Air Quality Standards

Pollutant	Averaging Period	Concentration (µg/m³)	Permitted Frequency of Exceedance	Compliance Date
SO_2	10 minutes	500	526	Immediate
	1 hour	350	88	Immediate
	24 hour	125	4	Immediate
	1 year	50	0	Immediate
Benzene	1 year	5	0	1 January 2015
CO	1 hour	30000	88	Immediate
	8 hour(a)	10000	11	Immediate
Lead	1 year	0.5	0	Immediate
NO_2	1 hour	200	88	Immediate
	1 year	40	0	Immediate
O_3	8 hour(b)	120	11	Immediate
$PM_{2.5}$	24 hour	40	4	1 January 2016 till 31 December 2029
	24 hour	25	4	1 January 2030
	1 year	20	0	1 January 2016 till 31 December 2029
	1 year	15	0	1 January 2030
PM_{10}	24 hour	75	4	1 January 2015
	1 year	40	0	1 January 2015

The National Dust Control Regulations (NDCR) prescribe general measures for the control of dust. The standard for acceptable dustfall rates is set out in Section 9.4.1 for residential and non-residential areas. According to these regulations, the dustfall that originates from this project cannot exceed 1 200 mg/m²/day beyond the boundary of the study area considering the permitted frequency of exceeding dust fall rate of two within a year, not sequential months. In addition to the dust fall limits, the NDCR prescribe monitoring procedures and reporting requirements.

The air quality of the study area is mostly influenced by activities at the Tronox Namakwa Sands' MSP, farming activities, domestic fires, vehicle exhaust emissions and dust entrained by vehicles. These emission sources vary from activities that generate relatively coarse airborne particulates (such as farmland preparation, dust from unpaved roads and the Tronox Mine) to fine particulate matter (PM) such as that emitted by vehicle exhausts, diesel power generators and dryers. Other sources of PM include occasional fires in the residential areas of Koekenaap, Lutzville, Vredendal and farm activities.
Emissions from unpaved roads constitute a major source of emissions to the atmosphere in South Africa. Dust emissions from unpaved roads are a function of vehicle traffic and the silt loading on the roads. Emissions generated by wind erosion are dependent on the frequency of disturbance of the erodible surface.

Prospecting activities will take place in a very remote area between the low-water mark and high-water mark and dust generation will be limited to a small radius around the operation and no sensitive receptors was identified. The impact of dustfall from this small prospecting operation is regarded as insignificant in relation to the large-scale strip-mining operation, where specialist studies concluded the simulated 24-hour average dustfall rates do not exceed the NDCR non-residential limit of 600 mg/m²-day

9.1.8 Noise

The proposed site is surrounded by farmland with typical, low noise levels. Along the coast, noise generated by wave action is likely to result in higher-than-normal ambient noise levels, especially during rough sea conditions. Traffic-generated noise in the area is low (estimate at ±55dBA). Noise from earth moving equipment and machinery associated with the prospecting operation will be within the norm and due to the remote locality of the operation will have no impact. There are very few noise receptors in the area with the nearest receptors the large scale strip-mining direct inland of this operation that generate much higher noise levels.

Typical noise levels generated by various types of construction equipment are listed in the table below.

Table 9: Noise levels likely from construction equipment

Equipment	Typical operational Noise level at given offset (dBA)							
	5m	10m	25m	50m	100m	250m	500m	1000m
Air compressor	91	85	77	71	65	57	51	46
Crane (mobile)	93	87	79	73	67	59	53	47
Dozer	95	89	81	75	69	61	55	49
Pump	86	80	72	66	60	52	46	40
Rock Drill	108	102	94	88	82	74	68	62
Trucks	87	81	73	67	64	60	57	54

In South Africa, the noise impact on human receptors is evaluated in terms of the SANS 10103 guidelines for sound pressure levels as listed in the table below.

Table 10: Noise levels expected in different areas

Type of District	Equivalent continuous rating level for ambient noise - dBA					
	Outdoors			Indoors with windows open		
	Day-night	Daytime	Night	Day-	Daytime	Night-
Rural districts	45	45	35	35	35	25
Suburban district	50	50	40	40	40	30
Urban traffic	55	55	45	45	45	35
Urban districts	60	60	50	50	50	40
Central business district	65	65	55	55	55	45
Industrial district	70	70	60	60	60	50

**Daytime refers to 06h00 to 22h00 and nighttime refers 22h00 to 06h00*

9.1.9 Biodiversity

The proposed site includes portions of the Cape Seashore Vegetation regarded as least threatened. According to the National Protected Areas Expansion Strategy (NPAES) Department of Environment Affairs (DEA) 2009 the area is not included in the NPAES, with the closest focus area as the Knersvlakte Nature Reserve which is located approximately 55km from the proposed site. No protected areas are located within a 10km radius of the proposed site. The Elephant Rock Island Reserve ("Robben Island") is the nearest declared protected area managed by CapeNature and is located more than 10km south of the proposed site.

Regarding sensitive terrestrial ecosystems according to the Western Cape Biodiversity Spatial Plan 2017 most of the area classified as Critical Biodiversity Area (CBA1) with small sections classified as Ecological Support Areas 1 (ESA1) and Ecological Support Areas 2 (ESA2).

The surf zone included in this application forms part of the Southern Benguela Ecoregion. The coastline of the study area is characterised by Sandy Shores (S- Shores), Rocky Shores (R- Shores) Mixed Shores, and Estuaries (Figure 17). These were categorised into ecosystem types by Sink et al. (2019) and assigned a threat status depending on their geographic extent and extent of ecosystem degradation.

Some of the proposed site has been categorised as Mixed Shore with a threat status of 'vulnerable.' Due to the exposed nature of the coastline in the study area, most beaches are categorised as Intermediate Sandy Shore with a threat status of 'Near Threatened' reflecting the condition of the ecosystem types following decades of shore- and vessel-based diamond mining.

The National Coastal and Marine Spatial Biodiversity Plan comprises a map of Critical Biodiversity Areas (CBAs), Ecological Support Area (ESAs). The study area overlaps with areas mapped as Critical Biodiversity Areas Natural and Critical Biodiversity Areas Restored.

Figure 8: Project footprint (yellow polygon) in relation to Sensitive Terrestrial Ecosystems also indicating target areas

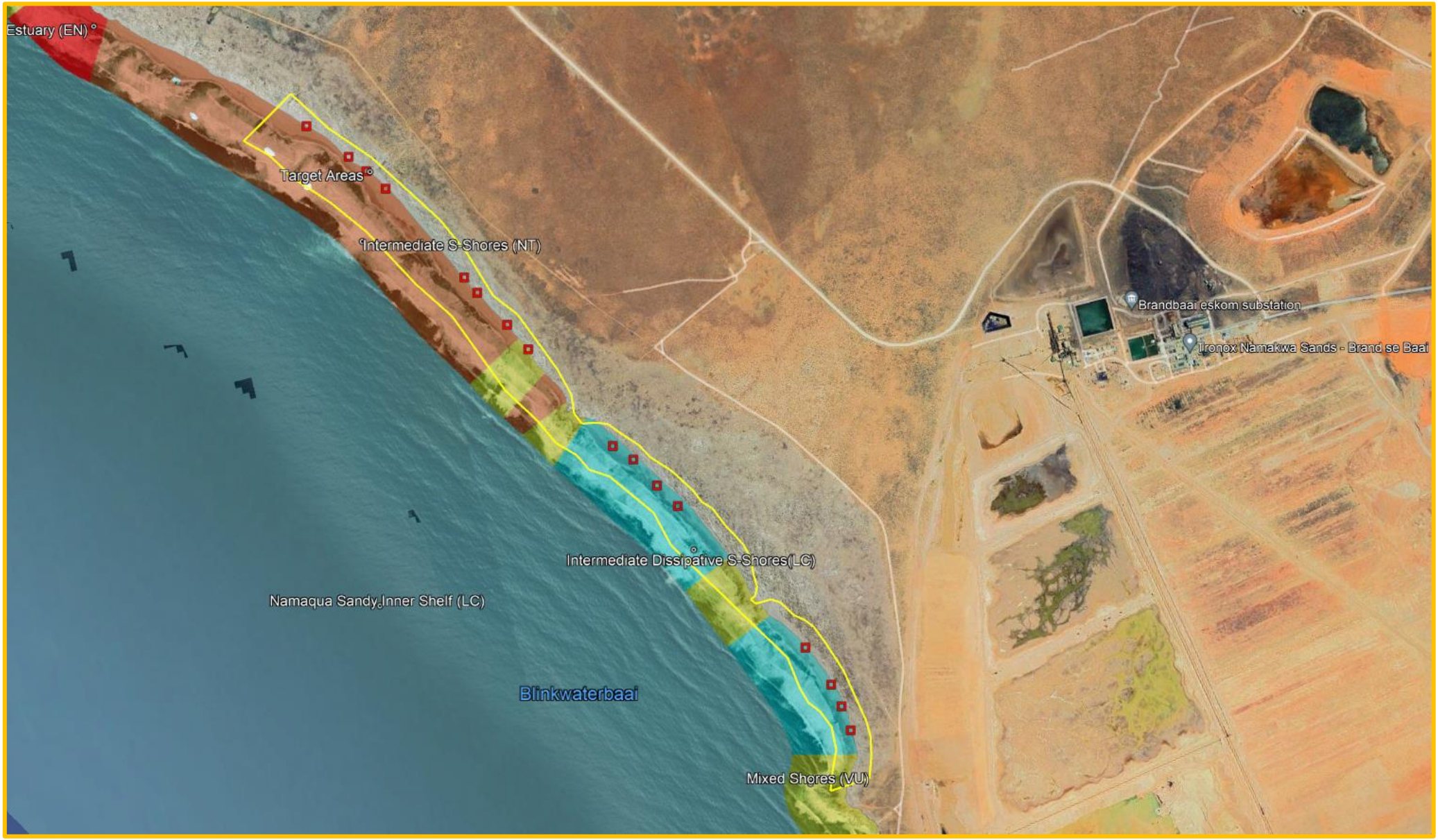

Figure 9: Proposed site (yellow polygon) in relation to Sensitive Coastal Ecosystems also indicating target areas

Figure 10: Project footprint (yellow polygon) in relation to Critical Terrestrial Biodiversity Areas

Figure 11: Project footprint (yellow polygon) in relation to Critical Marine and Coastal Biodiversity Areas

According to the Screening Tool Report, less than 20% of the area is regarded as very high sensitivity regarding Terrestrial Biodiversity as it is located within Critical Biodiversity Areas and Ecological Support Areas.

The CBA map of the area also indicates that most of the area falls within Marine CBAs. These areas have been designated as CBAs to promote coastal resource protection and to maintain ecological processes associated with the coastal strip, especially the ability of fauna to move along the coast. Although CBAs confer no rights and have no official conservation status in law, they provide an indication of ecological status (biodiversity). This does not mean that CBAs need to be fenced off from human use, but rather that they should be supported by good planning, decision-making and management to ensure that human use does not impact on the condition of the ecosystem.

Table 11: Terrestrial biodiversity Theme Sensitivity Features

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	ESA 2: Restore from other land use
Very High	ESA 1
Very High	CBA 1: Terrestrial
Very High	CR_Namaqualand Seashore Vegetation

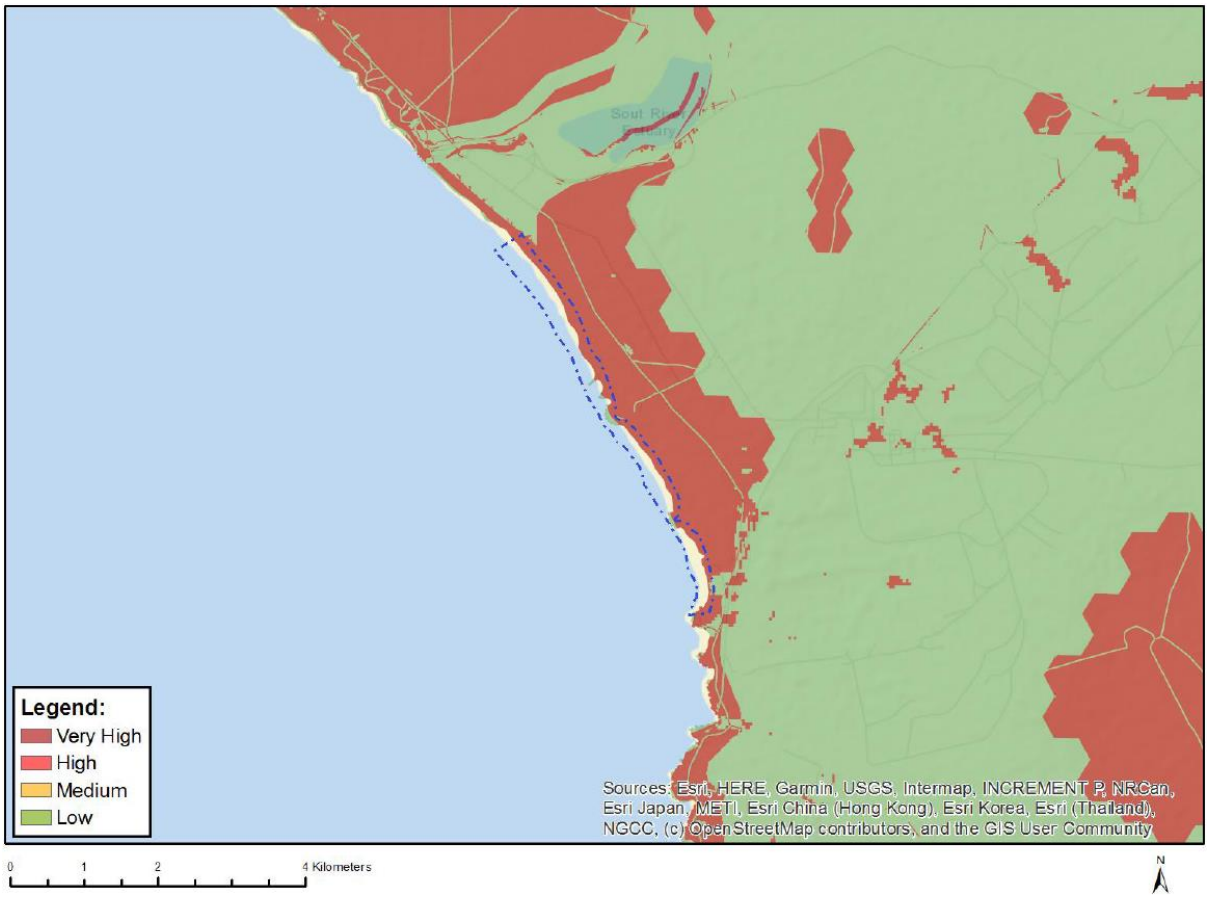

Figure 12: Map of relative terrestrial biodiversity theme sensitivity

9.1.9.1 **Vegetation**

According to the national vegetation map (Mucina and Rutherford, 2006) the vegetation along the shore is classified as Namaqualand Seashore Vegetation now listed as critical endangered also used as a criterion for the very high sensitivity regarding terrestrial biodiversity in the screening tool. According to Mucina and Rutherford, 2006 Namaqualand Seashore Vegetation occurs on slightly sloping beach, coastal rocky formations supporting sparse vegetation composed partly of succulent hummock-forming and spreading dwarf shrubs and herbs on the beach, in shell beds and on low dunes. The site visit has however shown steep sloping dunes without coastal rocky formations and vegetation structure more compatible with Cape Seashore vegetation. Skowno et al. 2019 as part of fine scale planning for the Western Cape Biodiversity Spatial Plan therefore define this vegetation as Cape Seashore vegetation regarded as least threatened. The Olifants River was regarded as the original boundary between the Namaqualand and Cape Seashore Vegetation in the south but Skowno et al. 2019 put the southern boundary between the two vegetation types to just north of the provincial boundary.

Due to the relatively low vegetation cover of the Seashore vegetation and the high winds along the coast, they are considered vulnerable to disturbance and easily mobilised. Increased sand movement due to disturbance caused by access roads as well as increased sand input from the beaches due to beach mining activities would potentially affect this community and monitoring of the stability of these areas especially along the access roads to the beaches will be a priority.

The Screening Tool Report only identifies 12 SCC, none of which are listed species and legally protected in terms of the listed threatened or protected species (TOPS) regulations in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004). Most of the SCC listed is regarded as Vulnerable according to the IUCN Red List with only *Ruschia bipapillata, Otholobium incanum, Oncosiphon schlechteri* and Sensitive Species 1156 regarded as Endangered according to the IUCN Red List.

Although there are some listed species present in this study area, the overall abundance of such species within the site is low and a high impact on listed plant species is not likely as work above the high-water mark will not take place. Studies has shown that the study area is fairly homogenous and similar habitat is broadly available in the area. Less than 5ha will temporary be disturbed by sampling and will cover the area below the high-water mark. The project will have a medium significant impact regarding Flora due to the small areas to be disturbed and short duration of activities. Mitigation of the disturbance is also possible and after mitigation the impact will be regarded as low significance.

According to the Screening Tool Report the area is regarded as medium sensitivity regarding Plant Species. The SSVR agrees with this sensitivity rating.

Table 12: Plant Species theme Sensitivity Features

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Ruschia bipapillata
Medium	Otholobium incanum
Medium	Manulea cinerea
Medium	Sensitive species 1002
Medium	Tetragonia pillansii
Medium	Leucoptera nodosa
Medium	Oncosiphon schlechteri
Medium	Sensitive species 1156
Medium	Argyrolobium velutinum
Medium	Aspalathus obtusata
Medium	Helichrysum dunense
Medium	Muraltia obovata

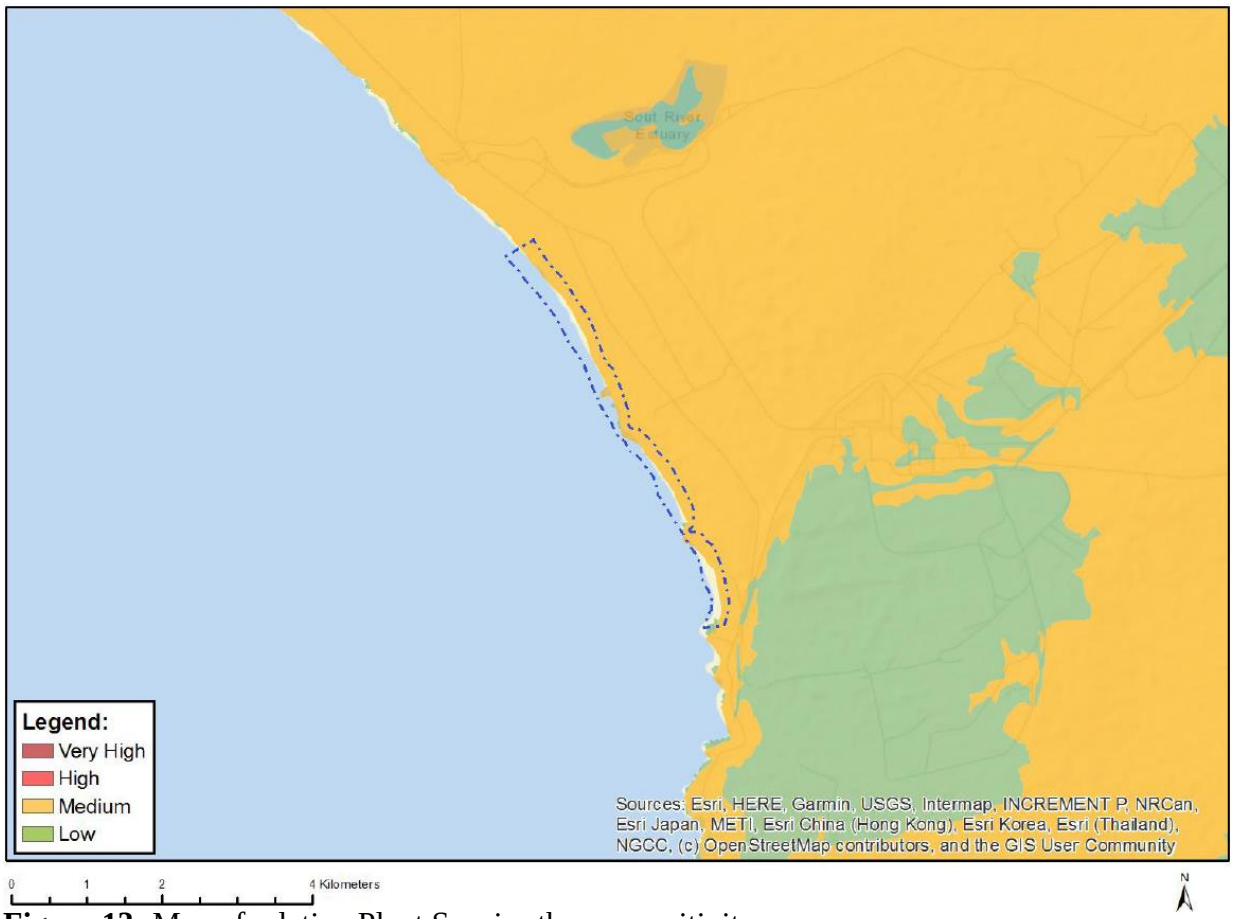

Figure 13: Map of relative Plant Species theme sensitivity

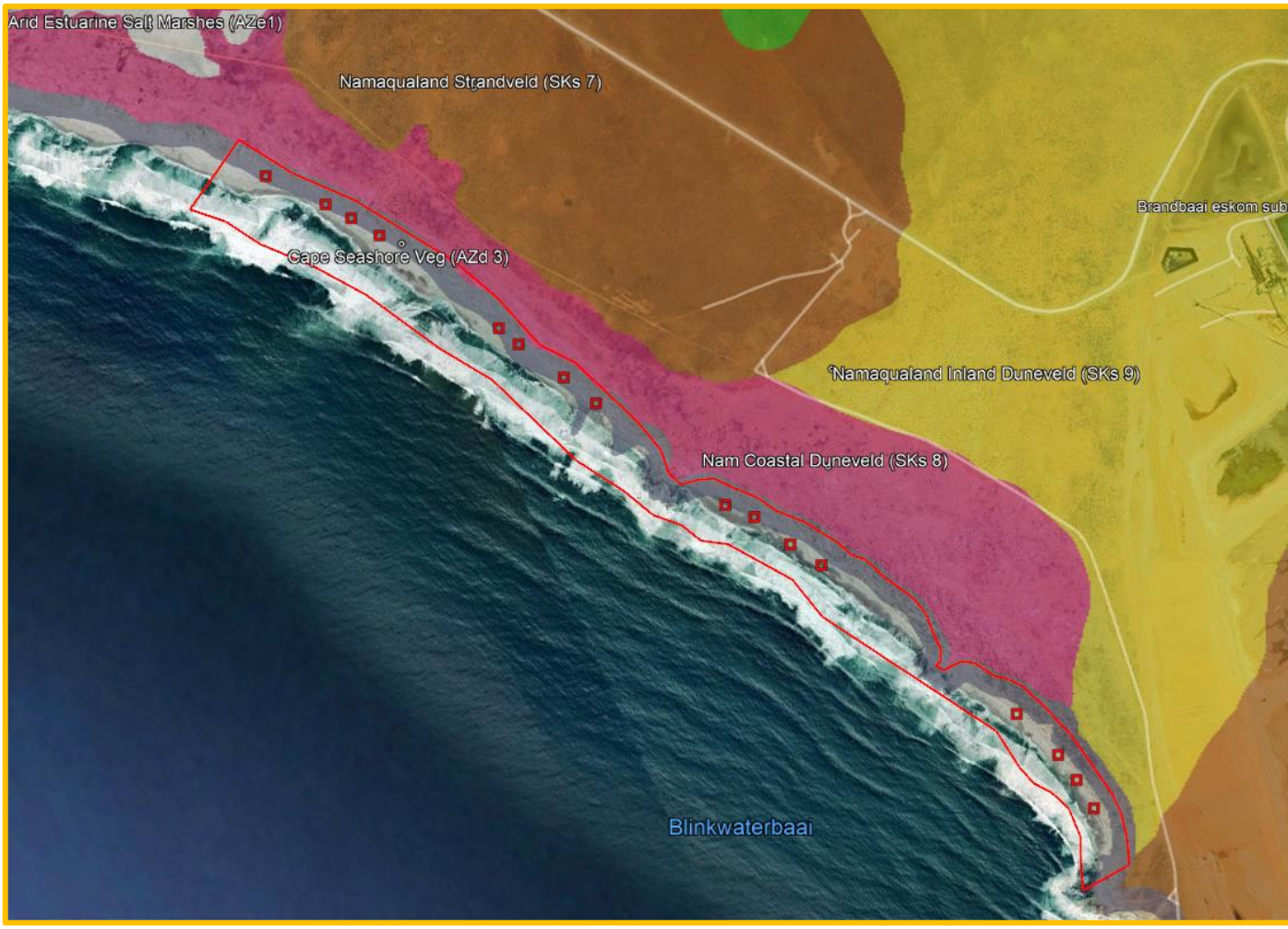

Figure 14: Vegetation types of the proposed site and surrounding area

9.1.9.2 **Fauna**

The relative abundance of the larger mammals is dominated by Steenbok, Common Duiker and Cape Porcupine with Cape Fox and African Wild Cat the most common predators. Several studies done for large scale mining and renewable energy projects has shown there is no significant difference between the mammalian community structure in the study area and the broader area and the range of habitats is similar. The beaches appear to be important for several predators such as African Wild Cat and Black-backed Jackal which regularly visit the beaches to look for carrion.

The Cape fur seal is a resident along the west coast of Africa, occurring at numerous breeding and non-breeding sites on the mainland and on nearshore islands and reefs. The South African population, which includes the West Coast colonies, was estimated at ca. 725,000 individuals in 2020. This is about 40% of the total southern African population, which has previously been estimated at up to 2 million (Seakamela et al. 2022).

There are several Cape fur seal breeding colonies within the broader study area: at Bucchu Twins near Alexander Bay, at Cliff Point (approximately 17km north of Port Nolloth), at Kleinzee (incorporating Robeiland), Strandfontein Point (south of Hondeklipbaai), Elephant Rocks, Paternoster Rocks and Jacobs Reef at Cape Columbine. The closest breeding colony to the study area is at Elephant Rocks 40Km to the south. They are therefore highly likely to be encountered during sampling activities as Seals are highly mobile animals with a general foraging area covering the continental shelf up to 120 nautical miles offshore (Shaughnessy 1979), with bulls ranging further out to sea than females.

According to the South African Reptile Conservation Assessment database and du Preez and Carruthers (2009), the study area falls within the distribution range of at least 58 reptiles, comprising 5 chelonians, 23 snakes, 24 lizards and skinks, 12 geckos and 1 chameleon. Several West Coast endemics are present within the development footprint but only the Sensitive species 32 is listed as SCC as part of the Screening Tool Report and is regarded as Vulnerable in terms of TOPS 2015 list. The Namaqua Sand Frog is common along the west coast as is it is independent of surface water.

The presence of the Avifaunal SCC is the only criteria rendering the study area with a high sensitivity regarding relative Animal Species theme. Approximately 188 terrestrial and coastal bird species have been recorded in the study area and surrounds (including the Olifants River Estuary), based on data obtained from the Southern African Bird Atlas Project. Of this total, 19 species (10%) are considered endemic and 30 (16%) near-endemic to South Africa (Taylor et al., 2015), while 12 species (6%) are listed as Threatened and six (3%) as Near Threatened.

The landscape of the study area represents two primary avifaunal habitats, the interior sandy plains, and the coastal shore. The interior plains of the study area support mostly small passerines (~ 52 species, 65%). While none of these passerines are red listed, 14 species are endemic and 19 near-endemic to South Africa (Taylor et al., 2015). Non-passerines make up a third (35%) of all shrubland species, with the following of particular importance (with red list status): the Endangered Black Harrier *Circus maurus*, the Vulnerable Southern Black Korhaan *Afrotis afra*, and Secretarybird *Sagittarius serpentarius*, and the Near Threatened Kori Bustard *Ardeotis kori*.

No sensitive or unique areas with respect to foraging, breeding, or roosting were identified within the study area, although most of the above red listed species utilise the habitat to varying degrees. There are no terrestrial Important Bird Areas (IBAs), Coordinated Avifaunal Roadcount routes (CAR) or Coordinated Waterbird Count sites (CWAC) near the study area. The nearest IBA is the Olifants River Estuary approximately 40km south, which is also a registered CWAC site.

Approximately 35 bird species are almost exclusively associated with the coastal shore, including cormorants, gulls, terns, oystercatcher, and resident and migratory shorebirds. These are all non-passerine species with a very low incidence of endemism, yet a relatively high number are red listed (9 species, 25%). The most commonly encountered SCC throughout the year include the Endangered Cape Cormorant *Phalacrocorax capensis* and African Black Oystercatcher *Haematopus moquini*. The latter is no longer red listed as numbers have increased by 37% since 1980, while its population has experienced an eastward range expansion (Taylor et al., 2015).

There are no known breeding colonies for any of the three cormorant species near the study area (Taylor et al., 2015). The closest breeding islands to the study area are Bird Island in Lambert's Bay approximately 45 km to the south of the study area.

Regarding the sandy beaches where sampling will be concentrated during this project, the coastal biological communities consist of many hundreds of species, often displaying considerable temporal and spatial variability (even at small scales). No rare or endangered species have been recorded (Awad et al. 2002). The biological communities 'typical' of the surf zone habitats are described briefly below, focusing both on dominant, conspicuous species, as well as potentially threatened or sensitive species, which may be affected by the proposed prospecting activities.

In the southern Benguela, a rich outer turbulent zone (10-33 m from the shore) supports cnidarians (anemones), tube building polychaetes and amphipods; while the less diverse offshore turbulent zone (3-5 m from the shore) is typified by deep burrowing polychaetes and crustaceans. Poor species diversity and abundance, as well as the presence of cumaceans, characterise the inner turbulent part of the surf zone (0-1 m from the shore).

Fish such as galjoen (Dichistius capensis) and white steenbras (Lithognathus lithognathus) frequent turbulent surf zone waters off the West Coast where they swim over submerged beaches at high tide and feed on small crustaceans (Branch 1981). Surf zone habitats, particularly medium to low energy beaches, are in fact widely recognised as important nursery areas for fish (Lenanton et al. 1982; Clark et al. 1996).

The abalone, an important commercial species present in kelp beds south of Cape Columbine is naturally absent north of Cape Columbine. Key predators in the sub-littoral include the commercially important West Coast rock lobster and the octopus. The rock lobster acts as a keystone species as it influences community structure via predation on a wide range of benthic organisms (Mayfield et al. 2000).

Intertidal Sandy Beaches

The composition of their faunal communities is largely dependent on the interaction of wave energy, beach slope and sand particle size, which is termed beach morphodynamics. Dissipative beaches usually harbour the richest intertidal faunal communities and intermediate beach conditions have a very variable species composition (McLachlan et al. 1993; Jaramillo et al. 1995, Soares 2003). This variability is mainly attributable to the amount and quality of food available. Beaches with a high input of e.g., kelp wrack have a rich and diverse drift-line fauna, which is sparse or absent on beaches lacking a drift-line (Branch & Griffiths 1988). Beaches act as filters and energy recyclers in the nearshore environment (Brown & McLachlan 2002).

The upper beach dry zone (supralittoral) is situated above the high-water spring (HWS) tide level, and receives water input only from large waves at spring high tides or through sea spray. This zone is characterised by a mixture of air breathing terrestrial and semi-terrestrial fauna, often associated with, and feeding on kelp deposited near or on the driftline. The mid-beach retention zone and low-beach saturation zone (intertidal zone or mid-littoral zone) has a vertical range of about 2m. This mid-shore region is characterised by the cirolanid isopods, and amphipods of the families Haustoridae and Phoxocephalidae. In some areas, juvenile and adult sand mussels may also be present in considerable numbers.

The surf zone extends from the Low-water Spring mark to about 2m depth. A variety of polychaetes are typical of this zone, although they generally extend partially into the midlittoral above. In areas where a suitable swash climate exists, the gastropod Bullia digitalis may also be present in considerable numbers, surfing up and down the beach in search of carrion. The transition zone spans approximately 2 - 5 m depth beyond the inner turbulent zone. Extreme turbulence is experienced in this zone, and therefore this zone typically harbours the lowest diversity on sandy beaches. The outer turbulent zone extends beyond the surf zone and below 5 m depth, where turbulence is significantly decreased and species diversity is again much higher.

Intertidal Rocky Shores

Several studies on the west coast of southern Africa have documented the important effects of wave action on the intertidal rocky-shore community. Specifically, wave action enhances filter-
feeders by increasing the concentration and turnover of particulate food, leading to an elevation of overall biomass despite low species diversity (McQuaid & Branch 1985; Bustamante & Branch 1995, 1996a; Bustamante et al. 1997). Conversely, sheltered shores are diverse with a relatively low biomass, and only in relatively sheltered embayments does drift kelp accumulate and provide a vital support for very high densities of kelp trapping limpets, that occur exclusively there (Bustamante et al. 1995). In the subtidal, these differences diminish as wave exposure is moderated with depth.

West Coast rocky intertidal shores can be divided into five zones based on their characteristic biological communities: The Littorina, Upper Balanoid, Lower Balanoid, Cochlear/Argenvillei and the Infratidal Zones. These biological zones correspond roughly to zones based on tidal heights. Tolerance to the physical stresses associated with life on the intertidal, as well as biological interactions such as herbivory, competition and predation interact to produce these five zones.

The uppermost part of the shore is the littoral fringe, which is the part of the shore that is most exposed to air, perhaps having more in common with the terrestrial environment and characterised by low species diversity. From the Lower Balanoid zone, biological communities are determined by exposure to wave action.

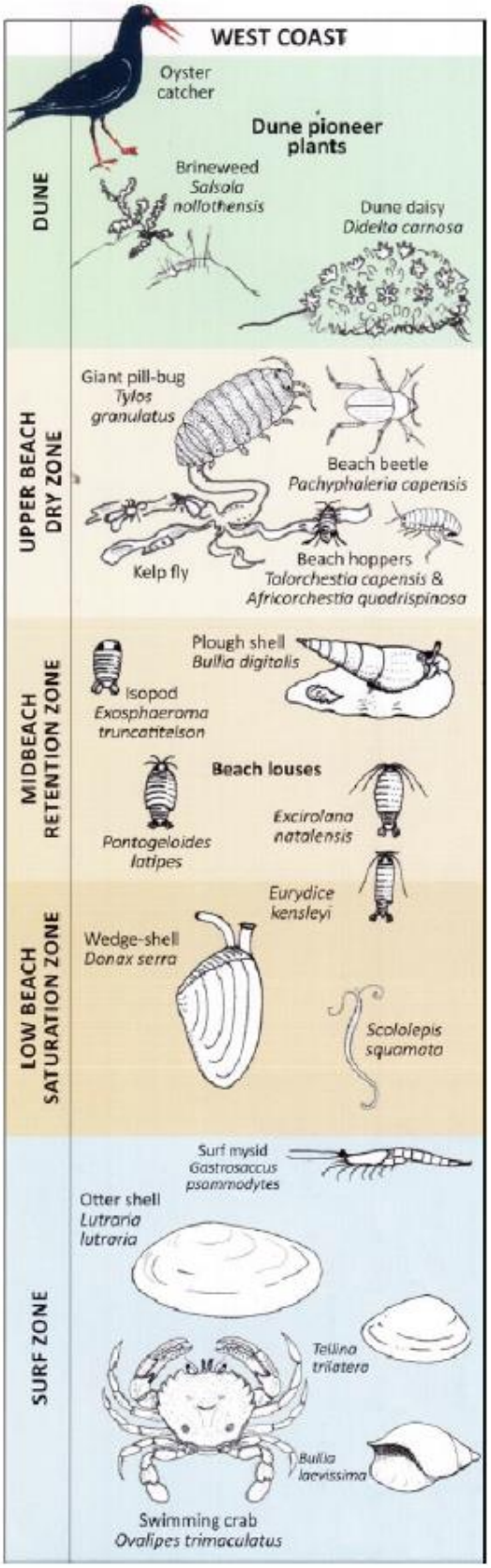

Figure 15: Schematic representation of the West Coast intertidal beach zonation

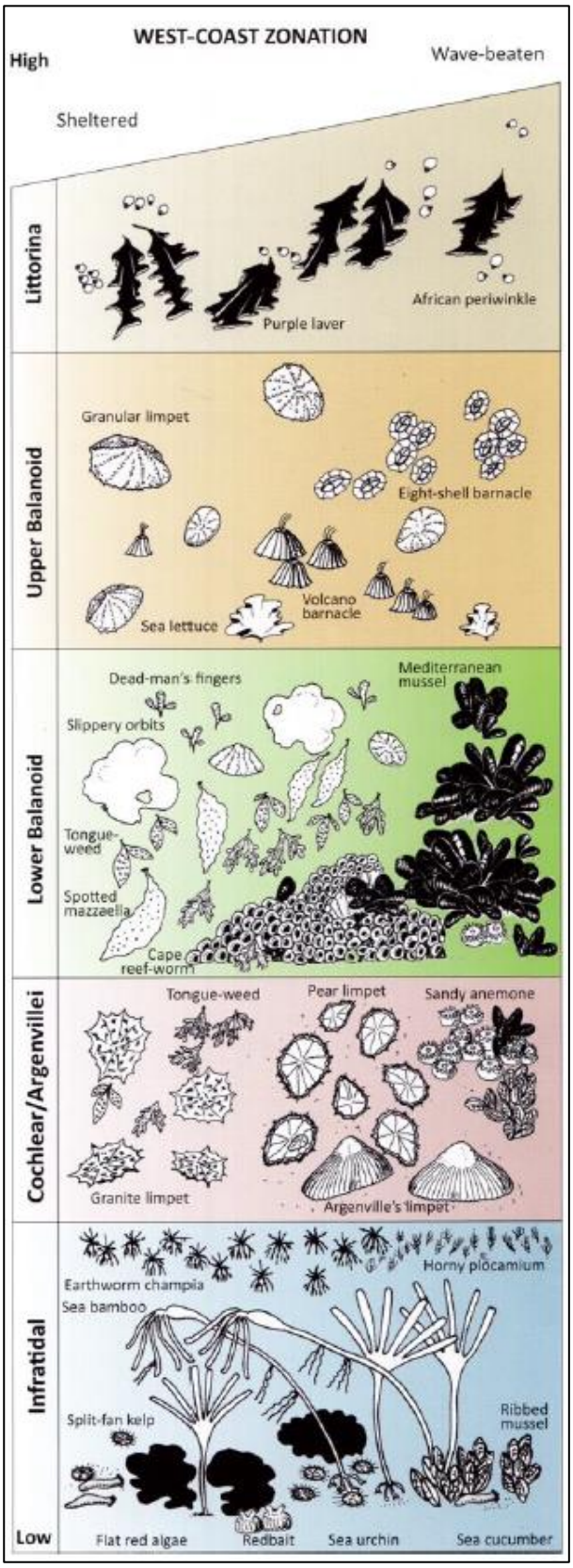

Figure 16: Schematic representation of the West Coast intertidal rocky shore zonation

Several specialist studies complete for the largescale mining and renewable energy projects in and around the study area has shown there is no discernible difference in mammalian community structure and composition inside and outside of the development areas. The resident mammalian fauna appears to be tolerant of mining activities and did not avoid the mining areas to a significant degree. Consequently, the major impact on fauna from the current development is likely to be the temporary loss of less than 5ha coastal habitat, which is of local but not broader significance. As with mammals, impacts on reptiles and amphibians are likely to be restricted largely to habitat loss equivalent to the development footprint.

As sandy beaches are highly dynamic, these habitats are less sensitive to disturbance than rocky shore environments. Sandy beaches are also quicker to recover from disturbance than rocky habitats, with recovery from intensive mining operations being found to occur within two to three years in Namibia (Pulfrich and Branch 2014). Relatively few species occur on sandy beaches in comparison to rocky shores due to the unstable and harsh nature of beaches. Those species that do occur on sandy beaches are hardy and well adapted to life in these environments (Branch 1981).

Sampling activities will have a medium significance impact on these species due to the small areas to be disturbed and short duration of activities. Mitigation of the disturbance is also possible and after mitigation the impact will be regarded as low significance. It must also be noted that less than 5ha mainly sandy beaches will temporary be disturbed by sampling.
According to the Screening Tool Report the prospecting area is regarded as high sensitivity regarding Animal Species, but more than 90% having a medium sensitivity.

Table 13: Animal Species theme Sensitivity Features

Sensitivity	Feature(s)
High	Aves-Circus maurus
Low	Subject to confirmation
Medium	Aves-Afrotis afra
Medium	Sensitive species 32
Medium	Invertebrate-Brinckiella mauerbergerorum

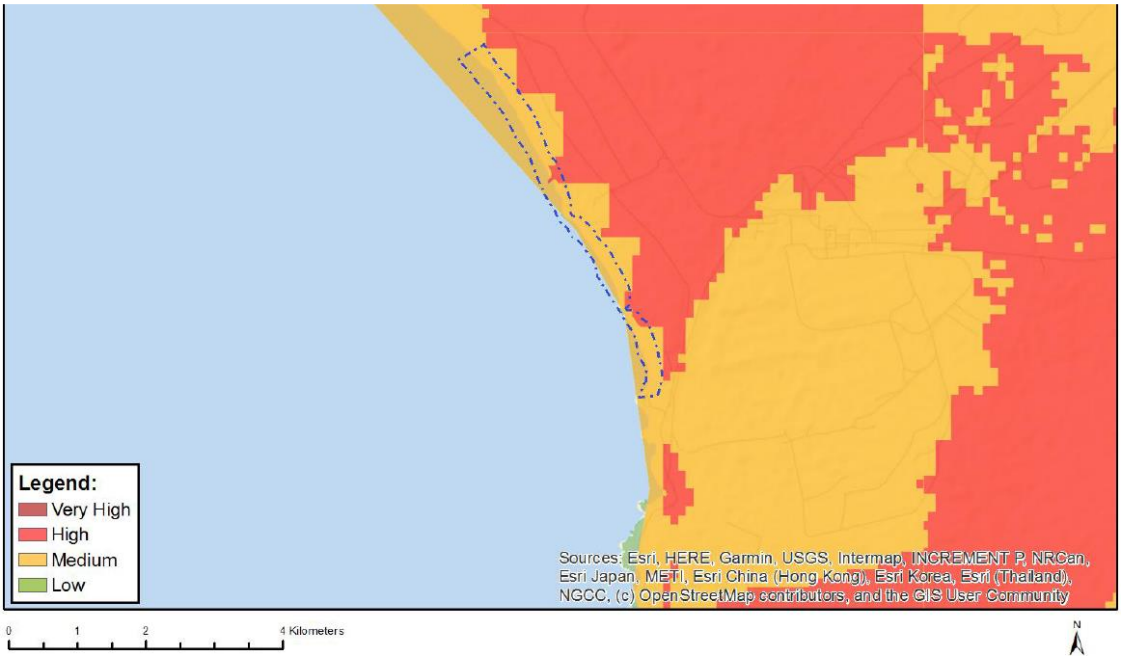

Figure 17: Map of relative Animal Species theme sensitivity

9.1.9.3 Aquatic biodiversity and Water Resources

The study area lies in the Olifants-Doorn Water Management Area (WMA). Within this WMA, the study area falls within DWS's quaternary catchment F60E, comprising a large quaternary without any major rivers. The rivers in the WMA comprise relatively minor systems and have been mapped in the national 1:50 000 river cover as "non-perennial" (i.e., ephemeral) rivers.
The National Ecoregional Classification of Kleynhans et al. (2005) classifies the study area as falling within the Western Coastal Belt Ecoregion. This ecoregion is characterized by plains with low and moderate relief, an altitude between sea level and 700 m amsl and vegetation that comprises primarily Succulent Karoo types (Kleynhans et al. 2005). The ecoregion includes the Olifants, Doring, Sout, Groen, Buffels and western section of the Orange Rivers.
The Sout River flows into the Atlantic Ocean via its estuary, just south of the study area boundary.

The Sout River classified as a NFEPA River (FEPA 3) flows within a clearly defined channel, edged on either side by steep slopes up to the surrounding terrain. It is flat-bottomed and gently sloped, and its course meanders gently towards its estuary, typical of a lowland river. The arid nature of its catchment dictates that the river rarely conveys surface flows. Nevertheless, the channel remains sandy and clear of vegetation, due to low water availability in the landscape.

The PES of the Sout River upstream of its estuary is Category B – largely natural. This reflects a river that is relatively unimpacted, with low levels of alien plant or animal invasion; relatively intact species diversity; low levels of erosion; assumed low levels of abstraction (due to the high natural salinity of the system and the low frequency of flows); and an apparently natural geomorphology, with low levels of geomorphological change (Driver at al. 2011). Wetlands in the surrounding area comprise mainly pans, which are classified by Ollis et al (2013) and identified in NFEPA data as "depressions". However, no wetlands occur in the study area.

The only estuaries close to the study area are the intermittently-open Sout River estuary 1km to the north (Figure 21). A salt processing works has been established in the Sout River estuary, with the result that there has been considerable disturbance to the estuary bed and banks with multiple berms being created to contain water and promote its evaporation (to produce salt). Roads cross the watercourse, often with small single culverts, resulting in downstream constriction of flows and associated narrowing of wetland extent, downstream of the saltworks.

As surface water flow in the Sout River is rare, the saltworks use saline groundwater rather than river flows to derive their salts. This means that the lower estuary is the only part of the Sout River system that is perennially wet. Standing water in the lower estuary promotes algal growth (*Cladophora sp.*) and provides an artificial wetland habitat that supports wading birds such as Flamingos. Physical disturbance of the estuary and changes in its natural flow dynamics are significant.

A groundwater divide exists between quaternary catchments F60D and F60E. Groundwater north of the divide flows inland towards the Sout River and Groot Goeraap River, whereas groundwater south of the divide flows towards the coast and the Sout River.

Specialist studies completed for the area suggests that the potential groundwater flow in the area will accumulate in the shallow subsurface above bedrock material and follow low-lying topographical trends. As such, any seep into the subsurface is expected to flow down towards bedrock, where it would accumulate/mound and then begin flowing towards the coast. Any sources of contamination in this seep will likely follow a similar path, and over time trend towards the coast. As there are no current groundwater users, the coastal environment is the only receptor to this flow.

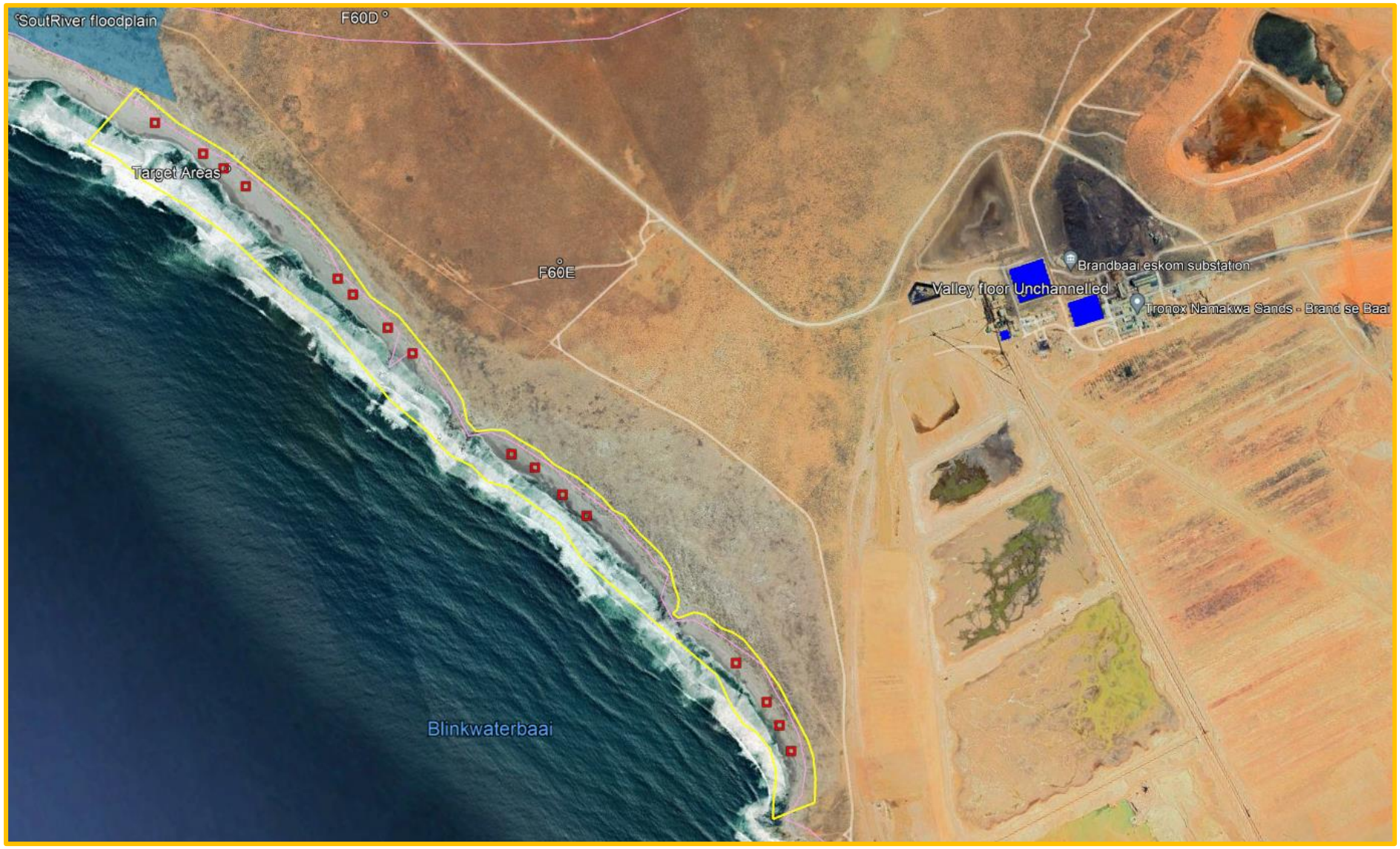

Figure 18: Location of Prospecting area (yellow polygon) in relation to Aquatic biodiversity and Water Resources

According to the Screening Tool Report the prospecting area is rated as having a very high sensitivity regarding Aquatic biodiversity.

Table 14: Aquatic biodiversity theme Sensitivity Features

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	ESA 1: Aquatic
Very High	Estuary_Sout (Noord)
Very High	Wetlands_(Estuary)

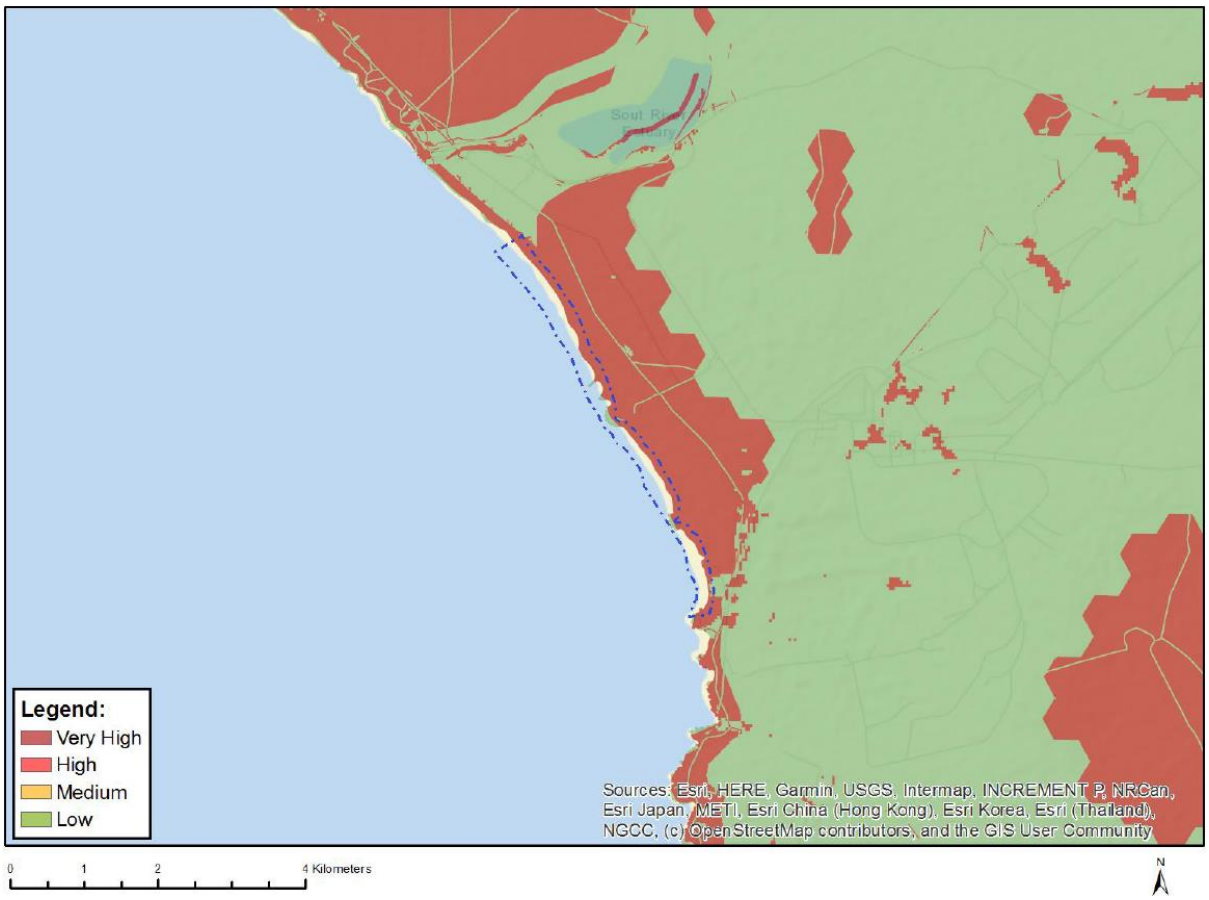

Figure 19: Map of Aquatic biodiversity theme sensitivity

9.1.10 Socio-economic

The West Coast District's (WCD) population is expected to grow at an average annual rate of 1.7 per cent, rising from an estimated 464 056 people in 2020 to 496 511 in 2024. This growth rate is slightly lower than that of the Western Cape at 1.8 per cent across the same period.

Despite vibrant economic activity in the Swartland, Saldanha and Bergrivier areas, large parts of the WCD remain impoverished. The WCD has the second lowest GDPR per capita in the Province and its Gini-coefficient (reflection of income inequality) has been worsening in recent years. Overall quality of life, as measured through the human development index (HDI) has however been improving. Residents of the WCD enjoy relatively high basic service delivery access levels i.e., 98.3 per cent for water, 94.0 per cent for electricity, 76.9 per cent for refuse removal, 87.2 per cent for sanitation and 86.7 per cent for housing.

The district's economy maintained an annual average GDPR growth rate of 1.5 per cent from 2014-2018 but fell into recession in 2019 with an estimated growth rate of -1.2 per cent. In 2018 the economy was mostly driven by activities within the manufacturing; agriculture, forestry, and fishing; as well as wholesale and retailed trade, catering, and accommodation sectors. The impact of the drought has had a significant impact on the agriculture, forestry, and fishing sector within the district, not only in terms of diminished production yield that negatively affected exports, but also in terms of job losses.

9.1.11 Cultural, Heritage and Palaeontological Resources

Table 15: Archaeological and Cultural and Heritage theme Sensitivity Features

Sensitivity	Feature(s)
Low	Low sensitivity

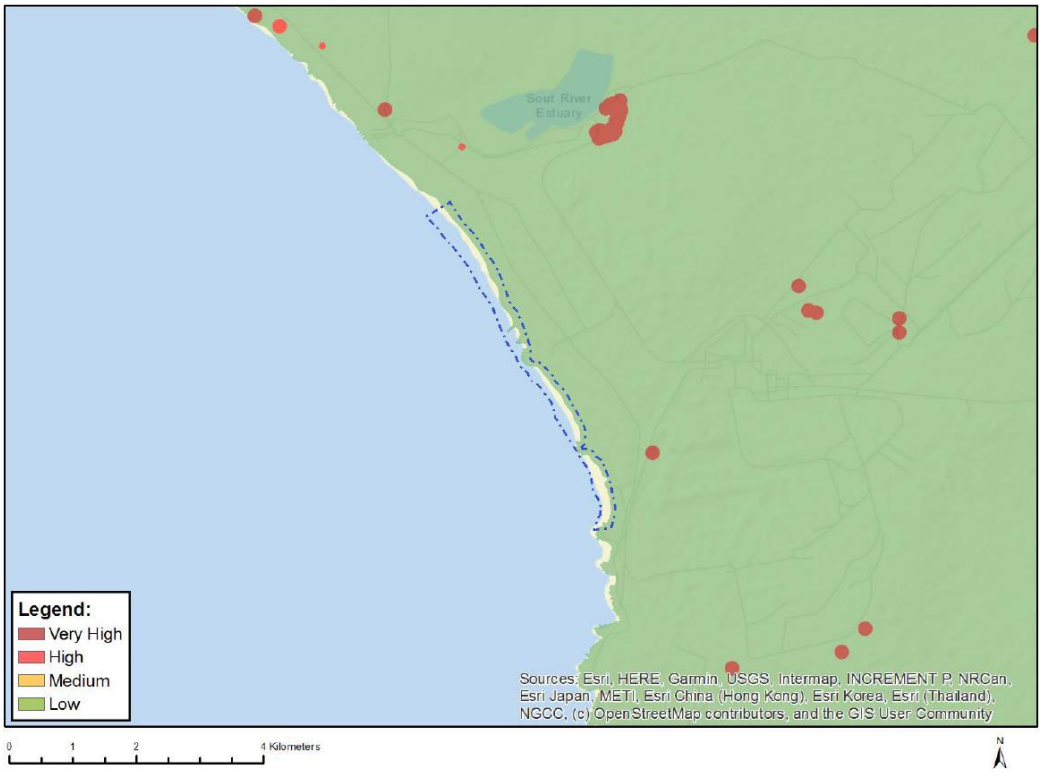

Figure 20: Map of relative Archaeological and Cultural and Heritage theme sensitivity

According to the Screening Tool Report, the relative paleontological sensitivity is rated as low to medium and this is confirmed by the SAHRIS Palaeosensitivity map.
A Desktop Paleontological Impact Assessment (PIA) was undertaken due to the medium sensitivity result stipulated in the screening tool report. All mitigating measures proposed will be included as part of the EMPr.

Table 16: Palaeontological theme Sensitivity Features

Sensitivity	Feature(s)
Low	Features with a Low paleontological sensitivity
Medium	Features with a Medium paleontological sensitivity

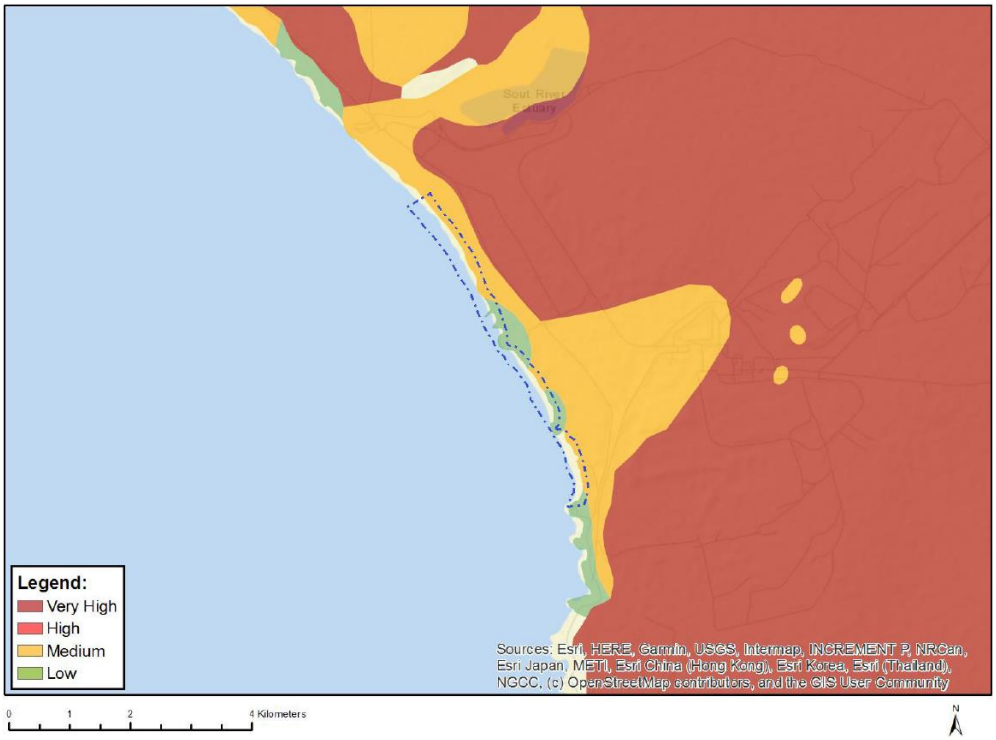

Figure 21: Map of relative Palaeontological theme Sensitivity

Colour	Sensitivity	Required Action
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Figure 22: SAHRIS Palaeo sensitvity map showing the study area to be of moderate sensitivity (green shading) as well as low sensitivity (blue shading).

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10 IMPACTS IDENTIFIED

The prospecting activities comprise desktop and geophysical activities and depending on the outcome thereof, the exact location of trenches will be selected and that is where bulk sampling will be conducted.

The impact assessment will therefore be separated into three distinct phases, namely:

- Construction phase (Site establishment);
- Operational phase (Sampling via prospecting pits and bulk sampling in trenches), and
- Decommissioning phase

Potential Risks/Impacts

10.1.1 Potential risks associated with safety

- The safety of personnel and the general public due to operating large earth-moving equipment.
- Management of dust, noise and ground vibration associated with prospecting and bulk sampling activities, in relation to surrounding communities.
- Potentially dangerous areas like excavations or equipment left behind and uncontrolled access to a potentially unsafe post-prospecting and bulk sampling area.

10.1.2 Potential risks associated with environmental features

- Loss of indigenous vegetation due to establishment of laydown areas.
- Soil erosion.
- Oil and fuel leaks from earthmoving and transport equipment and machinery or spillage of fuel during the transfer from fuel bowser to equipment.
- Post-prospecting and bulk sampling topography is unlike the original landform.
- Change in topography due to spoil heaps being left behind after prospecting and bulk sampling.
- Pollution resulting from poor waste management.
- Equipment and other items used during the prospecting operation being were left behind.
- Incomplete removal of re-usable infrastructure.
- Disturbance to sensitive environments such as Critical Biodiversity areas and any associated biodiversity corridors, wetlands and other aquatic ecosystems and terrestrial habitats for species of conservation concern.
- Potential contamination of groundwater from unmanaged use of hydrocarbons on-site, and incorrect storage of hazardous substances.
- Chemical contaminants polluting surface and/or groundwater.
- Waste classes are not kept in separate streams and incomplete removal of waste.
- Vehicle wash bays and workshop facilities produce petrochemical and solvent contaminated runoff.
- Toilets, fuel depots or storage facilities of potentially polluting substances can contaminate surface water.

10.1.3 Potential risks associated with viable and sustainable land.

- Lack of diligence in controlling the prospecting and bulk sampling footprint, resulting in unnecessary loss of agricultural potential.

- Uncontrolled development of roads, where existing farm tracks are not kept to and redundant internal roads are left behind.
- Post-prospecting and bulk sampling landform not compatible with the surrounding landscape and lowers land capability to significantly lower than the pre-prospecting and bulk sampling land

capability.

- Sub-surface infrastructure remaining behind, limiting the intended post-closure land use, including footings and foundations, power supply and water installations including pumps and pipelines.
- Long term changes in land use caused by delaying to implement rehabilitation and maintenance measures.
- Unsuccessful rehabilitation can reduce the post-prospecting and bulk sampling land use options. Rehabilitated areas could be too unstable to support post-prospecting and bulk sampling land use objectives that are compatible with surrounding areas.
- Ecological degradation due to loss of habitat and cumulative impact.
- Inadequate control of alien invasive vegetation species can result in the establishment of populations or seed sources that threaten adjacent areas.

10.1.4 Potential risks associated with a post-prospecting and bulk sampling landform.

- Impact on surface water resources by increasing the extent of hardened surfaces.
- Inadequate topsoil restoration or creation of unnatural surface topography which could impact lower or adjacent slopes due to increased runoff velocity.
- Altered storm water runoff response due to large impervious areas and concentrated runoff in drainage systems. Concentrated storm runoff from infrastructure areas is erosive, causing sheet, rill and donga erosion features.
- Potentially dangerous areas like excavations incorrectly rehabilitated including uncontrolled access to potentially unsafe post-prospecting areas.

10.1.5 Potential risks associated with the socio-economic environment.

- Disturbance of local communities in urban and rural areas caused by noise and dust emissions and increase in heavy vehicles along transport routes.
- Temporary exclusions of recreational activities in active mining areas.
- An influx of people into the local communities looking for work, with an increase in demand for housing, schooling, and services. Such an influx of workers into a community often results in a change in social dynamics.
- Positive impacts include, for example, the creation of both formal and informal businesses to supply additional needs, whilst negative social impacts include, for example, an increase in substance abuse, HIV transmission and unwanted pregnancies.
- Staff losing their jobs at mine closure can have devastating effects on communities that are reliant on mine-based income.
- Job losses of secondary industries, businesses and contractors and contractual agreements with service providers surpassing mine closure date.
- Lack of compliance with the approved EMPr and a lack of auditing of the EMPr.
- Prospecting activities closure stalled due to non-compliance with relevant legislation (national, provincial, and local).

10.1.6 Potential risks associated with visual intrusion, noise, vibration, light pollution, and air emissions.

- Terrain morphology plays a critical role in defining the visual envelope of prospecting developments and can either reduce or enhance visual impact. Apart from visual intrusion, there is also the risk of a reduced sense of place. The visual intrusion impact of prospecting activity would be on nearby roads, homesteads, settlements, recreational activities, and along tourism routes or corridors.
- The visual disturbance would be caused by prospecting activities such as excavations. Machinery and structures provide a colour contrast, as do disturbed areas against adjacent natural areas.
- Nuisance effects of air emissions due to a lack of implementation of dust suppression activities could impact on communities.
- Dust generated on haul roads reduces visibility, representing a safety hazard.

- Dust can retard vegetation growth and reduce the palatability of vegetation.
- The cumulative effect of a rise in the ambient noise levels or high noise levels in specific areas that exceed specified levels would impact on communities in close proximity.

  Noise disturbance and light pollution would result from night-time activities (if applicable) in areas that are in close proximity to communities

10.1.7 Potential risks associated with regard archaeological, cultural heritage or paleontological sites

- Disturbance of identified surface, or unknown sub-surface sites, if mitigation and monitoring is not implemented in accordance with the mitigation measures in the Heritage and Palaeontology Impact Assessment.

  Progressive development can encroach upon or disturb identified sites.

10.1.8 Potential impacts and risks associated with the Preferred Alternative.

Refer to Section 7 above, wherein is described the location, type of activity, layout and technology alternatives, and the preliminary result of having only the preferred and the 'no-go' alternative. The potential impacts and risks of adopting the preferred alternative are listed in Table 17 below.

10.1.9 Potential impacts and risks associated with the 'no-go' alternative

The 'no-go alternative entails maintaining the status quo, meaning that the proposed diamond prospecting and bulk sampling on the proposed site hat the Applicant would forgo at n opportunity to provide employment opportunities in an area and sector identified for opportunities for job provision and economic growth, and the sourcing of minerals. This potential would not be reached with the "no-go" option

Potential Impacts and Risks associated with the Preferred Alternative

Refer to Section 6 above, which describes the location, type of activity, design or layout, technology and operational alternatives, and the reasoned deduction for the preferred and only alternative of the proposed development. The potential impacts and risk associated with the preferred and only alternative are listed in Table 17 below.

Table 17: Preferred Alternative: Potential Impacts and Risks per Phase per Activity for All Quarries

Phase	Activities	Potential Impacts & Risks	Significance (before mitigation)	Probability	Duration
CONSTRUCTION PHASE	Establishment Activities (Setting up office and toilets, parking areas for vehicles, caterpillars and equipment)	Dust generation from vehicles frequently using existing two-lane farm track for access			
		Soil compaction from frequent use existing two-lane farm track for access			
		Disturbance to fauna through vehicle and construction work noise. Vegetation damage from setting up facilities and equipment as well as driving and parking vehicles and caterpillars			
		Soil compaction from frequent usage of existing two-lane access track to proposed site and soil erosion from exposed areas			
		Soil contamination from inadequate waste management			
		Dust nuisance from activities and visual disturbance			
		Noise and ground vibration causing nuisance on neighbouring properties			
		Potential impacts on archaeological and paleontological resources			
OPERATIONAL PHASE	Collection of samples and Sample Analysis (Including: excavations, refueling, waste generation & management, spoils, and overburden dumps	Visual disturbance due to spoil heaps caused by excavating (prospecting pits and bulk sampling trenches)			
		Water resources degradation from on-site activities within close proximity to or within watercourses			
		Biodiversity disturbance from on-site prospecting and bulk sampling activities and from vehicles. Disturbance of onsite wildlife and vegetation from removal of existing vegetation and from sampling areas and service roads.			
		Soil compaction from repeated use of existing two-lane access track to proposed sites and soil erosion from exposed areas			
		Soil contamination and waste management			
		Dust nuisance to neighbours and visual disturbance			
		Emissions (Dust), Noise and Vibration causing nuisance from			

		topsoil stripping, site establishment activities and vehicles			
		Potential impacts on archaeological and paleontological resources			
DECOMMISSIONING PHASE	Rehabilitation of the prospecting right area: backfilling shaping landscape profile; scarifying compacted areas and vehicle tracks; replacing topsoil, etc.	Biodiversity (wildlife and vegetation) disturbance from vehicles and ccaterpillars			
		Dust and vehicle emissions from rehabilitation activities			
		Soil erosion			
		Visibility of the rehabilitated prospecting operations, erosion control or run-off diversion structures			
		Socio-economic impacts: employment during rehabilitation and decommissioning activities.			

Potential Impacts and Risks associated with the No-Go Alternative

The biophysical environment would remain unchanged if the 'no-go' alternative is adopted. However, this would mean that the proposed prospecting and bulk sampling would not take place and so it will not become known whether or not a viable diamond mine that can introduce significant socio-economic benefits in the area with acceptable ecological impacts can be established on the proposed site.

Methodology used in determining significance of potential impacts

Refer to Table 18 below, which provides the impact assessment criteria applied in the rating of the impacts associated with each phase of the Preferred alternative. Each impact is assessed in terms of: nature (character status); extent (spatial scale); duration (time scale); probability (likelihood) of occurring; reversibility of the impact; the degree to which the impact may cause irreplaceable loss of resources; the significance (size or magnitude scale) prior to mitigation; the degree to which the impact can be mitigated; and, the significance (size or magnitude scale) after mitigation.

Table 18: Impact Assessment Criteria

ASSESSMENT CRITERIA	
NATURE	
Positive	Beneficial to the receiving environment
Negative	Harmful to the receiving environment
Neutral	Neither beneficial or harmful
EXTENT (GEOGRAPHICAL)	
Site	The impact will only affect the site
Local/ district	Will affect the local area or district
Province/region	Will affect the entire province or region
International and National	Will affect the entire country
CONSEQUENCE	
Loss/gain	The impact will result in loss or gain of resource
No loss/gain	The impact will result in no loss or no gain of resource
DURATION	
Construction period / Short term	Up to 3 years
Medium term	Up to 6 years after construction
Long term	More than 6 years after construction
PROBABILITY	
Definite	Impact will certainly occur (>75% probability of occurring)
Probable	Impact likely to occur (50 – 75% probability of occurring)
Possible	Impact may occur (25 – 50% probability of occurring)
Unlikely	Impact unlikely to occur (0 – 25% probability of occurring)
REVERSIBILITY	
Reversible	Impacts can be reversed though the implementation of mitigation measures
Irreversible	Impacts are permanent and cannot be reversed by the implementation of mitigation measures
IRREPLACEABLE LOSS OF RESOURCES	
High	The impact is result in a complete loss of all resources
Medium	The impact will result in significant loss of resources
Low	The impact will result in marginal loss of resources
No Loss	The impact will not result in the loss of any resources
CUMULATIVE EFFECTS	
High	The impact would result in significant cumulative effects
Medium	The impact would result in moderate cumulative effects
Low	The impact would result in minor cumulative effects
SIGNIFICANCE RATINGS	
Very High	Major to permanent environmental change with extreme social importance.
High	Long term environmental change with great social importance.
Medium	Medium to long term environmental change with fair social importance.
Low	Short to medium term environmental change with little social importance.
Very low	Short-term environmental change with no social importance
None	No environmental change
Unknown	Due to lack of information
DEGREE TO WHICH IMPACT COULD BE AVOIDED/MANAGED/MITIGATED	
High	The impact could be significantly avoided/managed/mitigated.
Medium	The impact could be fairly avoided/managed/mitigated.
Low	The impact could be avoided/managed/mitigated to a limited degree.
Very Low	The impact could not be avoided/managed/mitigated; there are no mitigation measures that

	would prevent the impact from occurring.

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

Please refer to Tables 17 and 18 above.

The possible mitigation measures that could be applied

Please refer to Table 20 for the possible mitigation measures included under each impact.

The outcome of the Site Selection Matrix & Final Site Layout Plan

It is only a single site that was considered for the proposed development as explained throughout the Draft Scoping Report.

Motivation where no alternative sites were considered

Please refer to the discussion of alternatives in Section 7.

Statement Motivating for the Preferred Site

Please refer to Section 7.

11 PLAN OF STUDY OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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

Please refer to Section 7 above.

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

The aspects to be assessed are included in Table 17.

Description of aspects to be assessed by specialists

The need for specialist studies required in the EIR phase will be finalised when comments have been received on the Draft Scoping Report. However, it is envisaged that a terrestrial biodiversity study including animal and plant species themes, aquatic biodiversity study including the hydrological theme and a heritage impacts study will be conducted.

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

The impact assessment methodology that will be used in the EIA Phase is included in Table 18.

The proposed method of assessing significance

Refer to Table 18.

The stages at which the competent authority will be consulted

The competent authority (Department of Mineral Resources and Energy: Western Cape Region) will be consulted in each phase of the EIA process. This includes:

- Scoping Phase; and
- Impact Reporting Phase.

Particulars of the public participation process to be conducted in the Environmental Impact Reporting process

11.1.1 Steps to be taken to notify I&APs

The stakeholder engagement process initiated in the Scoping Phase will be continued in the Environmental Impact Reporting phase.

The key activities planned during the Environmental Impact Reporting phase are outlined in Table 19 below.

Table 19: I&AP engagement activities planned during the Impact Assessment Phase

Task	Objectives	Timeframe
Update I&AP database	To register additional, I&APs throughout the Scoping & EIA Report (S&EIR) process	Throughout S&EIR process
Compile and release EIR for public comment	To assess the impacts of the project and formulate mitigation measures and management plans	Impact Assessment Phase
Public comment period	To provide I&APs with the opportunity to review and comment on the results of the Impact Assessment Phase	Impact Assessment Phase
Finalise EIR	To present the findings of the EIA process and incorporate I&AP comment in the final report which provides DMR with information for decision-making	Impact Assessment Phase

11.1.2 Details of the engagement process to be followed

Refer to Table 19 above.

11.1.3 Description of the information to be provided to Interested and Affected Parties

Refer to Table 19 above.

Description of the tasks that will be undertaken during the Environmental Impact Reporting process

The Impact Assessment phase can be divided into key steps and outlined further below:
- Consultation with relevant authorities
- Detailed specialist studies
- Completion of the EIR and an EMPr, including a Closure, Decommissioning and Rehabilitation Plan;
- Stakeholder engagement; and,
- Submission of the EIR, EMPr and Closure, Decommissioning and Rehabilitation Plan to the competent authority, DMR.

Consultation with the Relevant Authorities
Consultation will be conducted with the DMR and other relevant authorities to clarify their requirements for the Impact Assessment Phase of the proposed development, other permit and license applications for the project and to ensure that comments from the key authorities can be received in time to allow for them to be addressed in the EIA. The authorities (and other organs of state) that will be consulted include:
- DMR
- DWS
- DEA&DP
- SAHRA
- HWC
- West Coast District Municipality
- Matzikama Local Municipality

Specialist Studies
Detailed specialist assessments will be undertaken to investigate in detail, any key potential environmental issues and impacts initially identified during the Scoping phase that require further detailed investigation, and following comment from the DMR.

Compilation of the Environmental Impact Report
The compilation of the EIR and EMPr will include the following tasks:
- Incorporation of the results of specialist studies;
- Identification and assessment of environmental impacts based on the results of specialist studies / input and professional judgment of the EIA team. This will entail an assessment of the duration, extent, probability and intensity of the impacts to determine their significance; Identification of mitigation measures

and recommendations for the management of the proposed project to avoid and minimise environmental impacts and maximise benefits; and,

- Collation of the above information into an EIR and EMPr for the design, construction and operational phases of the project.
- Preparation of a Closure, Decommissioning and Rehabilitation Plan.

Stakeholder Engagement

The key stakeholder engagement activities planned during the Environmental Impact Reporting phase are outlined in Table 19.

Submission of the EIR and EMPr to DMR

All comments received will be incorporated in the Issues and Responses Summary. The Final EIR, including the EMPr and Closure, Decommissioning and Rehabilitation Plan, will then be submitted to the DMR to inform the decision on the application for environmental authorisation.

12 MEASURES TO AVOID, REVERSE, MITIGATE, OR MANAGE IDENTIFIED IMPACTS AND TO DETERMINE THE EXTENT OF THE RESIDUAL RISKS THAT NEED TO BE MANAGED AND MONITORED

Table 20: Potential risk of the Preferred Alternative

Phase	Activities	Potential Impacts & Risks	Significance (before mitigation)	Proposed mitigation	Significance (after mitigation
CONSTRUCTION PHASE	Establishment Activities (Setting up office and toilets, parking areas for vehicles, caterpillars and equipment)	Decline in public access to coast	Medium	Put up signage indicating on-site areas that are still accessible to the public	Low
		Inconvenience to landuses on neighbouring properties through dust and visual disturbance	Medium	Restrict construction activities to the identified development footprint and implement dust suppression measures.	Low
		Soil compaction from frequent use existing two-lane farm track for access	Medium	Scarify the two-lane track when necessary	Low
		Disturbance to fauna through vehicle and construction work noise. Vegetation damage from setting up facilities and equipment as well as driving and parking vehicles and caterpillars	Medium	Restrict construction activities to the identified development footprint	Medium-Low
		Potential contamination of soil from petrochemical spills	Medium	-Keep vehicles well maintained and clean up any spills as soon as possible with clean-up kits that are kept on the site. - Use appropriately sized drip trays for all refueling, repairs or when vehicles are parked	Low
		Soil contamination from inadequate waste management	Medium	-Provide new workers on the site with environmental training that includes *inter alia*, waste management -Provide adequate number of portable toilets available for on-site workers and ensure regular sewage collection for disposal at wastewater treatment works. -Provide adequate number of on-site refuse bins and ensure the refuse is regularly collected and disposed of at licensed waste disposal site.	Low
		Dust nuisance from on-site activities	High	-Keep excavated material wet using	Low

				seawater.	
		Noise and ground vibration causing nuisance on neighbouring properties	Medium	-Keep vehicles, caterpillars and equipment well maintained to limit noise	Low
		Potential impacts on archaeological and paleontological resources	Medium	Implement recommendations of heritage specialist and comply with any requirements specified by SAHRA and Heritage Western Cape	Low
OPERATIONAL PHASE	Collection of samples and Sample Analysis (Including: excavations, refuelling, waste generation & management, spoils, and overburden dumps	Visual disturbance due to spoil heaps caused by excavating (prospecting pits and bulk sampling trenches)	Medium	Backfill prospecting pits and bulk sampling trenches with spoil as soon as possible to limit the time that spoil heaps remain in view	Medium-Low
		Water resources degradation from on-site activities within close proximity to or within watercourses	Medium	-Appoint freshwater specialist and implement recommendations of the specialist and comply with any requirements specified by the National DWS	Medium-Low
		Biodiversity disturbance from on-site prospecting and bulk sampling activities and from vehicles. Disturbance of onsite wildlife and vegetation from removal of existing vegetation and from sampling areas and service roads.	High	-Keep development footprint between the low and the high-water mark of the sea and on patches that are devoid of indigenous vegetation -Backfill prospecting pits and bulk sampling trenches with spoil as possible to enable invertebrates living in topsoil to return as soon as possible -Appoint biodiversity specialist and implement recommendations of biodiversity specialist and comply with any requirements specified by CapeNature, DEA&DP" Oceans and Coast and DFFE	Medium-Low
		Soil compaction from repeated use of existing two-lane access track to proposed sites and soil erosion from exposed areas	Low	-Scarify the two-lane track when necessary and avoid deviating from the existing two-lane farm track -Avoid clearing any vegetation	Low
		Soil contamination and waste management	Medium	-Provide new workers on the site with environmental training that includes *inter alia*, waste management -Provide adequate number of portable toilets available for on-site workers and ensure regular sewage collection for disposal at wastewater treatment works. -Provide adequate number of on-site refuse bins and ensure the refuse is regularly collected and disposed of at licensed waste disposal site.	Low

		Dust nuisance to neighbours and visual disturbance	Medium	Keep excavated material wet with seawater to limit dust and backfill prospecting pits and bulk sampling trenches as soon as possible to limit the time that spoil heaps will remain visible	Low
		Emissions (Dust), Noise and Vibration causing nuisance from topsoil stripping, site establishment activities and vehicles	-Keep vehicles, caterpillars and equipment well maintained to limit noise	-Keep vehicles, caterpillars and equipment well maintained to limit noise	-Keep vehicles, caterpillars and equipment well maintained to limit noise
		Potential impacts on archaeological and paleontological resources	Medium	Implement recommendations of heritage specialist and comply with any requirements specified by SAHRA and Heritage Western Cape	Low
DECOMMISSIONING PHASE	Rehabilitation of the prospecting right area: backfilling shaping landscape profile; scarifying compacted areas and vehicle tracks; replacing topsoil, etc.	Biodiversity (wildlife and vegetation) disturbance from vehicles and caterpillars	Medium	Implement recommendations of biodiversity specialist and comply with any requirements specified by CapeNature, DEA&DP" Oceans and Coast and DFFE	Low
		Dust and vehicle emissions from rehabilitation activities	Medium	Keep excavated material wet with seawater to limit dust and backfill prospecting pits and bulk sampling trenches as soon as possible to limit the time that spoil heaps will remain visible	Low
		Soil erosion	Medium	Keep excavated material wet using seawater	Low
		Socio-economic impacts: employment during rehabilitation and decommissioning activities.	Medium	Mitigation not required	

13 OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998)

The EIR must include the: -

(1) Impact on the socio-economic conditions of any directly affected persons
A full public consultation process is being followed for the application for environmental authorisation. The purpose of the consultation is to provide I&APs with the opportunity to raise any potential concerns. The concerns raised will be captured and addressed within the public participation section of the Scoping Report to inform the decision-making process.

2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act
Heritage Western Cape and SAHRA will be provided with an opportunity to comment on the application for environmental authorisation and the comments received will be incorporated in the Scoping Report, EIR and EMPr.

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

Section 2 of NEMA sets out a number of principles (see section 5.7 above) that are relevant to the:

- EIA process, such as:
  - Adopt a risk-averse and cautious approach;
  - Anticipate and prevent or minimise negative impacts;
  - Pursue integrated environmental management;
  - Involve stakeholders in the process; and
  - Consider the social, economic and environmental impacts of activities; and
- Proposed development such as:
  - Place people and their needs at the forefront of concern and serve their needs equitably;
  - Ensure development is sustainable, minimises disturbance of ecosystems and landscapes, pollution and waste, achieves responsible use of non-renewable resources and sustainable exploitation of renewable resources;
  - Assume responsibility for project impacts throughout its life cycle; and
  - Polluter bears remediation costs.

This EIA process will comply with the principles set out in section 2 of the NEMA through adherence to the EIA Regulations, 2014 (as amended) and associated Guidelines, which set out clear requirements for *inter alia*, impact assessment and stakeholder involvement, and through the assessment of impacts and identification of mitigation measures during the EIR phase.

- The Preferred alternative will be considered in full detail in the EIR phase.
- The potential social and environmental impacts of the proposed development will be identified, assessed and evaluated using the impact assessment methodology detailed in Table 18 so that the significance of each positive and negative impact can become clear.
- Impact mitigation measures will be presented in the.
- An EMPr will be compiled to help ensure that the negative potential environmental impacts are avoided or minimised.
- Opportunities for public participation are allowed for in the EIA process.
- The needs and interests of I&APs will be taken into account.
- All relevant information will be made available for public comment for at least 30 days and the comments received will be responded to before the submission of any final reports to the DMR, as part of the public participation process.
- Comments made by the relevant State Departments and Organs of State will inform the decision made by DMR on the application.

14 UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I, **Bernard de Witt** herewith undertake that the information provided in this report is correct, and that the comments and inputs from stakeholders and I&APs will be correctly recorded and reported throughout the application for environmental authorisation.

Signature of the EAP

DATE: 15 January 2024

15 UNDERTAKING REGARDING LEVEL OF AGREEMENT

I, **Bernard de Witt** herewith undertake that the information provided in this report is correct and that the level of agreement with I&APs and stakeholders will be correctly recorded and reported throughout the application process.

Signature of the EAP

DATE: 15 January 2024

16 APPENDIX A: CV OF EAP

Summary of the Environmental Assessment Practioner's past experience

Bernard de Witt has more than 30 years of experience in environmental management and environmental impact assessments.

After qualifying with a B.Sc. in Forestry and a B.A. (Hons) in Public Administration at the University of Stellenbosch, Bernard joined the Department of Forestry as an Indigenous Forest Planner in 1983, going on to become Manager of the Table Mountain Reserve with the Cape Town Council.

He then joined Cape Nature Conservation (CNC) and headed its Conservation Planning Section before taking up the position of District Manager of the Boland area (inc. the Hottentots Holland and Kogelberg). As a Regional Ecologist, he co-ordinated managerial and scientific inputs into Provincial Nature Reserves in the Boland, Overberg and West Coast regions of the Western Cape Province.

For the last four years of his employment, he assessed and evaluated development applications, from an environmental perspective, on behalf of CNC (now Western Cape Department of Environmental Affairs and Development Planning ("DEA&DP")). Since he left DEA&DP, he has been involved in environmental consulting in the private sector as a member of EnviroAfrica.