SCOPING REPORT FOR THE AMENDMENT OF AN EXISTING PROSPECTING RIGHT TO INCLUDE BULK SAMPLING BY MOONSTONE DIAMONDS MARKETING (PTY) LTD ON SEA CONCESSION 13(B) VREDENDAL, WESTERN CAPE.

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (AS AMENDED IN 2014), NATIONAL ENVIRONMENTAL MANAGEMENT: INTEGRATED COASTAL MANAGEMENT ACT 24 OF 2008 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).

Compiled For

MOONSTONE DIAMOND MARKETING (PTY) LTD

By:

Archean Resources (Pty) Ltd

Release Date: 17 August 2021

DMR REFERENCE: WC 30/5/1/2/2/10335PR

REPORT INFORMATION

Report Title:	Application to amend a Prospecting Right in terms of Section 102 of the MPRDA Act 28 Of 2002, to incorporate Bulk Sampling to an existing Prospecting right and amendment of the associated Environmental Authorisations to include a listed activity in terms of the National Environmental Management Act (NEMA) (Act No 107 Of 1998): in line with the Environmental Impact Assessment Regulations 2017 (As Amended) and National Environmental Management: Integrated Coastal Management Act 24 of 2008.	
Report Reference:	Scoping Report for the amendment of an existing Prospecting Right to include Bulk Sampling by Moonstone Diamonds Marketing (Pty) Ltd on Sea Concession 13(B) Vredendal, Western Cape.	
Reference	WC 30/5/1/2/2/10335PR	
Report Status:	DSR- 01: Draft Report for Public review	
REVISION	DATE	REASON FOR CHANGE
001	17 August 2021- 16 September 2021	Release of Draft Scoping for public review
002	TBA	Final Scoping Report: Additional Environmental information and consolidation of I&AP comments

DETAILS OF APPLICANT AND EAP

Table 1: Applicant Details

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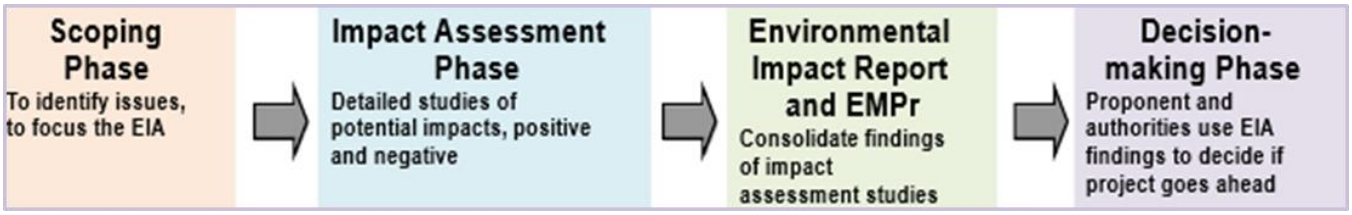
EXECUTIVE SUMMARY

Moonstone Diamond Marketing Pty Ltd (Moonstone Diamond Marketing) formerly Trans Hex Operations (Pty) Ltd has appointed Archean Resources (Pty) Ltd, an independent consulting company, to conduct an Environmental Impact Assessment (EIA) to evaluate the potential environmental and social impacts of the proposed amendment to their existing prospecting right to include bulk sampling application and drilling. The application area is on Sea concession 13(b) is situated 47km west of Vredendal., Western Cape Province. Concession 13(b) is situated directly south of the Olifants River mouth, extending about 12 km southward from the river mouth. Concession 13(b) lies seaward of Concession 13(a), extending to a straight-line boundary approximately 5 km from the high-water line.

In terms of the National Environmental Management Act (NEMA), in addition to the amendment of the prospecting right application submitted to the DMR an Environmental Authorisation has been applied for to include a listing 2 notice activity. A prospecting right application was lodged with an application for Environmental Authorisation (EA) in term of Section 24 of the NEMA Act read with Section 21 of the EIA 2014 regulations to the DMR. The EA application was acknowledged on 5th of August 2021 (Refer to Appendix 1) and the prospecting right application acceptance is still pending. The report has been designed to meet the requirements for conducting an Environmental Impact Assessment (EIA) and Environmental Management Programme (EMPR) as stipulated in the Regulations contained in both the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002-MPRDA) and National Environmental Management Act (NEMA) respectively.

Comments received during this phase will be considered and addressed in the Environmental Impact Assessment (EIA/EMPr) which will be submitted to the competent authority Department of Minerals (DMR) for approval.

AN EIA CONSISTS OF THE FOLLOWING PHASES



Purpose of this Report

This report addresses the requirements for Scoping Phase and the Plan of Study (PoS) for the Environmental Authorisation Process as outlined in the NEMA regulations and the MPRDA regulations. The aim of this SR is to:

- Provide information to the authorities as well as interested and affected parties (I&APs) on the proposed project;
- Provide information regarding alternatives that are being considered;

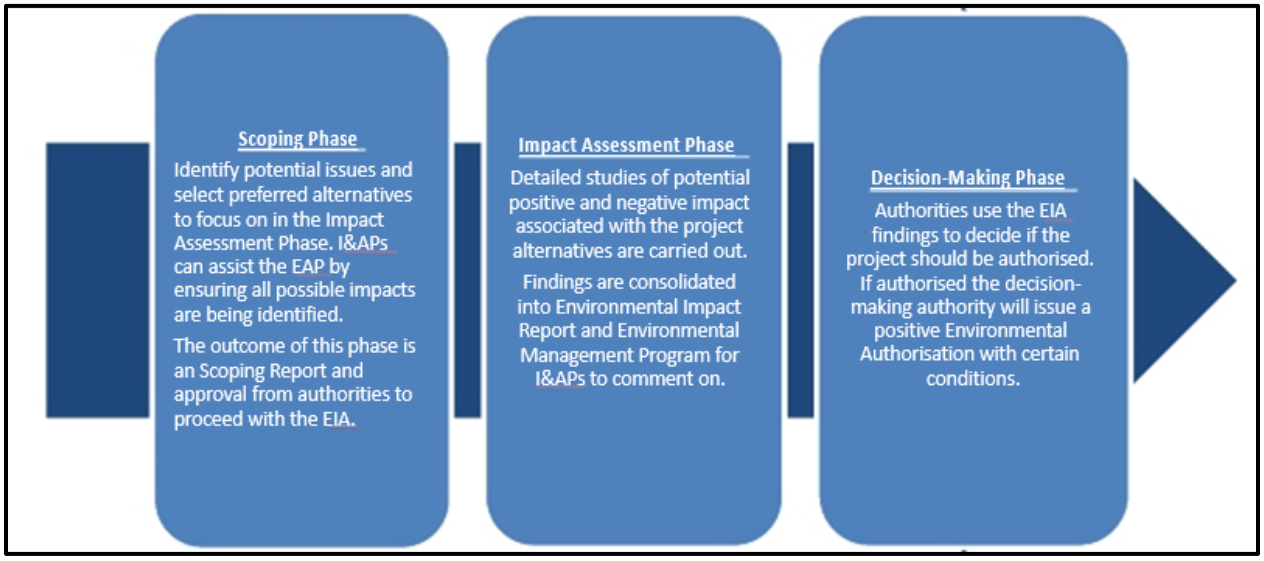
- Indicate how I&APs have been and are still being afforded the opportunity to contribute to the project, verify that the issues raised during the scoping phase are incorporated in the impact assessment phase of the environmental authorization process;
- Describe the baseline receiving environment;
- Define the Terms of Reference (ToR) for specialist studies to be undertaken in the Impact Assessment Phase of the EIA; and
- Present the findings of the Scoping Phase in a manner that facilitates input by the I&AP's and decision-making by the relevant authorities.

The Process

As part of the project, the environmental authorizations and licenses required to start the prospecting need to be obtained. To do so, a Scoping and Environmental Impact Assessment Process (S&EIR) is being undertaken in line with the provisions of the National Environmental Management Act (EIA regulations of 04 December 2014 as amended). The S&EIR process and specialist studies to be undertaken will also support the applications for the required licenses and environmental authorizations. The EIA findings are used by the applicant and authorities to obtain an objective view of the potential environmental, social and cultural impacts that could arise during the prospecting of the proposed area.

Measures for the avoidance or mitigation of negative impacts will be proposed and positive impacts will be enhanced. The outcome of the first phase of the S&EIR is the Scoping Report, which provides the basis for undertaking the Impact Assessment Phase of the project. The draft scoping report will be available for review for at least 30 days from the 16th of August 2021 to the 14th of September 2021.

The process is summarized in the illustration below



Environmental Baseline and Potential Impacts

The prospecting right area has been identified and this assessment is aimed at identifying the general environmental sensitivities across the prospecting right area. This will involve **desktop** plus specialist studies and draws extensively on information contained in these studies In order to assess these potential impacts the following baseline information will be assessed:

- Fisheries Assessment;
- Marine biodiversity;
- Marine Heritage and palaeontology;
- Social Impact Assessment;
- Visual Impact Assessment;
- Noise & Air Quality Impact;
- Tourism Impact assessment

The proposed activities include geophysical surveying, drill sampling and bulk sampling, to be completed over different phases of a four-phase project. The following key environmental issues – potential negative impacts and potential benefits – have been identified:

1) Temporary safety zone around survey and sampling vessels and the associated impact of exclusion of fishing operations;
2) Discharge of sediment into the marine environment and the resulting impact of the sediment plume on fish stock recruitment;
3) The potential impacts on commercial fisheries in terms of disruption to fishing operations and potential loss of catch;
4) Elevated noise levels during geophysical surveys and the acoustic impacts on fishing;
5) The likelihood of impacts arising from the bulk sampling programme on palaeontological resources in the concession areas;
6) A consideration of the potential for the presence of and impacts on submerged pre-colonial archaeological material in or on the seabed in the concession areas;
7) Disturbances and risks associated with geophysical surveys and bulk sampling for diamondiferous gravels, the anticipated effects of such activities on the local marine biodiversity;
8) Visual and Sense of Place – Visual impacts associated with prospecting infrastructure, landscape alteration and perception
9) Socio-economic – Job security, continued investment in local economy and negative impacts associated with the invasive prospecting; and
10) – Potential impacts on sites of archaeological or palaeontological significance.

Way Forward

The EIA process is being carried out in accordance with the NEMA EIA regulations. Each of the specialists will undertake a detailed EIA assessment. Included in this report is a detailed plan of study provided by each of the appointed specialists to be implemented during the EIA phase. Potential impacts identified during the Scoping and EIA will be assessed by the specialists for each feasible development alternative and for each phase of the project. The EIA and specialist studies will provide input into the EMPR which will provide the necessary action plans and management measures to mitigate the identified impacts.

This Scoping study has been undertaken with the aim of identifying potential positive and negative impacts on the environment and gathering issues, concerns and queries from I&APs. The Scoping report documents the process followed, the findings and recommendations of the Scoping Phase study, and the proposed Plan of Study for the EIA Phase to follow.

The way forward recommended by this study is as follows:

- Make the Scoping Report available for public comment for a period of 30 calendar days;
- Submit the Scoping Report to the competent authority for permission to undertake the Impact Assessment Phase of the project;
- Upon approval of the Scoping Report, all I&APs are to be notified of the conditions of the Department of Mineral Resources for proceeding with the Impact Assessment Phase of the project;
- Execute the Plan of Study for Impact Assessment during the Impact Assessment Phase of the project.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

AIA	Archaeological Impact Assessment
ASAPA	Association of Southern African Professional Archaeologists
BID	Background Information Document
CA	Competent Authority
CARA	Conservation of Agricultural Resources Act (Act 43 of 1983)
CSA	Constitution of South Africa (Act No. 108 of 1996)
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism (currently known as DEA)
DMRE	Department of Minerals and Energy
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act (ECA), 1989 (Act No. 73 of 1989)
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
GN	Government Notice
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IEM	Integrated Environmental Management
IWULA	Integrated Water Use License Application
IWWMP	Integrated Water and Waste Management Plan
MPRDA	Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) (as amended)
NEMA	National Environmental Management Act (EIA regulations of 4 Dec 2014 as amended in April 2017)
NEMAQA	National Environmental Management: Air Quality Act (Act No. 39 of 2004)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act (Act No. 59 of 2008)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
OHSA	Occupational Health and Safety Act (Act No. 85 of 1993)
PPP	Public Participation Process
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SR	Scoping Report

GLOSSARY OF TERMS

Anthropogenic: Change induced by human intervention.

Applicant: Any person who applies for an authorisation to undertake an activity or undertake an Environmental Process in terms of the Environmental Impact Assessment (EIA) Regulations – National Environmental Management Act (EIA regulations of 04 December 2014 as amended in April 2017) as contemplated in the scheduled activities listed in Government Notice (GN) No 983, 984 and 985.

Archaeological resources: This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which South African Heritage Resources Agency (SAHRA) considers to be worthy of conservation; features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Biodiversity: The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.

Cultural significance: This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

Cumulative Impact: In relation to an activity, cumulative impact means the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Environment: All physical, chemical and biological factors and conditions that influence an object.

Environmental Impact Assessment: In relation to an application, to which Scoping must be applied, means the process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of the application.

Environmental Impact Assessment Report: In-depth assessment of impacts associated with a proposed development. This forms the second phase of an EIA and follows on the Scoping Report (SR).

Heritage resources: This means any place or object of cultural significance. See also archaeological resources above.

Precipitation: Any form of water, such as rain, snow, sleet, or hail that falls to the earth's surface.

Red Data species: All those species included in the categories of endangered, vulnerable or rare, as defined by the International Union for the Conservation of Nature and Natural Resources.

Riparian: The area of land adjacent to a stream or river that is influenced by stream induced or related processes.

1 PROJECT INFORMATION

1.1 Introduction

Moonstone Diamond Marketing Pty Ltd (Moonstone Diamond Marketing) formerly Trans Hex Operations (Pty) Ltd has appointed Archean Resources (Pty) Ltd, an independent consulting company, to conduct an Environmental Impact Assessment (EIA) to evaluate the potential environmental and social impacts of the proposed amendment to their existing prospecting right to include bulk sampling application and drilling. The application area is on Sea concession 13(b) is situated 47km west of Vredendal., Western Cape Province. Concession 13(b) is situated directly south of the Olifants River mouth, extending about 12 km southward from the river mouth. Concession 13(b) lies seaward of Concession 13(a), extending to a straight-line boundary approximately 5 km from the high water line.

In terms of the National Environmental Management Act (NEMA), in addition to the amendment of the prospecting right application submitted to the DMR an Environmental Authorisation has been applied for to include a listing 2 notice activity. A prospecting right application was lodged with an application for Environmental Authorisation (EA) in term of Section 24 of the NEMA Act read with Section 21 of the EIA 2014 as amended and National Environmental Management: Integrated Coastal Management Act 24 of 2008 regulations to the DMR. The EA application was acknowledged on 5th of August 2021 (Refer to Appendix 3) and the prospecting right application acceptance is still pending. The report has been designed to meet the requirements for conducting an Environmental Impact Assessment (EIA) and Environmental Management Programme (EMPR) as stipulated in the Regulations contained in both the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002-MPRDA) and National Environmental Management Act (NEMA) respectively.

A full EIA must be undertaken due to the bulk sampling noted in the prospecting works program. The report has been designed to meet the requirements for conducting an Environmental Impact Assessment (EIA) and Environmental Management Programme (EMPR) as stipulated in the Regulations contained in both the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002-MPRDA) and National Environmental Management Act (EIA regulations of 4 Dec 2014) respectively.

1.2 Purpose of the report

In terms of relevant legislations, the applicant may not commence with the prospecting prior to a suite of authorisations. This document is the Scoping Report, the purpose of which is to provide stakeholders with the preliminary results of the Scoping Phase of the study and with an opportunity to verify that all issues have been identified and, if not, provides an opportunity for stakeholders to raise them and for them to be captured and considered in the EIA process.

1.3 Assumptions and Limitations

As is standard practice, this Scoping Report is based on a number of assumptions and is subject to certain limitations. These are as follows:

- It is assumed that information provided by the applicant and specialists is accurate;
- A more detailed project description will be presented in the Impact Assessment Phase; and
- Detailed assessment of the potential positive and negative environmental impacts of the proposed development will only be undertaken during the Impact Assessment Phase.

Notwithstanding the above, Archean is confident that these assumptions and limitations do not compromise the overall findings of this report.

1.4 Description of the property

The application area has a curved boundary 1000m seaward from the high water mark of the sea C,B and A situated between Latitudes 31°.42'.37" and 31°.48'.59" and Longitudes 18°.09'.20" and 18°.11'.40" in extend approx. 3983.91ha, Administrative of Vredendal, Western Cape Province.

1.4.1 Project Locality

Farm Name:	Sea concession 13(b)
Application area (Ha)	3983.91 hectares
Magisterial district:	Administrative of Vredendal, Western Cape Province
Distance and direction from nearest magisterial district	Sea concession 13(b) is situated 47km west of Vredendal.
Name and location of nearest coastal town(s), city, harbour	Town: Lutzville, Vredendal, Hondeklipbaai, Strand- fontein, Doringbaai Harbour: Lamberts Bay, Hondeklipbaai, Kleinzee and Van Rhynsdorp.

The application area is on Sea concession 13(b) is situated 47km west of Vredendal., Western Cape Province. Concession 13(b) is situated directly south of the Olifants River mouth, extending about 12 km southward from the river mouth. Concession 13(b) lies seaward of Concession 13(a) (to which Trans Hex Mining Ltd also have the prospecting rights), extending to a straight-line boundary approximately 5 km from the high water line.

Lambert's Bay is the closest available port from which exploration and prospecting can be undertaken. It is situated 50 km south of the Olifants River mouth. Doring Bay, about 15 km south of the river mouth, is a small fishing port with access only in fair weather conditions, making it unsuitable for exploration and prospecting vessels. Only ski-boats are able to navigate through the mouth of the Olifants River.

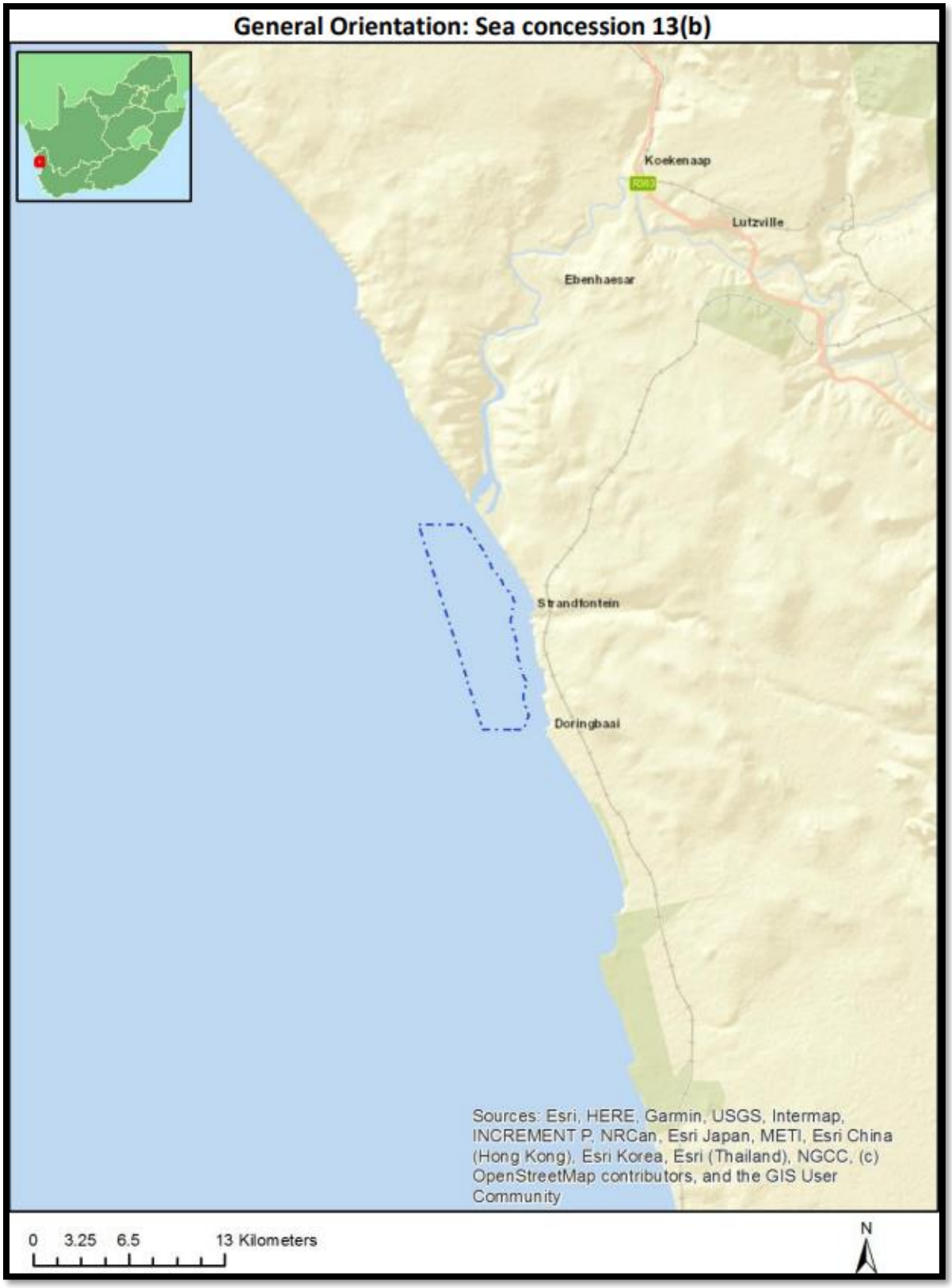


Figure 1: Locality Map

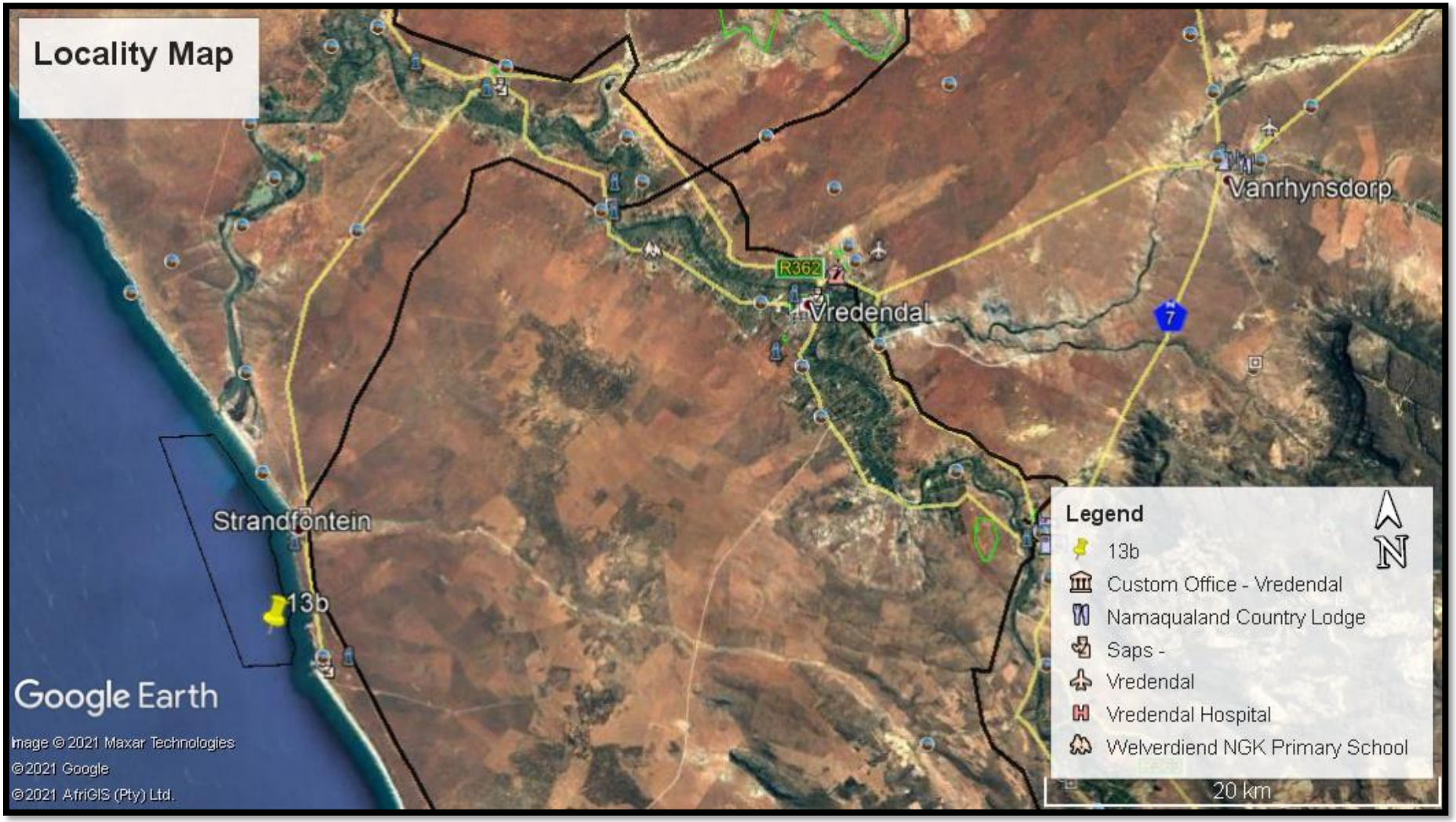


Figure 2: Google Map of the project area

Figure 3: Site Map

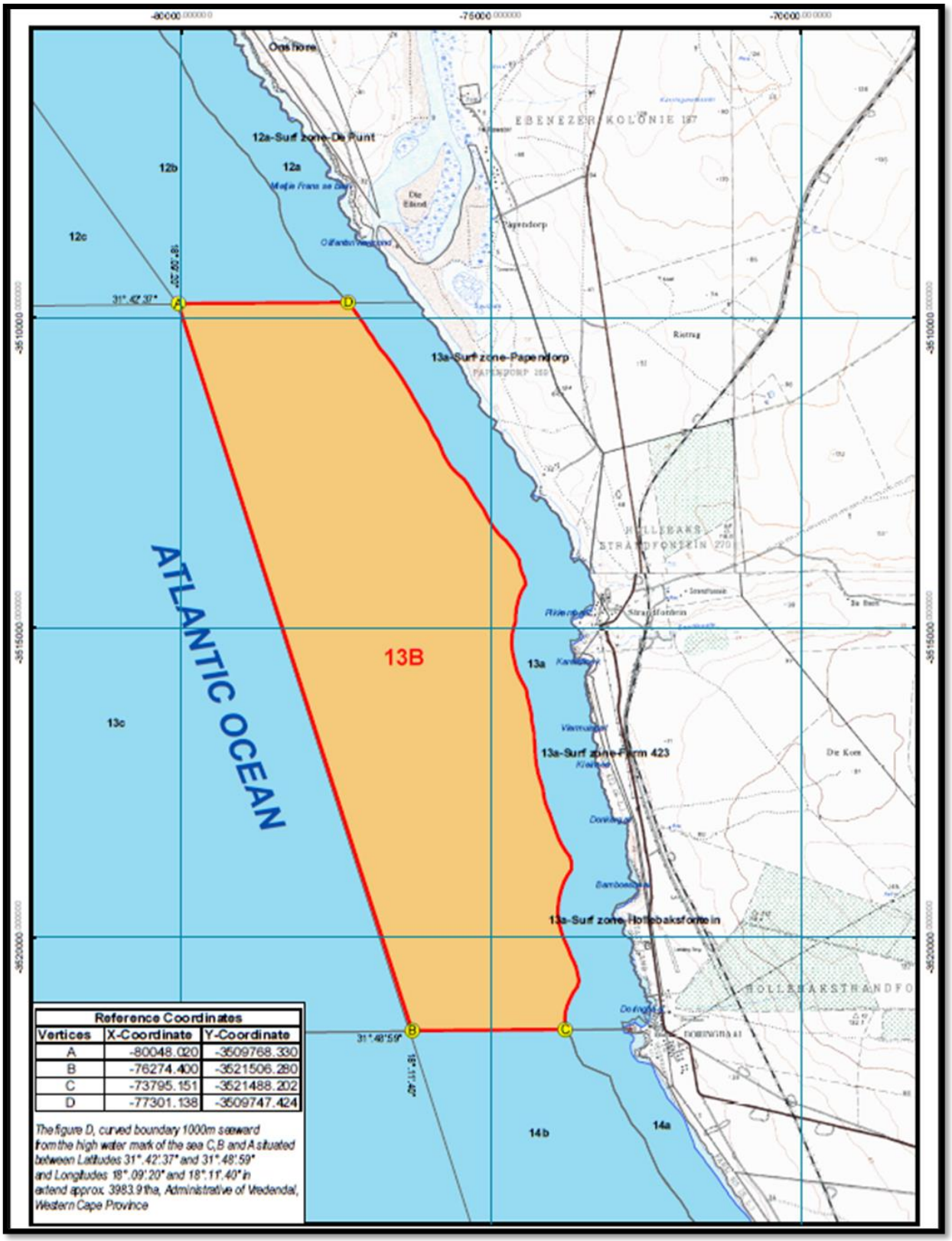


Figure 4: Regulation MAp

1.4.2 Description why the Geological formation substantiates the minerals to be prospected for.

Diamonds in the offshore environment are found in trap sites such as pothole, gullies and submerges beaches. A geophysical survey defined the following features which indicate a high potential for diamond entrapment.

1.4.2.1 Description of the Bathymetry

The water depth within the concession extends from –14m in the far north-eastern corner down to –64m in the southwestern corner. The relief of the sea floor changes considerably from large areas of sediment cover with uniform, gentle gradients to steep rocky cliffs in the central-west. The shift from sediment covered bathymetry to rocky bathymetry is extremely abrupt suggesting relatively deep sediment packages adjacent to steep rocky outcrops.

The extent and features of the outcropping rocks are easily apparent from observing the bathymetry. The isolated rocky clusters in the northern quarter of the concession display a somewhat subdued character, either indicating that they are partially covered by sediment or that they are just less ragged. Within the wide (1,4km) discontinuity between the northern reefs and the central reef lies the palaeo-Olifants River. This gorge has been completely filled in and masked by sediment. The average gradient of this sediment-covered seafloor is approximately 1:80.

The central reef is a prominent feature within the concession. It extends from west of Bruinpunt seaward in a WNW direction. The shallowest part of this feature is –27m, representing a 7 meter high pinnacle raised above the surrounding sediment. This pinnacle is situated approximately 2,5 km west of Pikkersbaai. The deepest isolated part of this reef is a small hollow 52 metre deep situated 150 meters inside of the seaward concession boundary and 100 metres north of 6,480,000mN utm grid line.

The sediment filled palaeo-Sandlaagte River channel dissecting the reef can be clearly seen. It extends from the present river mouth in a south westerly direction and then at the –50m water depth suddenly alters course by 90 and exits the reef into the southern basin. Another minor palaeo-river channel can be observed in the central northern half of the reef trending ESE-WNW.

The bathymetry highlights five distinct sediment basins of particular interest:

- The southern basin being the deepest from –30m to -64m.

A near-shore, elongated basin between –25m and –35m orientated roughly parallel to the shoreline.

- The Sandlaagte palaeo-channel.

A very large (±15km²) basin in the northern half of the concession with ware depths from 15 meters to +40 meters. The seafloor gradient sloping seaward is extremely uniform and regular suggesting a significant sediment thickness.

A northern irregular shaped basin with an indistinct boundary with water depths of between 30 meters and +50 meters.

1.4.2.2 Brief Description of the Seafloor Geology

The present seafloor reveals distinct boundaries between rocky outcrop and clastic sedimentary deposits. Five distinct sediment-filled areas have been recognised:

South of the large central reef lies an extension of a deep-water sediment wedge forming roughly a large (±4km²) circular basin. The depths to bedrock (water depth plus thickness of sediment) range from –30 meters, adjacent to the nearshore, to > -80 meters in the southwest. The sediment thickness in the centre of the basin is approximately 25m (Airgun data). The topography of the bedrock is moderately rugged and similar to the exposed central reef but representing a lower separate terrace.

West of Kleinsee lies a prominent palaeo-river channel orientated parallel to the coast. The channel is clearly visible from the airgun data as a tributary of the Sandlaagte palaeo-river. Depth to bedrock within the channel is approximately 50 meters with sediment thickness between 16 and 18 meters. The surrounding sediment thickness outside the centre of the channel averages generally, 6 – 10 metres. A straight ridge of rugged rock forms a significant barrier against the deep-sea swell bound the western edge of this basin.

The Sandlaagte palaeo-river channel is a prominent feature incising the central reef. This channel is presently choked with sediment. An Airgun estimated sediment thickness of ±30 meters for the first leg and 14 to 30 metres for the second leg orientated NE-SW. Depths to bedrock within isolated potholes along its course of ±65 meters occur with average depths between 50 and 60 meters.

The nearshore northern half of the concession consists of a large (±15km²) clastic sediment wedge. Sediment thickness and depths to bedrock vary considerably. Average depths to bedrock range from 30 to 50 meters in the area south of the Olifants palaeo-river and sediment thickness in an around the 20m mark. The topography of the bedrock in this area indicates relatively depressed relief.

The Olifants Palaeo-river valley lies submerged within the northern half of this basin and extends out beyond the western boundary of the concession. This river has incised deeply into the inner shelf and has been completely filled in by unconsolidated sediment. Sediment thickness within the channel, derived from airgun data, averages 40 meters with the thickest at 56 meters. Bedrock topography suggests that the palaeo-river has eroded a 20 to 30 meter gorge into the surrounding country rock.

A minor tributary of the Olifants palaeo-river trending parallel to the present shoreline and approximately 2.5km offshore, dominates the extreme northern part of the concession. Depths to bedrock average 50 meters and sediment thickness of approximately 18 meters occur.

The present day exposed rocky outcrops consist of a dominant central-western rugged to very rugged NNW-SSE trending peninsular and isolated outcrops of subdued rocks in the extreme south and north of the concession. A distinctive NW-SE and NE-SW pattern of jointing or faulting can be observed on the central reef. The course of the Sandlaagte palaeo-river has been dominated by this structure.

1.4.2.3 Beach Levels

Four prominent sea level stillstands were identified for presentation:

- -26 meter Level:

The entire central reef is submerged at this level and only about half of the nearshore sediment wedge is exposed The shape of the shoreline is similar to that of present day. Only that part of the reef adjacent to Bruinpunt and the subdued rocks in the far northeast are exposed at this level.

- -36 meter Level:

Approximately half of the concession is now exposed as well as large portions of the central reef. In the north and in the extreme south a beach break would have been visible with the central portion consisting of a rocky headland with two significant rocky islands further out.

- -41 meter Level:

At this level not much has changed from that described above except that slightly more of the central reef is now above water. The shoreline in and around the central reef is now extremely rugged with significant embayments and gullies. More than half of the concession is now above the water line.

- -50 meter Level:

Only between 10 and 20 percent of the concession is submerged. The shoreline at this level would probably be dominated by a large headland in the centre. No significant embayments or gullies can be identified.

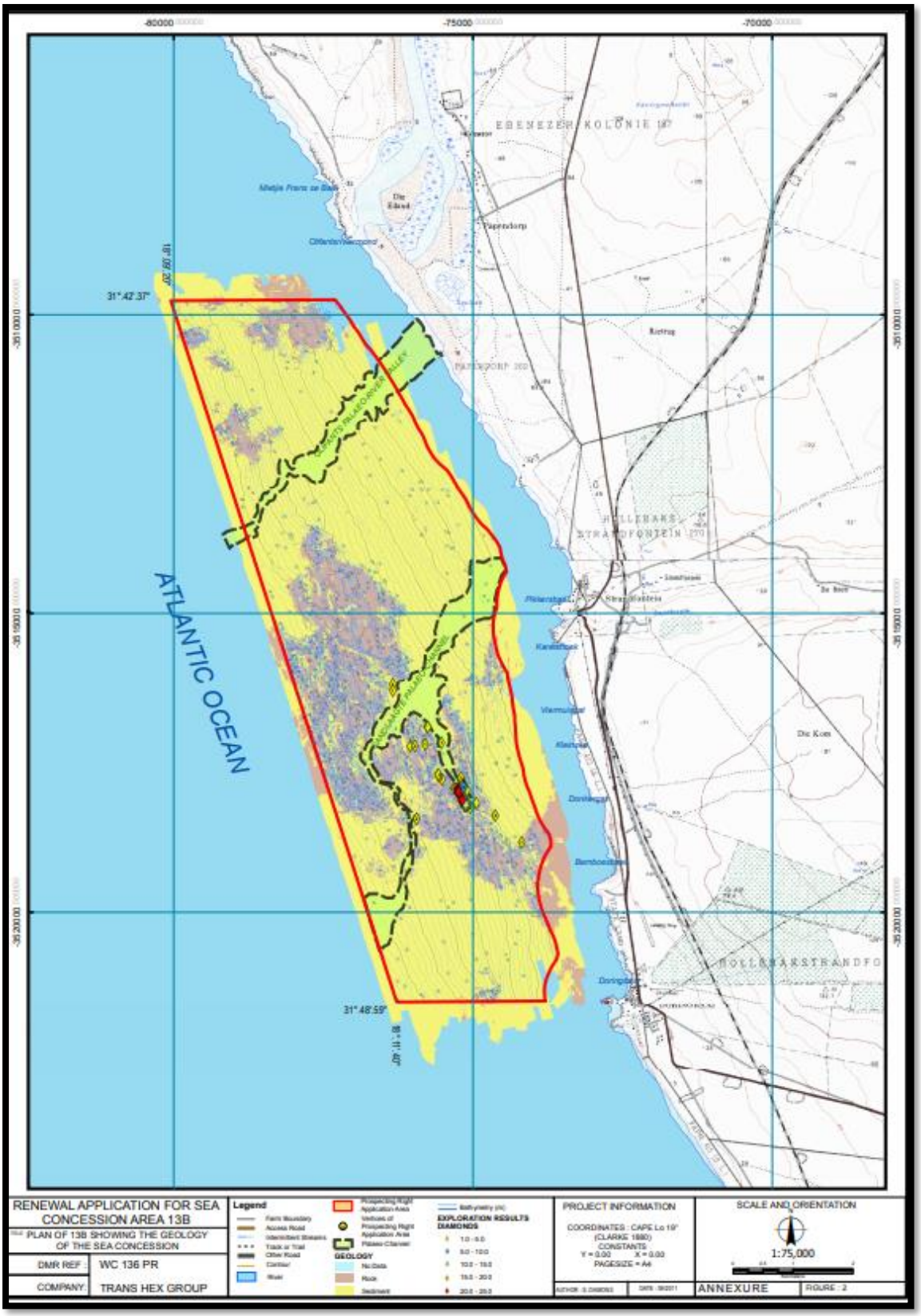


Figure 5: Geology of the application area.

2 DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

2.1 Listed and specified activities

NAME OF ACTIVITY **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc**	**Aerial extent of the Activity Ha or m²**	**LISTED ACTIVITY** (Mark with an **X** where applicable or affected).	**APPLICABLE LISTING NOTICE** **(*GNR 983, 984, 985)***	**WASTE MANAGEMENT AUTHORISATION** (Indicate whether an authorisation is required in terms of the Waste Management Act). **(Mark with an X)**
Listing 1,2 & 3- GNR 983,984 & 985 requiring a Basic Assessment				
Any activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).	Extent of application area: 3983.91 hectares	**X**	GNR 983 – Listing 1: Activity No. 20	N/A
The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource [,] ; or (b) [including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)] the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;) **<u>Drilling and Bulk Sampling (8790 m³)</u>**	4.2 ha	**X**	GNR 984 – Listing 2: Activity 19	N/A
The decommissioning of any activity requiring – (i) a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); or (ii) a prospecting right, mining right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure;	Extent of application area: 3983.91 hectares	**X**	GNR 983 – Listing 1: Activity No. 22	N/A

2.2 Description of the activities to be undertaken

The proposed diamond prospecting will entail non-invasive and invasive activities. A complete prospecting work program is detailed below.

2.2.1 Description Of Planned Non-Invasive Activities:

(These activities do not disturb the land where prospecting will take place e.g. aerial photography, desktop studies, aeromagnetic surveys, etc)

2.2.1.1 Geophysical Survey (Phase 1)

The geophysical surveying will be undertaken using a dedicated survey vessel, e.g., the DP Star which has a length of 45 m. The vessel is equipped with:

- a multibeam echosounder designed to produce high resolution digital terrain models of the seafloor in a wide swath below the vessel; and
- a sub-bottom profiler which can generate profiles up to 60 m beneath the seafloor, thereby giving a cross section view of the sediment layers.

Sound levels from the acoustic equipment would range between 190 to 220 dB re 1 µPa at 1 m. The proposed surveys would be undertaken in specific priority areas in the the concession, at water depths between approximately 30 to 70 m. The surveys would have a line spacing of between 100 to 1 000 m apart. The total line kilometres surveyed per concession will be between 600 and 1 200 km. The planned duration for the proposed geophysical surveys would be a total of 20 days.

In general terms, sound sources that have high sound pressure and low frequency will travel the greatest distances in the marine environment. Conversely, sources that have high frequency will tend to have greater attenuation over distance due to interference and scattering effects (Anon 2007). It is for this reason that the acoustic footprint of the above-mentioned sonar survey tools is considered to be much lower than that of deeper

penetration low frequency seismic surveys and in addition have lower sound pressure levels. It should be noted that a decibel is a logarithmic scale of pressure where each unit of increase represents a tenfold increase in the quantity being measured.

2.2.1.2 Interpretation of Geophysical Survey information (Phase 2)

With new software packages available on the market, all these data will be enhanced and processed.

2.2.2 Description Of Planned Invasive Activities:

(These activities result in land disturbances e.g. sampling, drilling, bulk sampling, etc)

2.2.2.1 Drilling – (Phase 3)

The proposed drill sampling activities would be undertaken using a dedicated sampling vessel, e.g., the MV The Explorer (shown below) which has an overall length of 114.4 m. The vessel is equipped with a subsea sampling tool, which can be operated in water depths up to 200 m. The sampling tool comprises a 2.5 m diameter drill bit operated from a drill frame structure, which is launched through the moon pool of the support vessel and positioned on the seabed.

The drill bit can penetrate sediments up to 12 m depth above bedrock. The sediments are fluidised with strong water jets and airlifted to the support vessel where they are treated in the onboard mineral recovery plant. All oversized and undersized tailings are discharged back to the sea on site. A sample spacing of as little as 20 m can be achieved by the dynamically positioned vessel. Depending on sea and the sub seabed geotechnical conditions, up to 60 samples can be successfully taken per day. The samples would be undertaken at intervals of 50 to 500 m. With a planned duration for the proposed drill sampling of 20 days for the concession area, the total number of 1200 drill samples would be obtained during the phase. As the drill has a footprint of 5m2, a total area of 0.6 ha would be sampled.

Figure 6: M/V the Explorer

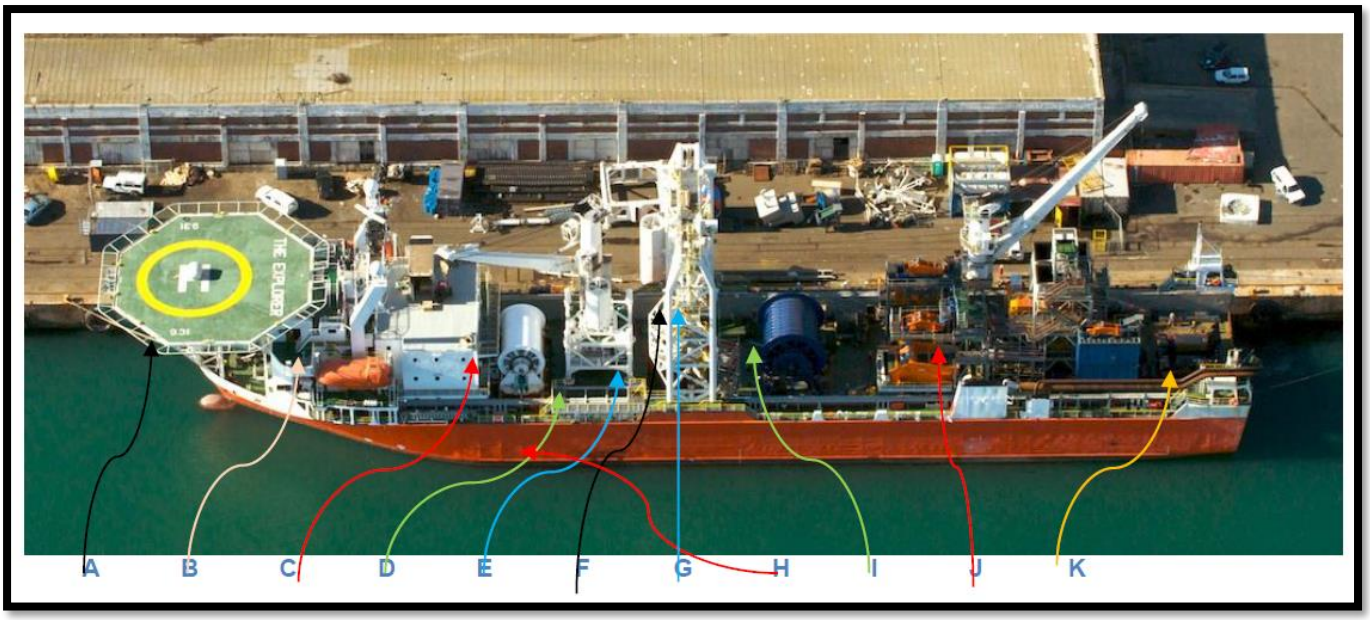


Figure 7: Overhead view and description of the vessel

A. Helicopter deck
B. Accommodation
C. Umbilical winch
D. Sliding door parking area
E. Moon Pool, A-frame and Tool area
F. Heave Compensators
G. Guide Constant Tension Winches
H. Main Hoist Winches
I. Slurry Hose Winch
J. Mineral Recovery Plant Area
K. Sampling Tool Power Generation Area

2.2.2.2 Bulk-Sampling (Phase 4)

Following analysis of the drill samples and establishment of a potential resource, bulk trench sampling may be conducted to confirm the economic viability of the resource for mining. Trenching would be undertaken by a seabed crawler, deployed off a dedicated mining vessel, the e.g., MV Ya Toivo which has a length of 150 m. The vessel is equipped with a track-mounted subsea crawler capable of working to depths up to 200m below sea level.

The crawler, which is fitted with highly accurate acoustic seabed navigation and imaging systems, and equipped with an anterior suction system, is lowered to the seabed and is controlled remotely from the surface support vessel through power and signal umbilical cables. Water jets in the crawler's suction loosen seabed sediments, and sorting bars filter out oversize boulders. The sampled sediments are pumped to the surface for shipboard processing. The area of the seabed to be sampled by crawler can only be determined following analysis of drill samples and development of a resource model.

It is proposed that up to ten trenches, each 180 m long and 20 m wide would be excavated within the concession area. Thus, the area to be disturbed in the concession would be 3.6 ha. The planned duration of the proposed bulk sampling would be a total of 10 days. It is noted that the trenches will not be contiguous, but located in the prospective areas derived from the drill sampling results. The aim of the trench sampling is to determine the geotechnical characteristics of the footwall and overburden which is essential in establishing the optimal approach to mining in these areas.

Phase	**Activity** (what are the activities that are planned to achieve optimal prospecting)	**Skill(s) required** (refers to the competent personnel that will be employed to achieve the required results)	**Timeframe** (in months) for the activity)	**Outcome** (What is the expected deliverable, e.g. Geological report, analytical results, feasibility study, etc.)	**Timeframe for outcome** (deadline for the expected outcome to be delivered)	**What technical expert will sign off on the outcome?** (e.g. geologist, mining engineer, surveyor, economist, etc)
1	**Non-evasive Prospecting** Geophysical Survey	Marine Geophysicist	0.66 Month	Side Scan Sonar Mosaic, Sub-bottom profiling, Bathymetry, Isopach's, Shape and Geometry of the Deposit	February 2023	Geologist
2	Processing of Phase 1 Geophysical Survey Information	Marine Geophysicist	1.5 Months	Shape and Geometry of the Deposit & Exploration Targets	April 2023	Geologist
3	**Invasive Prospecting** Offshore Trenching/Drilling	Geologist Mining Manager Labourers	0.66 Months	Representative samples for each defined feature. Detailed report on grade, stone size distribution, dilution factors and average carat price expressed in US$ per carat	May 2024	Geologist Metallurgist
4	**Bulk Sampling**	Geologist Mining Manager Labourers	0.33 Month	Detailed report on grade, stone size distribution, dilution factors and average carat price expressed in US$ per carat	October 2024	Geologist Metallurgist Mining Engineer
5	**Analytical Desktop Studies** (Orebody Development)	Geologist / Geostatistician / Mining Engineer	0.5 Month	Orebody Development; Geological Reports ; Pre-feasibility study Resource Statement Geological Maps	March 2025	Geologist

2.3 Minerals applied for:

DIAMONDS, GARNET (ABBRASIVE) (Gn), GOLD ORE (Au), GYPSUM (Gy), HEAVY MINERALS (GENERAL) (HM), KAOLIN CLAY (CK), KIESELGUHR (Ki), MINERAL (Lx), LIGNITE (L), MONAZITE (HEAVY MINERAL) (Mz), RARE EARTHS (RE), RUTILE (HEAVY MINERAL) (Rt), ZIRCONIUM ORE (Zr), LEUCOXCENE, ILMENITE

3 POLICY AND LEGISLATIVE CONTEXT

3.1.1 The South African Constitution

This section provides an overview of the legislative requirements applicable to this project and it includes the Acts, guidelines and policies considered in the compilation of this report. The legislative motivation for this project is underpinned by the Constitution of South Africa, 1996 (Act No. 108 of 1996), which states that:
The State must, in compliance with Section 7(2) of the Constitution, respect, protect, promote and fulfil the rights enshrined in the Bill of Rights, which is the cornerstone of democracy in South Africa. Section 24 of the Constitution:

24. Environment

-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-

(i) prevent pollution and ecological degradation;

(ii) promote conservation; and

(iii) secure ecologically sustainable development and use of natural resources while promoting a justifiable economic and social development.

Section 24 of the Constitution of South Africa (Act No. 108 of 1996) requires that all activities that may significantly affect the environment and require authorisation by law must be assessed prior to approval. In addition, it provides for the Minister of Environmental Affairs or the relevant provincial Ministers to identify:

- new activities that require approval;
- areas within which activities require approval; and
- existing activities that should be assessed and reported on.

Section 28(1) of the Constitution of South Africa (Act No. 108 of 1996) states that: *"every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring".* If such pollution or degradation cannot be prevented then appropriate measures must be taken to minimise or rectify such pollution or degradation. These measures may include:

- Assessing the impact on the environment;
- Informing and educating employees about the environmental risks of their work and ways of minimising these risks;
- Ceasing, modifying or controlling actions which cause pollution/degradation;
- Containing pollutants or preventing movement of pollutants;
- Eliminating the source of pollution or degradation; and
- Remedying the effects of the pollution or degradation.

Applicability: Public participation process and consultation at every stage of the EIA phase. A public participation process will be followed and consultations to be done regarding the proposed project. An EMP and awareness plan will be designed according to the issues raised during this process

3.1.2 National Environmental Management Act

The NEMA Act under sections 24(2), 24(5), 24D and 44, read with section 47A (1) (b) of National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014 as amended in April 2017, is regarded as one of the important pieces of general environmental legislation as it provides a framework for environmental law reform. The main objective of this act is to ensure that ecosystem services and biodiversity are protected and maintained for sustainable development. Furthermore, Section 28 (1) of the NEMA requires that "every person who causes has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring".

NEMA strives to regulate national environmental management policy and is focussed primarily on co-operative governance, public participation and sustainable development. NEMA makes provisions for co-operative environmental governance by establishing principles for decision making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by Organs of State and to provide for matters connected therewith.

A scoping report must contain the information that is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the environmental impact assessment process, and must include-

(a) details of-

I. the EAP who prepared the report; and

II. the expertise of the EAP, including a curriculum vitae;

(b) the location of the activity, including-

I. the 21 digit Surveyor General code of each cadastral land parcel;

II. where available, the physical address and farm name;

III. where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;

(c) a plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is-

I. a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or

II. *on land where the property has not been defined, the coordinates within which the activity is to be undertaken*;

(d) a description of the scope of the proposed activity, including-

I. all listed and specified activities triggered;

II. a description of the activities to be undertaken, including associated structures and infrastructure;

(e) a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;

(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;

(h) a full description of the process followed to reach the proposed preferred activity, site and location within the site, including-

I. details of all the alternatives considered;

II. details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;

III. a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;

IV. the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

V. the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts-

a) can be reversed;

b) may cause irreplaceable loss of resources; and

c) can be avoided, managed or mitigated;

VI. the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;

VII. positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

VIII. the possible mitigation measures that could be applied and level of residual risk;

IX. the outcome of the site selection matrix;

X. if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and

XI. a concluding statement indicating the preferred alternatives, including preferred location of the activity;

Applicability: Baseline environmental information of the project area will be assessed. Mitigation measures and recommendations where provided according to best practice standards. This scoping report complies with the requirements of the NEMA act.

3.1.3 Mineral and Petroleum Resources Development Act

The MPRDA makes provision, for persons to apply for a prospecting right. A prospecting right granted in terms of the MPRDA is a limited real right in respect of the type of resources and the land to which the permit relates. The holder of a prospecting right is entitled to the rights referred to in the MPRDA or any other law.

The applicant requires a prospecting right and environmental authorisation from the DMR. Acceptance of the application by DMR only permits the applicant to continue with the necessary process and does not constitute authorisation. The acceptance details the outstanding requirements for the application, which includes:

(a) the submission of an EMP; and
(b) notification and consultation with IAPs, including land owners or lawful occupiers of land, on which the proposed prospecting is to be conducted;
(c) Details on how the applicant will substantially and meaningfully expand opportunities for historically disadvantaged persons**.**

Applicability: A prospecting right application was lodged with the DMR

3.1.4 National Environmental Management: Integrated Coastal Management Act 24 of 2008 (as amended)

The National Environmental Management: Integrated Coastal Management Act 24 of 2008 aims:

- to establish a system of integrated coastal and estuarine management in the Republic, including norms, standards and policies, in order to promote the conservation of the coastal environment, and maintain the natural attributes of coastal landscapes and seascapes, and to ensure that development and the use of natural resources within the coastal zone is socially and economically justifiable and ecologically sustainable;
- to define rights and duties in relation to coastal areas;
- to determine the responsibilities of organs of state in relation to coastal areas;
- to prohibit incineration at sea;
- to control dumping at sea, pollution in the coastal zone, inappropriate development of the coastal environment and other adverse effects on the coastal environment;
- to give effect to South Africa's international obligations in relation to coastal matters; and
- to provide for matters connected therewith.

The National Environmental Management: Integrated Coastal Management Amendment Act 36 of 2014 aims:

- to amend the National Environmental Management: Integrated Coastal Management Act, 2008, so as:
- to amend certain definitions;
- to clarify coastal public property and the ownership of structures erected on and in coastal public property;
- to remove the power to exclude areas from coastal public property;
- to clarify and expand the provisions on reclamation;
- to clarify definitions and terminology;
- to simplify the administration of coastal access fee approvals;
- to simplify and amend powers relating to coastal authorisations;
- to replace coastal leases and concessions with coastal use permits;
- to extend the powers of MECs to issue coastal protection notices and coastal access notices;
- to limit the renewal of dumping permits;

- to simplify the composition and functions of the National Coastal Committee;
- to clarify the powers of delegation by MECs;
- to revise offences and increase penalties;
- to improve coastal authorisation processes;
- to provide for exemptions;
- to provide for transitional matters;
- to effect certain textual alterations; and
- to provide for matters connected therewith.

Applicability: The active prospecting ill have adverse impacts on coastal processes both f social and environmental which need to be assessed and mitigated.

3.1.5 National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)

The overarching aim of the National Environmental Management: Biodiversity Act, 2004 (NEMBA), within the framework of NEMA, is to provide for:

- *The management and conservation of biological diversity within South Africa as well as for the components of such biological diversity;*
- *The use of indigenous biological resources in a sustainable manner and*
- *The fair and equitable sharing among stakeholders of benefits arising from bio-prospecting involving indigenous biological resources.*

As part of its implementation strategy of NEMBA, the National Spatial Biodiversity Assessment was developed. This assessment classifies areas as worthy of protection based on its biophysical characteristics, which are ranked according to priority levels. The approach used for biodiversity planning is systematic and entails the following three key principles:

- *The need to conserve a representative sample of biodiversity pattern, such as species and habitats (the principle of representation);*
- *The need to conserve the ecological and evolutionary processes that allow biodiversity to persist over time (the principle of persistence); and*
- *The need to set quantitative biodiversity targets that quantifies the degree of conservation required for each biodiversity feature in order to maintain functioning landscapes and seascapes.*

Furthermore, the South African National Biodiversity Institute (SANBI) was established by the NEMBA, its purpose being (*inter alia*) to report on the status of the country's biodiversity and the conservation status of all listed threatened or protected species and ecosystems. NEMBA provides for a range of measures to protect ecosystems and for the protection of species that are threatened or in need of protection to ensure their survival in the wild, including a prohibition on carrying out a "restricted activity" involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 8 of the Act. Lists of critically endangered, endangered, vulnerable and protected species have been published and a permit system for listed species has been established.

It is also appropriate to undertake a Marine Biodiversity Impact Assessment for developments in an area that is considered ecologically sensitive, and which requires environmental authorisation in terms of NEMA, with such assessment taking place during the Scoping or EIA phase. The Applicant is therefore required to take appropriate reasonable measures to limit the impacts on biodiversity, to obtain permits if required.

Applicability: A Marine Biodiversity Impact Assessment study will be required.

3.1.6 National Forest Act, 1998 (Act 84 of 1998)

The purposes of National Forest Act, 1998 (act 84 of 1998) (NFA) includes *inter alia:*

(*c) provide special measures for the protection of certain forests and trees:*

(d) promote the sustainable use of forests for environmental, economic, educational, recreational, cultural, health and spiritual purposes.

Applicability: Impact and mitigation measures to be implemented for the bulk sampling vessels and vehicles associated with the prospecting i.e., driving to the harbour.

3.1.7 National Environmental Management: Air Quality Act (Act No 39 of 2004)

Section 28 (1) of NEMA places a general duty of care on any person who causes pollution, to take reasonable measures to prevent such pollution from occurring. The objective of the National Environmental Management: Air Quality Act, 2004 (NEM: AQA) is to regulate air quality to protect, restore and enhance the quality of air in the Republic, taking into account the need for sustainable development. Furthermore, the provision of national norms and standards regulating air quality monitoring, management and the control by all spheres of government determine that specific air quality measures should be adhered to. Dust created during the construction and operational phases of the proposed prospecting could influence air quality and thus make this legislation relevant to this development. Air quality management and mitigation measures during the operational phase will be considered to be a measure to exercise this duty of care, since it aim to minimise volumes of dust emissions emanating from the operational activities.

Applicability: An air emission license will not be required but air quality monitoring will be implemented.

3.1.8 Conservation of Agricultural Resources Act (Act 43 of 1983)

The aim of the Conservation of Agricultural Resources Act,1983 (Act 43 of 1983) (CARA) is to provide for control over the utilisation of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants and for matters connected therewith. The EIA phase of the project will take into account the requirements of CARA as well as determine the potential direct and indirect impacts on agricultural resources as a result of the proposed prospecting development.

Applicability: Impact and mitigation measures to be implemented for the bulk sampling vessels and vehicles associated with the prospecting i.e., driving to the harbour and land based activities.

3.1.9 National Environmental Management: Waste Act (Act 59 of 2008)

The National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEM:WA) and Waste Classification and Management Regulations, 2003 (GNR: 634 – 635): To reform the law regulating waste management in order to protect

health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.

The operational activities associated with the proposed prospecting program shall be in accordance with the requirements of National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEM: WA) and Waste Classification and Management Regulations, 2003 (GNR: 634 – 635). The proposed project does not require waste management licencing.

3.1.10 Occupational Health and Safety Act (Act 85 of 1993)

The aim of the Occupational Health and Safety Act, 1993 (act 85 of 1993) (OHSA) is to provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery ; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety as well as to provide for matters connected therewith.

Section 8 which deals with the general duties of employers and their employees states that:

1) *"Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of the employees."*
2) *''Without derogating from the generality of an employer's duties under subsection (1), the matters to which those duties refer include in particular:*
    a. *The provision and maintenance of systems of work, plant and machinery that, as far as reasonably practicable, are safe and without risk to health;*
    b. *Taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety and health of employees;*
    c. *Making arrangement for ensuring as far as reasonably practicable, the safety and absence of risks to health relating to the production, processing, use, handling, storage and transport of articles or substances;*
    d. *Establishing, as far as reasonably practicable, what hazards to the health or safety of persons are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in his business, and he shall, as far as reasonably practicable, further establish what precautionary measures should be taken with respect to such work, article, substance, plant or machinery in order to protect the health and safety of persons, and he shall provide the necessary means to apply such precautionary measures;*
    e. *Providing such information, instruction, training and supervision as may be necessary to ensure, as far as reasonably practicable, the health and safety of employees;*
    f. *As far as reasonably practicable, not permitting any employee to do any work or to produce, process, use, handle, store, or transport any article or substance or to operate any plant or machinery, unless precautionary*

measures contemplated in paragraph (b) and (d), or any precautionary measures which may be prescribed, have been taken;

g. *Taking all necessary measures to ensure that the requirements of this act are complied with by every person in his employment or on the premises under his control where plant and machinery is used;*
h. *Enforcing such measures as may be necessary in the interest of health and safety;*
i. *Ensuring that work is performed, and that plant and machinery is used under the general supervision of a person trained to understand the hazards associated with it and who has the authority to ensure that precautionary measures taken by the employer are implemented and*
j. *Causing any employees to be informed regarding the scope of their authority as contemplated in section 37(1)(b).''*

3.1.11 National Heritage Resources Act

National Heritage Resource Act, 1999 (Act No. 25 of 1999)

The proposed diamond prospecting project by Moonstone Diamond Marketing must comply with the requirements stipulated in the National Heritage Resources Act, 1999 (Act 25 of 1998) (NHRA). The NHRA legislates the necessity for cultural and Heritage Impact Assessment (HIA) in areas earmarked for development, which exceed 0.5 ha or linear development exceeding 300 metres in length. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

Section 38(1) of NHRA, subject to the provisions of subsections (7), (8) and (9), requires that any person who intends to undertake a development categorised as:

(a) *The construction of **a road**, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
(b) *The construction of a bridge or similar structure exceeding 50m in length;*
(c) *Any development or other activity which will change the character of a site-*

(i)Exceeding 5 000 m^2 in extent; or

(ii)Involving three or more existing erven or subdivisions thereof; or

(iii)Involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv)The costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) *The re-zoning of a site exceeding 10 000 m^2 in extent; or*
(e) *Any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage*

resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Archaeological impact assessments (AIAs) are often commissioned as part of the heritage component of an EIA and are required under Section 38(1) of the NHRA of 1999, Section 38(8) of the NEMA and the MPRDA.

The process of archaeological assessment usually takes the form of:

1. A scoping or initial pre-assessment phase where the archaeologist and developer's representative establish the scope of the project and terms of reference for the project;
2. A Phase 1 AIA;
3. A Phase 2 archaeological mitigation proposal; and
4. A Phase 3 heritage site management plan.

Phase 1: Archaeological Impact Assessment

A Phase 1 AIA generally involves the identification and assessment of sites during a field survey of a portion of land that is going to be affected by a potentially destructive or landscape altering activity. The locations of the sites are recorded, and the sites are described and characterised. The archaeologist assesses the significance of the sites and the potential impact of the development on the sites and makes recommendations. It is essential that the report supply the heritage authority with sufficient information about the sites to assess, with confidence, whether or not it has any objection to a development, indicate the conditions upon which such development might proceed and assess which sites require permits for destruction, which sites require mitigation and what measures should be put in place to protect sites that should be conserved.

Minimum standards for reports, site documentation and descriptions are clearly set out by the SAHRA and supported by the Association of Southern African Professional Archaeologists (ASAPA). The sustainable conservation of archaeological material (*in situ*) is always the best option for any sites that are deemed to be of importance. The report needs to indicate which sites these are, explain why they are significant and recommend management measures. In certain kinds of developments which involve massive intervention (prospecting, dam construction, etc.), it is not possible to reach a conservation solution other than to develop a programme of mitigation which is likely to involve the total or partial "rescue" of archaeological material and its indefinite storage in a place of safety.

Phase 2: Archaeological Mitigation Proposal

If the Phase 1 report finds that certain archaeological sites in a development area are of low significance, it is possible to seek permission from the heritage authority for their destruction. The final decision is then taken by the heritage resources authority, which should give a permit or a formal letter of permission, or in the case of an EIA issue a comment allowing destruction.

Phase 2 archaeological projects are primarily based on salvage or mitigation excavations preceding development that will destroy or impact on a site. This may involve collecting of artefacts from the surface, excavation of representative samples of the artefact material to allow characterisation of the site and the collection of suitable materials for dating

the sites. The purpose is to obtain a general idea of the age, significance and meaning of the site that is to be lost and to store a sample that can be consulted at a later date for research purposes. Phase 2 excavations should be done under a permit issued by SAHRA, or other appropriate heritage agency, to the appointed archaeologist. Permit conditions are prescribed by SAHRA, or other appropriate heritage agencies. Conditions may include as minimum requirements reporting back strategies to SAHRA, or other appropriate heritage agencies and/or deposition of excavated material at an accredited repository.

Should further material be discovered during development, this must be reported to the archaeologist or to the heritage resources authority and it may be necessary to give the archaeologist time to rescue and document the findings. In situations where the area is considered archaeologically sensitive the developer will be asked to have an archaeologist monitor earth-moving activity.

Phase 3: Management plan for conservation and planning, site museums and displays

On occasion Phase 2 may require a Phase 3 program involving one of the following:

- The modification of the site;
- The incorporation of the site into the development itself as a site museum;
- A special conservation area; or
- A display.

Alternatively, it is often possible to re-locate or plan the development in such a way as to conserve the archaeological site or any other special heritage significance the area may have. For example, in a wilderness or open space areas where such sites are of public interest, the development of interpretative material is recommended since it adds value to the development. Permission for the development to proceed can be given only once the heritage resources authority is satisfied that measures are in place to ensure that the archaeological sites will not be damaged by the impact of the development or that they have been adequately recorded and sampled. Careful planning can minimise the impact of archaeological surveys on development projects by selecting options that cause the least amount of inconvenience and delay. The process as explained above allows the rescue and preservation of information relating to our past heritage for future generations. It balances the requirements of developers and the conservation and protection of our cultural heritage as required of SAHRA and the provincial heritage resources authorities.

Applicability: Marine Heritage and palaeontology assessment will be conducted Proper management and mitigation measures will be recommended in the EIAR including chance find protocols.

3.1.12 National Water Act, 1998 (Act No.36 of 1998)

The National Water Act, 1998 (Act 36 of 1998) (NWA) aims to provide management of the national water resources to achieve sustainable use of water for the benefit of all water users. This requires that the quality of water resources is protected as well as integrated management of water resources with the delegation of powers to institutions at the regional or catchment level.

The purpose of the NWA is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways, which take into account:

- Meeting the basic human needs of present and future generations;
- Promoting equitable access to water;
- Redressing the results of past racial discrimination;
- Promoting the efficient, sustainable and beneficial use of water in the public interest;
- Facilitating social and economic development;
- Providing for growing demand for water use;
- Protecting aquatic and associated ecosystems and their biological diversity;
- Reducing and preventing pollution and degradation of water resources;
- Meeting international obligations and
- Managing floods and droughts.

Section 21 of the National Water Act, 1998 (No. 36 of 1998) (NWA) lists water uses for which a Water Use License (WUL) must be obtained. Uses with potential relevance to the proposed prospecting include:

Section 21 (a) Taking of water from a water resource (surface or groundwater).
Section 21 (b) Storing of water (not containing waste).
Section 21 (c) Impeding or diverting the flow of water in a water course.
Section 21 (e) Engaging in a controlled activity:
Section 21 (i) altering the beds, banks, course or characteristics of a water course.

The Department of Water and Sanitation (DWS) has published various General Authorizations (GA) in terms of Section39 of the NWA which, replace the need for a water user to apply for a license in terms of the NWA for specific activities. The GAs have been revised and amended at different times.

The GAs set out specific conditions under which a water use may occur without a license and also specify the conditions or thresholds at which a user must register the use with the DWA.

Due to the nature of activities no water use license will be required however mitigation measures for protection of water resources will be implemented.

Other Applicable National legislations

- Hazardous Substances Act, 1973 (Act No. 15 of 1973);
- Roads Ordinance Amendment Act, 1998 (Act No. 17 of 1998);
- South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998);

3.2 Provincial Legislative Framework

Table 3: Provincial legislation, policies and guidelines considered

Western Cape Provincial Spatial Development Framework (SDF) and SDF Rural Land Use Planning & Management Guidelines (2009)	Used in the BAR to identify Need and Desirability	Guideline considered during the assessment of the need and desirability of the proposed development, at the provincial scale.
MATZIKAMA IDP REVISION TWO 2019-2020 2017-2022	Source of background demographic and socio-economic information	Utilized as a source of demographic and socio-economic information for the Matzikama Municipal area.
The National Environmental Management: Integrated Coastal Management Act 24 of 2008	The application covers areas along the coast. Source of buffer zones and access to the beach areas.	To control dumping at sea, pollution in the coastal zone, inappropriate development of the coastal environment and other adverse effects on the coastal environment.
The National Environmental Management: Protected Areas Act 57 of 2003 (NEMPAA)	Identification of protected areas and ecological support areas.	Assessment and mitigation of direct impacts and cumulative impacts on protected areas.
Spatial Planning Land Use and Management Act, 2013 (No 16 of 2013) Western Cape Land Use Planning Act, 2014 (No 3 of 2014) National Environmental Management: Waste Act, 2008; List of waste management activities promulgated in GN No. 921 of 29 November 2013 (as amended); National Waste Information Regulations promulgated in GN No. R. 625 of 13 August 2012; National Norms and Standards for the Storage of Waste promulgated in GN No. 926 of 29 November2013; and Waste Classification and Management Regulations promulgated in GN No. R. 634 of 23 August 2013.		

3.2.1 Applicable Legislation and Approvals Required

The proposed diamond prospecting project requires the following main approvals before the project may commence:

- Prospecting right and Environmental authorization from the Department of Mineral Resources in terms of the MPRDA (Act 28 of 2002) and National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations as amended.
- Approval of an environmental management programme, in terms of the **Mineral and Petroleum Resources Development Act** (No 28 of 2002) (MPRDA), by the Department of Mineral Resources.

In addition to the main legal approvals, the following approvals will be required:

- The South African Heritage Resources Agency needs to approve a heritage assessment, to be conducted as part of the overall EIA process, in terms of the **National Heritage Resources Act** (No 25 of 1999). Permits will be required for the destruction or removal of any heritage resources affected by the development if any.
- Should protected species be affected, permits will have to be obtained for their removal, relocation or destruction. This is in terms of the **National Environmental Management: Biodiversity Act** (No 10 of 2004).

4 PROJECT ALTERNATIVES

Feasible and reasonable alternatives must be identified for a development as required by the NEMA EIA Regulations and applicable to EIA. Each alternative is to be accompanied by a description and comparative assessment of the advantages and disadvantages that such development and activities will pose on the environment and socio-economy. When no feasible and/or reasonable alternatives could be identified and investigated in terms of a comparative assessment during the Scoping phase, the EIAR will then not contain a section with alternative. Alternatives forms a vital part of the initial assessment process through the consideration of modifications in order to prevent and/or mitigate environmental impacts associated with a particular development. Alternatives are to be amended when the development's scope of work is amended. It is vital that original as well as amended alternative identification, investigation and assessment together with the generation and consideration of modifications and changes to the development and activities are documented.

The EIA Regulations defines alternatives as the different means of meeting the general purpose and requirements of the activity, which may include alternatives to:

a) The property on which or location where it is proposed to undertake the activity;
b) The type of activity to be undertaken;
c) The design or layout of the activity;
d) The technology to be used in the activity
e) The operational aspects of the activity and
f) The option of not implementing the activity.

Although an array of alternatives could be investigated for each project, such alternatives will not necessarily be applicable to each project and/or project phase. However, there must always be strived to seek alternatives that maximises efficient and sustainable resource utilisation and minimise environmental impacts.

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

4.1.1 General Geology.

The present seafloor reveals distinct boundaries between rocky outcrop and clastic sedimentary deposits. Five distinct sediment-filled areas have been recognised:

South of the large central reef lies an extension of a deep-water sediment wedge forming roughly a large (±4km^2) circular basin. The depths to bedrock (water depth plus thickness of sediment) range from –30 meters, adjacent to the nearshore, to > -80 meters in the southwest. The sediment thickness in the centre of the basin is approximately 25m (Airgun data). The topography of the bedrock is moderately rugged and similar to the exposed central reef but representing a lower separate terrace.

West of Kleinsee lies a prominent palaeo-river channel orientated parallel to the coast. The channel is clearly visible from the airgun data as a tributary of the Sandlaagte palaeo-river. Depth to bedrock within the channel is approximately 50 meters with sediment thickness between 16 and 18 meters. The surrounding sediment thickness outside the centre of the channel averages generally, 6 – 10 metres. A straight ridge of rugged rock forms a significant barrier against the deep-sea swell bound the western edge of this basin.

The Sandlaagte palaeo-river channel is a prominent feature incising the central reef. This channel is presently choked with sediment. An Airgun estimated sediment thickness of ±30 meters for the first leg and 14 to 30 metres for the second leg orientated NE-SW. Depths to bedrock within isolated potholes along its course of ±65 meters occur with average depths between 50 and 60 meters.

The nearshore northern half of the concession consists of a large (±15km^2) clastic sediment wedge. Sediment thickness and depths to bedrock vary considerably. Average depths to bedrock range from 30 to 50 meters in the area south of the Olifants palaeo-river and sediment thickness in an around the 20m mark. The topography of the bedrock in this area indicates relatively depressed relief.

The Olifants Palaeo-river valley lies submerged within the northern half of this basin and extends out beyond the western boundary of the concession. This river has incised deeply into the inner shelf and has been completely filled in by unconsolidated sediment. Sediment thickness within the channel, derived from airgun data, averages 40 meters with the thickest at 56 meters. Bedrock topography suggests that the palaeo-river has eroded a 20 to 30 meter gorge into the surrounding country rock.

A minor tributary of the Olifants palaeo-river trending parallel to the present shoreline and approximately 2.5km offshore, dominates the extreme northern part of the concession. Depths to bedrock average 50 meters and sediment thickness of approximately 18 meters occur.

The present day exposed rocky outcrops consist of a dominant central-western rugged to very rugged NNW-SSE trending peninsular and isolated outcrops of subdued rocks in the extreme south and north of the concession. A distinctive NW-SE and NE-SW pattern of jointing or faulting can be observed on the central reef. The course of the Sandlaagte palaeo-river has been dominated by this structure. The sediment may have been reworked and concentrated by subsequent transgressive events and are thus seen as a favourable environment for potential diamond concentration.

- Previous Studies

Preliminary exploration targets can be identified from the interpretation to date, but in order to precisely delineate and identify specific areas of diamond concentration these initial features should be ground-truthed. A study of wave refraction patterns, at different sea levels, would further aid in the delineation of the best potential exploration sites.

In general Concession 13b warrants further exploration work as it's proximity to known heavy minerals point sources and favourable trap environments, identified within the small survey area, suggests excellent potential as an area of diamond accumulation and concentration. The application is prompted by the fact that currently diamond is being mined adjacent to the proposed project area.

4.1.1.1 The property on which or location where it is proposed to undertake the activity;

The 13(b)-concession prospecting right application area was chosen through past prospecting activities by Trans Hex on the area. These prospecting results show that a probable diamond mineral resources on the concession exists therefore no other site has been considered for the project and this assessment.

4.1.1.2 Minerals applied for

No alternative activities were considered for the project and this assessment. The type of activity to be undertaken is prospecting for DIAMONDS, GARNET (ABBRASIVE) (Gn), GOLD ORE (Au), GYPSUM (Gy), HEAVY MINERALS (GENERAL) (HM), KAOLIN CLAY (CK), KIESELGUHR (Ki), MINERAL (Lx), LIGNITE (L), MONAZITE (HEAVY MINERAL) (Mz), RARE EARTHS (RE), RUTILE (HEAVY MINERAL) (Rt), ZIRCONIUM ORE (Zr), LEUCOXCENE, ILMENITE

4.2 Feasible alternatives

4.2.1 Location

No alternatives have been investigated in terms of location due to the geological formation of the area. Should the proposed prospecting site be relocated to another location the applicant will not be able to utilise the resource potential.

4.2.2 Activity

In terms of the technologies proposed, these have been chosen based on the long-term success of these types in the prospecting and mining industry. The prospecting activities proposed in the Prospecting Works Programme is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

4.2.3 Design or layout

Based on the underlying geology the proposed pitting and bulk sampling areas follow the ore bearing lithology hence the selected areas are optimal for resources evaluation.

4.2.4 Technological

Recycling: The prospecting project will in its operational phase implement recycling policies and measures for optimal utilisation of resources and minimisation of waste generation.

Stores and Material: A containerized storage for waste management on the vessels will be used, to hold a limited store of high use items such as oils, grease, air filters etc. These stores will meet the requirements of the various health and safety and environmental legislation.

Electricity: Electricity is sourced from a mobile generator.

Water: Potable water will be stored on the prospecting vessels.

Access Roads: The existing access tracks on site will be used to access the harbour. No new roads will be developed.

Energy:

Fuel types will be investigated as well as energy conserving measures will be implemented i.e. prospecting times will be during the day to save on using lights in the evening.

4.2.5 Operational Aspects

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewer age facilities are required. Moonstone Diamond Marketing intends to make use of standard prospecting methods that enable safe prospecting which has the having the lowest risk of causing health risks or environmental degradation. Impact associated with the bulk sampling operations will be managed through the implementation of a management plan, developed as part of the application for authorisation and rehabilitation of the bulk sampled areas.

4.2.6 No Project Alternative

Not undertaking the prospecting will prevent disturbances and potential impacts to the natural environment and fisheries activities as described in this assessment. These impacts are mostly limited in extent and duration, but some are potentially high risk while they occur.

Not undertaking the prospecting activity will lead to sterilisation of resources as well as the potential socio-economic benefits that will arise with this opportunity.

4.2.7 Need and desirability of the proposed activities.

When considering an application for Environmental Authorisation (EA), the competent authority must comply with section 24O of the National Environmental Management Act, No 107 of 1998 (NEMA), and must have regard for any guideline published in terms of section 24J of the Act and any minimum information requirements for the application. This includes this need and desirability guideline. Additionally, the Environmental Impact Assessment (EIA) regulations require environmental assessment practitioners (EAPs) who undertake environmental assessments, to have knowledge and take into account relevant guidelines. A person applying for an EA must abide by the regulations, which are binding on the applicant.

This guideline contains information on best practice and how to meet the peremptory requirements prescribed by the legislation and sets out both the strategic and statutory context for the consideration of the need and desirability of a

development involving any one of the NEMA listed activities. Need and desirability is based on the principle of sustainability, set out in the Constitution and in NEMA, and provided for in various policies and plans, including the National Development Plan 2030 (NDP). Addressing the need and desirability of a development is a way of ensuring sustainable development – in other words, that a development is ecologically sustainable and socially and economically justifiable – and ensuring the simultaneous achievement of the triple bottom-line. The Guideline sets out a list of questions which should be addressed when considering need and desirability of a proposed development. These are divided into questions that relate to ecological sustainability and justifiable economic and social development. The questions that relate to ecological sustainability include how the development may impact ecosystems and biological diversity; pollution; and renewable and non-renewable resources. When considering how the development may affect or promote justifiable economic and social development, the relevant spatial plans must be considered, including Municipal Integrated Development Plans (IDP), Spatial Development Frameworks (SDF) and Environmental Management Frameworks (EMF). The assessment reports will need to provide information as to how the development will address the socio-economic impacts of the development, and whether any socio-economic impact resulting from the development impact on people's environmental rights. Considering the need and desirability of a development entails the balancing of these factors.

The identified specialist will use the following to assess the impacts of the proposed projects on the following aspects to determine the recommendation of the project go-ahead in terms of need and desirability:

- "securing ecological sustainable development and use of natural resources"
- How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?
- How were the following ecological integrity considerations taken into account?:
    1. Threatened Ecosystems
    2. Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure
    3. Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs"),
    4. Conservation targets,
    5. Ecological drivers of the ecosystem,
    6. Environmental Management Framework,
    7. Spatial Development Framework, and
    8. Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.)
- How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where

these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts

- How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?
- What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?19
- How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?
- How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?
- How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?
- Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life)
- Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources this the proposed development alternative?)

Significant advances in surveying, sampling and recovery techniques have made South Africa's extensive marine deposits accessible. Although the sizes of these diamonds are generally smaller than diamonds produced inland, the quality is unsurpassed. All of these deposits originally coming from kimberlites in South Africa, which were washed down the Orange River and deposited at the river mouth as well as along the coastlines of Namibia and South Africa.

Methods of recovering diamonds vary from shore-diving to specialised ships, namely a horizontal system, in which a seabed crawler brings diamond-bearing gravels to the vessel through flexible slurry hoses; and a vertical system, in which a large-diameter drilling device mounted on a compensated steel pipe drill string, recovers diamond-bearing gravels from the seabed following a systematic pattern over the mining block.

Bulk samples extracted under the scenario described above in South Africa should fall within the definition provided in Section 20(1) of the MPRDA, and it should not be necessary to get permission in terms of Section 20(2) of the Act to remove and dispose of minerals. However, in view of the experience of application of the law by the Department of Minerals Resources, it would however be wise to apply for the Section 20(2) permission simultaneously with the application for a prospecting right.

5 PUBLIC PARTICIPATION (Refer to Appendices for proof of preliminary consultation)

Appendix 3 - NEMA Acknowledgment letter
Appendix 4 - Screening Report
Appendix 5 – Advert
Appendix 6 – Afrikaans Background information document
Appendix 7 - English Background information document
Appendix 8 - Background information document delivery
Appendix 9 - 13b Site Notice in Afrikaans
Appendix 10 - 13b Site Notice
Appendix 11- Site Notices Placement Pictures
Appendix 12 - Project Notification and BID email

5.1 Public Participation Process to be followed

This section of the report provides an overview of the tasks undertaken for the PPP to date. All PPP undertaken is in accordance with the requirements of the EIA Regulations (2014). It further provides an outline of the next steps in the PPP and makes recommendations for tasks to be undertaken during the environmental assessment phase of the environmental authorisation process.

Adjacent concession holders were identified through a search conducted via online search engines accessing the DMR database. In addition to concession holders, other relevant organisations were identified and notified of the application. This includes municipal and State departments with jurisdiction in the area and Non-governmental Organisations (NGOs) with an interest.

The PPP tasks conducted for the proposed project to date include:

1. Identification of key Interested and Affected Parties (affected and adjacent landowners) and other stakeholders (organs of state and other parties);
2. Formal notification of the application to key Interested and Affected Parties (all adjacent landowners) and other stakeholders;
3. Consultation and correspondence with I&AP's and Stakeholders and the addressing of their comments; and
4. Newspaper adverts.

I&AP and Stakeholder identification, registration and the creation of an electronic database

Public Participation is the involvement of all parties who are either potentially interested and or affected by the proposed development. The principle objective of public participation is to inform and enrich decision-making. This is also its key role in this Environmental Impact Assessment (EIA) process.

Interested and Affected parties (I&APS) representing the following sectors of society has been identified:

- National, provincial and local government;
- Agriculture, including local landowners;
- Community Based Organisations;

- Non-Governmental Organisations;
- Water bodies;
- Fisheries:
- Tourism;
- Industry and mining;
- Commerce; and
- Other stakeholders.

5.1.1 Formal notification of the application to key Interested and Affected Parties (adjacent landowners) and other stakeholders

The project was announced as follows:

1. Newspaper advertisement

An advertisement was placed in a local newspaper in both English and Afrikaans announcing the release of the scoping report and the project announcement. The local newspaper Ons Kontrei, published the advert on the 13th of August 2021.

2. Site notice placement

To inform surrounding communities and adjacent landowners of the proposed development, site notices in both English and Afrikaans were erected on site and at visible locations close to the site. Site Notices were placed near the project area on the 16th of August 2021 as follows:

1. Vredendal Shoprite shopping Centre
2. Van Rhynsdorp Municipality office
3. Van Rhynsdorp Library
4. Matzikama Local Municipality (Vredendal)
5. Vredendal Library
6. Matzikama Museum
7. Vredendal Spar shopping Centre
8. Vredendal Taxi Rank
9. Vredendal Clinic
10. Vredendal Post office
11. Vredendal Police station
12. Doring Bay Municipality office
13. Doring bay Police station
14. Strandfontein Waterslide
15. Strandfontein Camp site
16. Strandfontein West Coast information Centre
17. Strandfontein Municipality office
18. Doring Bay Clinic

19. Doring Bay Fueling Station
20. Lutzville library

3. Written notification

I&AP's and other key stakeholders will be notified of the project. A background information document and landowner notification letter were also sent out to the identified I&AP's. The draft scoping report has been made available for comment for at least 30 days from 17th of August to the 16th of September 2021.

4. Background Information Document

A Background Information Document (BID) in English and Afrikaans was distributed (on the 16th and 17th of August 2021). The BID provides information concerning the proposed project and invites IAPs to register and to attend the public meeting. IAPs should distribute the documents to other parties who may be interested or affected by the project.

5. Public Meeting

Due to Covid -19 the Public Participation Meetings for the scoping phase will be held online. Interested and affected parties are requested to register so that they can receive a link prior to the meeting. will be held on the 10th of September 2021. Another public meeting will be held regarding the EIA phase and I&AP's will be notified via email and newspaper advertisement.

5.1.2 Consultation and correspondence with I&AP's and Stakeholders and the addressing of their comments (continuous).

To date there has been a few acknowledgements from I&APs, queries or registration requests have been received from stakeholders. A final public meeting report with minutes has been compiled.

5.1.3 Release of the revised and amended Scoping Report to I&AP's and stakeholders for review and comment.

This scoping report has been released to the public for public review and comment. All stakeholders and I&AP's where notified of the report's availability for comment for 30 days from the 17th of August to the 16th of September 2021.

Additional electronic and or hard copies will be made available to interested and affected parties and stakeholders who request for them.

5.2 Next Phases of the Public Participation Process

All comments and responses received and sent throughout the entire process will be updated and included in the comments and responses report which will be submitted to the Department of Mineral Resources. Note that this PPP Report shall be updated at each phase as required.

The draft and final EIAR/EMPr will be released for public review for 30 days each excluding public holidays. A final Consultation report with stakeholder comments from each phase will be submitted.

5.3 Summary of issues raised by I&AP's

All comments and responses received and sent throughout the entire process will be updated and included in the comments and responses report which will be submitted to the Department of Mineral Resources. Note that this PPP Report shall be updated at each phase as required.

Name	Comments	Responses
Adri La Meyer Directorate: Development Facilitation Environmental Affairs and Development Planning Western Cape Government Tue, Aug 17, 2021	Dear Moses, Thank you for your e-mail of 17 August 2021 with accompanying BID. Please register the Department of Environmental Affairs and Development Planning as a commenting authority for the S&EIR application. You may add me as the Department's contact person for the application. The e-mail and BID indicate that the DSR will be available for review for at least 30 days from 17 August 2021 (today) to 16 September 2021. Please could you provide me with a link to download the DSR? Lastly, I note that the NEM: ICMA was not included in the list of applicable legislation. Please ensure that the DSR include the relevance of the NEM: ICMA to the application. I look forward to receive the DSR from you.	Dear Adri, Thank you for your speedy response. We will provide you with the link for the draft Scoping report during the course of the day. We have included the National Environmental Management: Integrated Coastal Management Act 24 of 2008 in the report however going forward we will note the act in the consultation documents.
Tue, Aug 17, 2021 Grace Swanepoel	Good morning I need the property description, your attached plan is not legible.	Good Morning Grace. I hope this email finds you well, Herewith attached KML file with Locality Map for your attention as requested.
16 August 2121 Morne Oerson	Dear Moses, Roman	Dear Morne

	I am interested in your project and or could register as a party member. If you could guide me or more info how to be part if this project. I have a wide range of experience and knowledge in minerals, geochemical laboratory of exploration samples, sampling and sample preparation methology. Thank you in advance	You are registered as interested and affected parties also find the attached Background Information Document for your information. The scoping report will be made available for public review for 30 days from 17 August 2021 to 16 September 2021.

6 BASELINE RECEIVING ENVIRONMENT

6.1 Regional Setting

This chapter provides a description of the biophysical and socio-economic environment likely to be affected by the proposed project in the study area.

The Matzikama Municipality is located on the north-west coast of the Western Cape. The Municipality borders the Atlantic Ocean to the west, the Kamiesberg and Hantam Municipalities in the Northern Cape to the north and east respectively and the Cederberg Municipality in the Western Cape to the south. The geographical area of the Municipality increased from roughly 8000 km2 to 12900 km2. The municipal area comprises 18 towns and or villages. These towns and villages include Doring Bay, Strandfontein, Papendorp, Ebenaeser, Lutzville-West, Lutzville, Koekenaap, Vredendal, Klawer, Vanrhynsdorp, Nuwerus, Bitterfontein, Kliprand, Put-se-Kloof, Rietpoort, Molsvlei and Stofkraal.

Matzikama is characterized by an arid environment but is served by a life-giving arterial namely the Olifants River. The river with its associated canal systems supports a flourishing agricultural sector that is mainly built on viniculture. Apart from the previously district-municipality managed area to the north as well as the towns of Doring Bay, Strandfontein and Vanrhynsdorp the rest of the population is concentrated along the river and canal system. Vredendal is by far the largest town in the area and it is also centrally located rendering it the logical economic and administrative centre of the municipal area.

6.1.1 Air Quality

The air quality of the study area is mostly influenced by activities from mining operations, 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 paved and unpaved roads) to fine PM such as that emitted by vehicle exhausts, diesel power generators and dryers.

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. Every time that a surface is disturbed e.g. by mining, agriculture and/or grazing activities, its erosion potential is restored.

As per the seasonal windroses, the strongest and intensely clustered winds are generally from the south, south-west. It is expected that such winds have low dust generation capacities in the alluvial sands given the relatively coarse particle size as was found at the other sites noted in the surrounding land use impact assessment based on the studies conducted in the Western Cape.

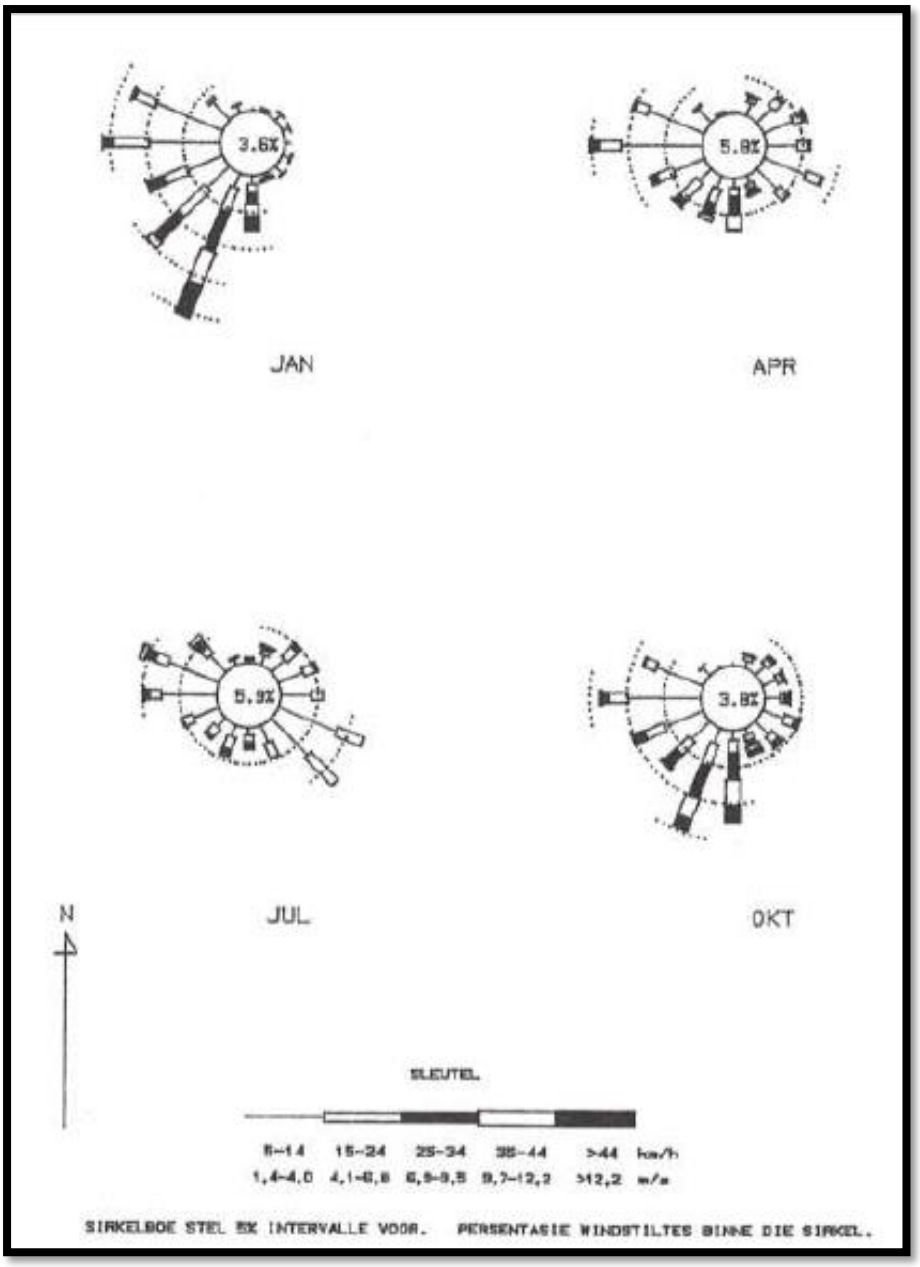


Figure 8: Annual Windrose of Lamberts Bay

It can be accepted that the closer areas to the coast will receive slightly increased south, south-west winds than the areas 25km inland where a percentage south westerly as at Lutzville will dominant.

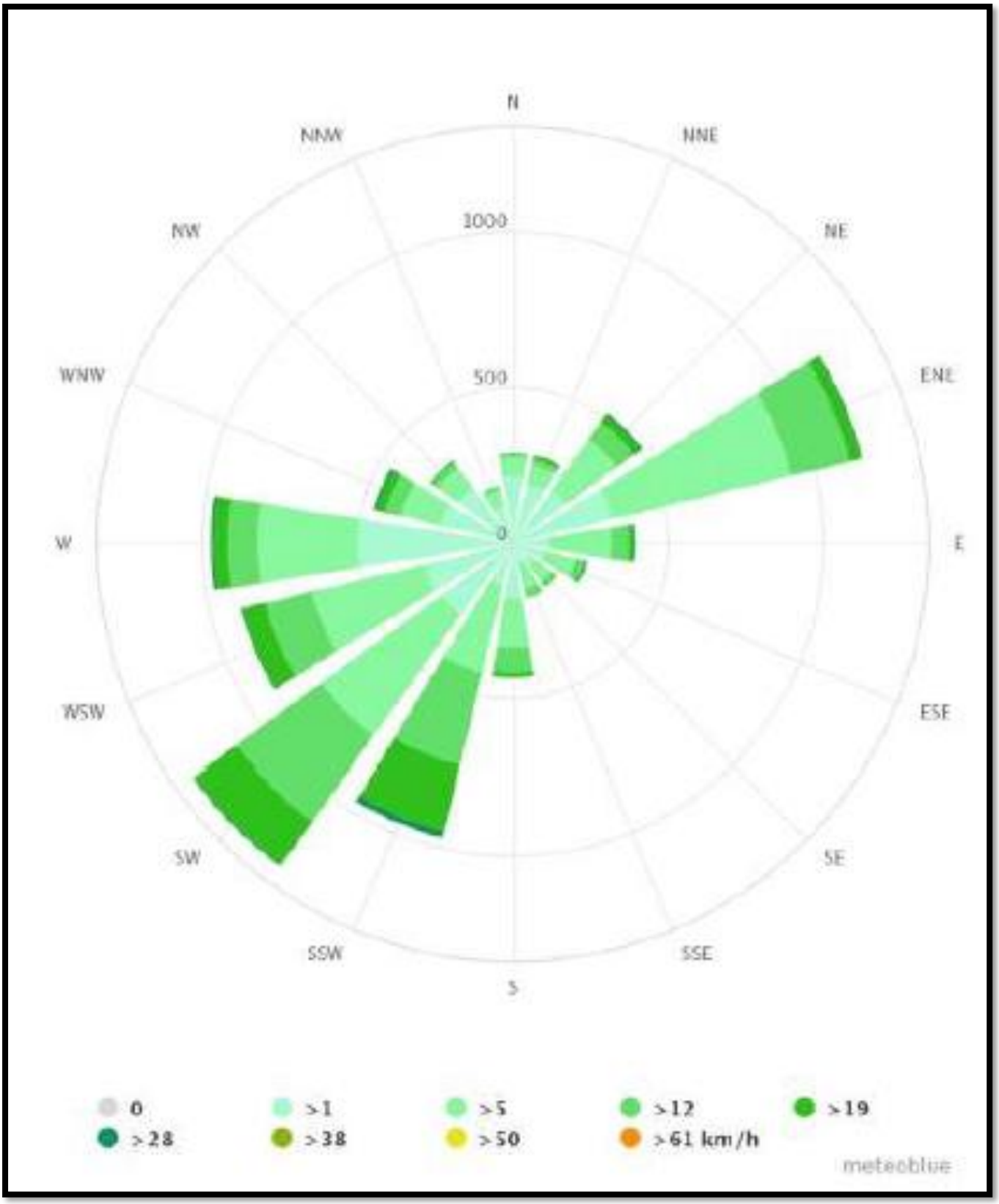


Figure 9: Windrose of Lamberts Bay (Source: Meteoblue)

6.1.2 Marine Environment

The application area requires an overview of the physical and biological oceanography and human utilisation of South African West Coast and a general descriptions of the marine environment although it will not be physically impacted .Key aspects of the baseline environment that are likely to impact on the scope of the impact assessment and management measures that are implemented as well as project decisions regarding alternatives are listed below.

6.1.2.1 Climate

The study area falls within the Winter Rainfall Region of the Western Cape Province. It generally experiences a Mediterranean-type climate with cool to cold, wet winters and hot, dry summers. The climate diagram for Strandfontein, the nearest town indicates that rain is experienced throughout the year with a definite peak in winter (May to August). Temperatures are highest in February and lowest in June and July. The climate diagram for Namaqualand Strandveld shows approximately the same pattern for temperature and precipitation. The mean annual precipitation is notably very low (MAP= 112 mm).

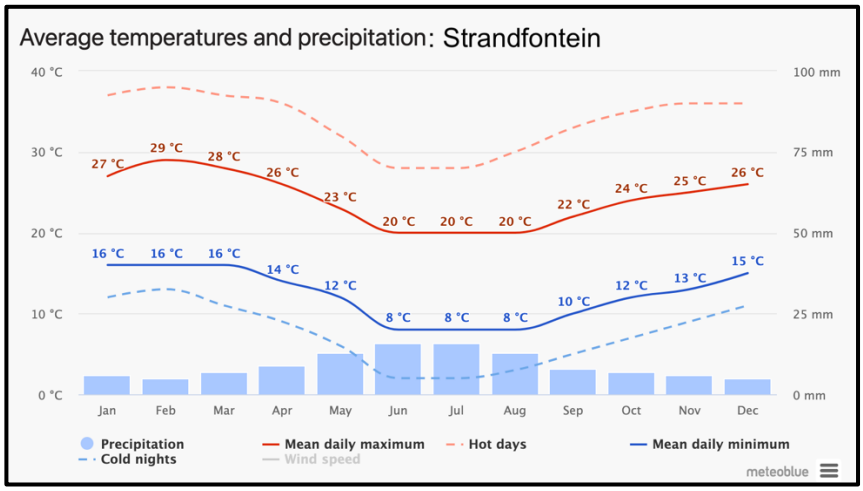


Figure 10*:* Average temperature and rainfall for Strandfontein.

The West Coast region is arid with a dry and relatively cool climate, moderated by effects of the Atlantic Ocean upwelling system. Oceanic fog is common, occurring on an average of 123 days per year. Rainfall occurs mainly in winter and increases from north to south varying from ~40 mm/year at Alexander Bay to ~59 mm/year at Port Nolloth to ~200 mm/year at Elandsbaai. Moderate to strong south-easterly winds caused by the South Atlantic subtropical anticyclone are typical in summer as are gale force westerly winds in winter, which can produce sandstorms. Highest temperatures (>30°C) tend to occur in summer during 'berg' wind conditions. As is typical of the West Coast, the coastline opposite the 13b concession experiences strong wave action, except in a few bays and where there are extensive kelp beds.

Wind and weather patterns along the West Coast are primarily due to the South Atlantic high-pressure cell and the eastward movement of mid-latitude cyclones (which originate within the westerly wind belt between 35° to 45°S), south of the subcontinent. The study area lies within the southern zone of the Benguela Current region and is characterised by

the cool Benguela upwelling system (Shillington 1998; Shannon 1985). A conceptual model of the Benguela system is shown below:

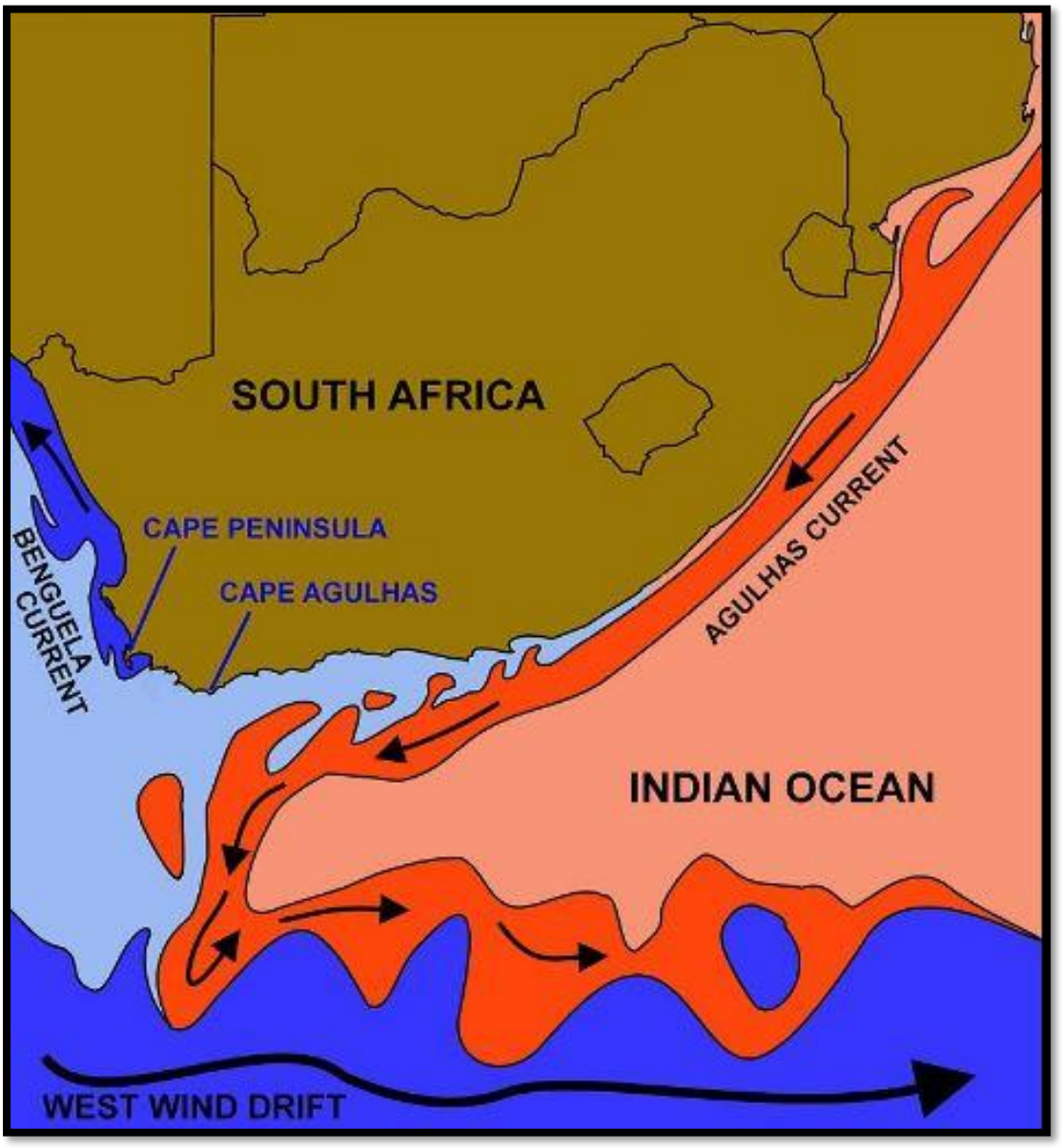


Figure 11: Benguela Current

The courses of the warm Agulhas current(red) along the east coast of South Africa, and the cold Benguela current (blue) along the west coast. Note that the Benguela current does not originate from Antarctic waters in the South Atlantic Ocean, but from upwelling of water from the cold depths of the Atlantic Ocean against the west coast of the continent. The two currents do not "meet" anywhere along the south coast of Africa, except as random eddies from the two currents, that arise and intermingle west of Cape Agulhas.

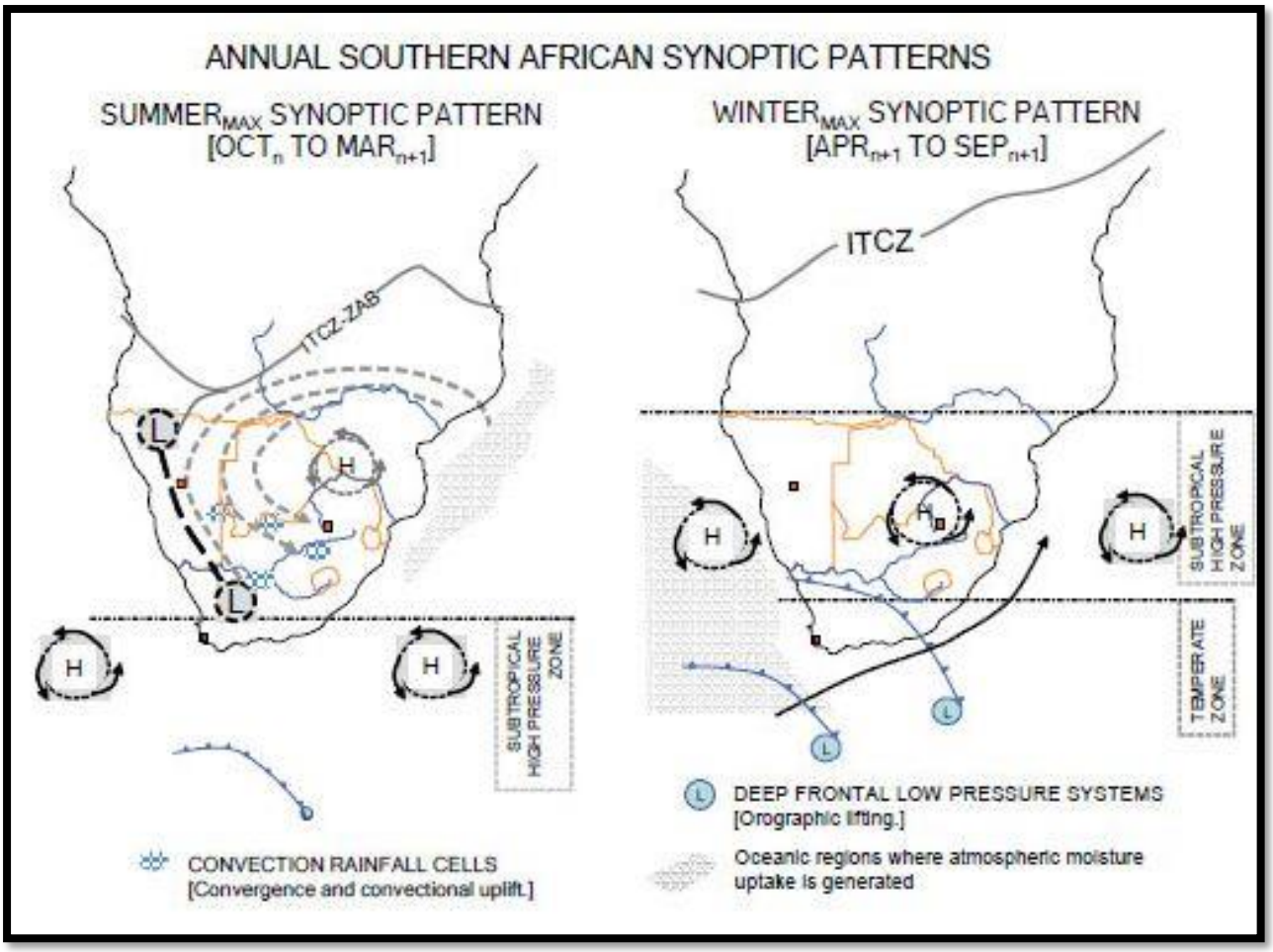


Figure 12: Pressure Zones

Strong north-westerly (NW) to south-westerly (SW) winds result from mid-latitude cyclones passing the southern Cape at a frequency of 3 to 6 days. Associated with the approach of mid-latitude cyclones is the appearance of low-pressure cells, which originate from near Lüderitz on the Namibian coast and quickly travel around the subcontinent (Reason and Jury 1990; Jury, Macarthur and Reason 1990). A second important wind type that occurs along the West Coast are katabatic 'berg' winds during the formation of a high-pressure system (lasting a few days) over, or just south of, the south-eastern part of the subcontinent. This results in the movement of dry adiabatically heated air offshore (typically at 15 m/s). At times, such winds may blow along a large proportion of the West Coast north of Cape Point and can be intensified by local topography. Aeolian transport of fine sand and dust may occur up to 150 km offshore (CCA Environmental, 2015).

6.1.3 Geology and Bathymetry

The water depth within the concession extends from –14m in the far northeastern corner down to –64m in the southwestern corner. The relief of the sea floor changes considerably from large areas of sediment cover with uniform, gentle gradients to steep rocky cliffs in the central-west. The shift from sediment covered bathymetry to rocky bathymetry is extremely abrupt suggesting relatively deep sediment packages adjacent to steep rocky outcrops.

The extent and features of the outcropping rocks are easily apparent from observing the bathymetry. The isolated rocky clusters in the northern quarter of the concession display a somewhat subdued character, either indicating that they are partially covered by sediment or that they are just less ragged.

Within the wide (1,4km) discontinuity between the northern reefs and the central reef lies the palaeo-Olifants River. This gorge has been completely filled in and masked by sediment. The average gradient of this sediment-covered seafloor is approximately 1:80.

The central reef is a prominent feature within the concession. It extends from west of Bruinpunt seaward in a WNW direction. The shallowest part of this feature is –27m, representing a 7 meter high pinnacle raised above the surrounding sediment. This pinnacle is situated approximately 2,5 km west of Pikkersbaai. The deepest isolated part of this reef is a small hollow 52 metre deep situated 150 meters inside of the seaward concession boundary and 100 metres north of 6,480,000mN utm grid line.

The sediment filled palaeo-Sandlaagte River channel dissecting the reef can be clearly seen. It extends from the present river mouth in a south westerly direction and then at the –50m water depth suddenly alters course by 90 and exits the reef into the southern basin. Another minor palaeo-river channel can be observed in the central northern half of the reef trending ESE-WNW.

The bathymetry highlights five distinct sediment basins of particular interest:

- The southern basin being the deepest from –30m to -64m.
- A near-shore, elongated basin between –25m and –35m orientated roughly parallel to the shoreline.
- The Sandlaagte palaeo-channel.
- A very large (±15km²) basin in the northern half of the concession with ware depths from 15 meters to +40 meters. The seafloor gradient sloping seaward is extremely uniform and regular suggesting a significant sediment thickness.
- A northern irregular shaped basin with an indistinct boundary with water depths of between 30 meters and +50 meters.

South of the large central reef lies an extension of a deep-water sediment wedge forming roughly a large (±4km²) circular basin. The depths to bedrock (water depth plus thickness of sediment) range from –30 meters, adjacent to the nearshore, to > -80 meters in the southwest. The sediment thickness in the centre of the basin is approximately 25m (Airgun data). The topography of the bedrock is moderately rugged and similar to the exposed central reef but representing a lower separate terrace.

West of Kleinsee lies a prominent palaeo-river channel orientated parallel to the coast. The channel is clearly visible from the airgun data as a tributary of the Sandlaagte palaeo-river. Depth to bedrock within the channel is approximately 50 meters with sediment thickness between 16 and 18 meters. The surrounding sediment thickness outside the centre of

the channel averages generally, 6 – 10 metres. A straight ridge of rugged rock forms a significant barrier against the deep-sea swell bound the western edge of this basin.

The Sandlaagte palaeo-river channel is a prominent feature incising the central reef. This channel is presently choked with sediment. An Airgun estimated sediment thickness of ±30 meters for the first leg and 14 to 30 metres for the second leg orientated NE-SW. Depths to bedrock within isolated potholes along its course of ±65 meters occur with average depths between 50 and 60 meters.

The nearshore northern half of the concession consists of a large (±15km²) clastic sediment wedge. Sediment thickness and depths to bedrock vary considerably. Average depths to bedrock range from 30 to 50 meters in the area south of the Olifants palaeo-river and sediment thickness in an around the 20m mark. The topography of the bedrock in this area indicates relatively depressed relief.

The Olifants Palaeo-river valley lies submerged within the northern half of this basin and extends out beyond the western boundary of the concession. This river has incised deeply into the inner shelf and has been completely filled in by unconsolidated sediment. Sediment thickness within the channel, derived from airgun data, averages 40 meters with the thickest at 56 meters. Bedrock topography suggests that the palaeo-river has eroded a 20 to 30 meter gorge into the surrounding country rock.

A minor tributary of the Olifants palaeo-river trending parallel to the present shoreline and approximately 2.5km offshore, dominates the extreme northern part of the concession. Depths to bedrock average 50 meters and sediment thickness of approximately 18 meters occur.

The present day exposed rocky outcrops consist of a dominant central-western rugged to very rugged NNW-SSE trending peninsular and isolated outcrops of subdued rocks in the extreme south and north of the concession. A distinctive NW-SE and NE-SW pattern of jointing or faulting can be observed on the central reef. The course of the Sandlaagte palaeo-river has been dominated by this structure.

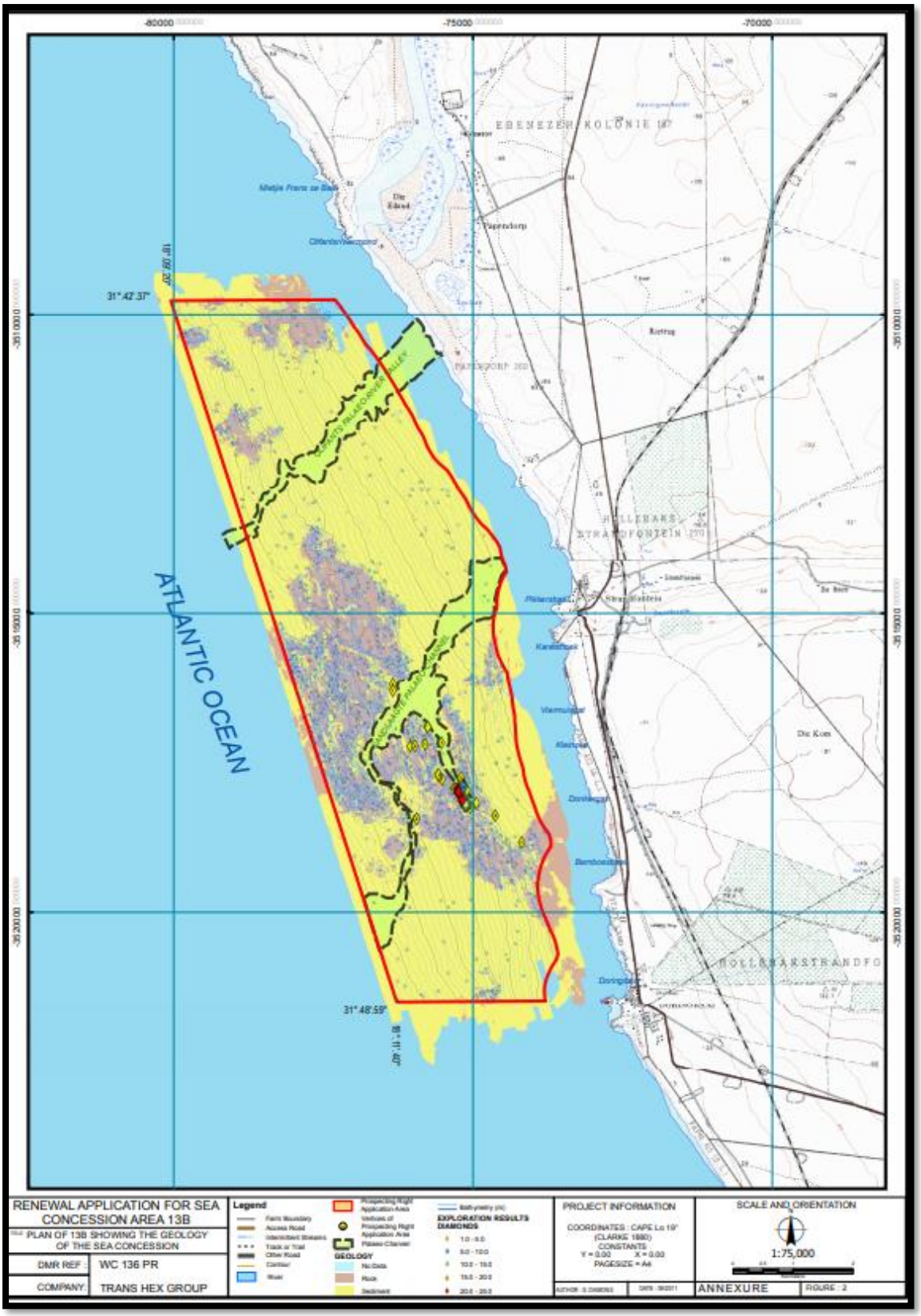


Figure 13: Geology of the application area.

6.1.4 Fauna and Flora

The marine flora and fauna in the concession areas are typical of the Namaqua biogeographic province.

6.1.4.1 Intertidal and Subtidal Communities

Benthic communities on sandy beaches in the supralittoral zone (above HWM) comprise isopods (*Tylos* and *Niambia* sp.) and amphipods (*Talorchestia* spp) most of which feed on wrack deposited near the drift line. Further down the beach in the turbulent zone below the LWM, the benthos includes mysids (*Gastrosaccus* spp); ribbon worms and the cumacean (*Cumopsis robusta).* The carnivorous gastropod (snail) *Bullia digitalis,* may also be present in large numbers. Below 2 m depth, amphipods (*Cunicus* sp) and numerous burrowing polychaete species may be present. Other polychaetes and the three spot swimming crab (*Ovaiipes punctatus)* may occur below 5 m.

Benthic communities on rocky shores in the supralittoral zone are dominated by the tiny gastropod *Littorina africana* and red algae. Further down the shore, numerous species of anemones, limpets and a diversity of gastropods and algae occur. Mussels (*Choromytilus meridionalis* and/or *Mytilus galloprovincialis)* occur on more exposed shores. From the sublittoral fringe to 5-10 m depth, the benthos is dominated by algae, including kelp (*Ecklonia maxima* and *Laminaria schinzii).* In the sublittoral zone, fauna is dominated by suspension and filter feeders (e.g. redbait, mussels, sponges, and sea cucumbers). Flere, grazers include sea urchins, limpets, isopods and amphipods, and starfishes, feather and brittle stars and gastropods also become more common.

Fish habitats and representative species include **intertidal rock pools** (klipfish and sucker fish); **rocky reefs** (hottentot, galjoen, snoek, maned blennies, harder and pilchard); **surf zones** (29 species have been recorded, dominated by harders, silverside, stumpnose, False Bay klipfish and two species of goby); **nearshore soft sediments** (shallow water hake and gurnards, West Coast sole, kob, St Josef sharks and hound sharks) and **inshore pelagic zones** (beyond breakers) (shoals of anchovy, pilchard, round herring, chub and horse mackerels).

The inshore zone of concessions 13 is susceptible to disturbance from natural upwelling of oxygen deficient water (which may cause lobster walkouts); oil pollution; flooding and sediment inputs from the Olifants River, and physical disturbance caused by diamond mining.

6.1.4.2 Plankton

The phytoplankton community on the continental shelf is typical of temperate coastal upwelling systems in that it is dominated by large-celled diatoms and dinoflagellates. During periods of water column stability, the large-celled community is replaced by a small-celled community dominated by flagellates.

Dinoflagellates can cause red tide 'blooms' that discolour the water. These blooms may be toxic and can on occasion, seriously deplete the already low oxygen concentrations in nearshore waters. Red tides are ubiquitous features of the nearshore Benguela system in late summer and autumn, although they are more common south of Lamberts Bay.

The zooplankton comprises of mesozooplankton (200-1600 pm) dominated by copepoda, and macrozooplankton (>1600 pm) dominated by euphausiids. Most of the zooplankton species typically occur in the phytoplankton-rich upper mixed

layer of the water column, with some species having developed adaptive life histories maintaining their association with nearshore waters.

Ichthyoplanktonic stages (fish eggs and larvae) of the commercially important fish stocks are limited in the area. The commercially important pelagic fish species predominantly spawn south of Cape Columbine. Although hake have been recorded to spawn on the continental shelf north of Cape Columbine, the specific localities of spawning maxima are not yet known.

6.1.4.3 Deep-water Benthic Invertebrates

The marine benthos comprises all organisms that live on or in, in the case of sands, muds etc. the seabed. The inner continental shelf (30-60 m depth) is dominated by molluscs, polychaete worms and cnidarians. Sediment texture at this depth is almost exclusively dominated by fine sands.

The midshelf mudbelt (80-120 m depth) is a particularly rich benthic habitat, and the fauna is dominated by both scavenging and carnivorous polychaete worms, as well as cnidarians. The comparatively high benthos biomass in this region represents a food resource to carnivores such as the mantis shrimp, cephalopods and demersal fish species. The sediment texture is dominated by silts and clays and very fine sands.

On the outer shelf (280 m depth) Crustacea increase in relative importance with amphipods comprising the major component. Sediment texture is dominated by very fine sands. At 400 m depth echinoderms dominate the fauna.

6.1.4.4 Jellyfish

In late summer, hydrozoan jellyfish have been observed to congregate in ‘swarms’ in the mid-shelf (100 m - 200 m) with decreasing densities towards the coast and offshore. Although jellyfish ‘swarms’ have been observed off Port Nolloth, the centre of distribution of the two species concerned is further north from Luderitz to Walvis Bay.

6.1.4.5 Cephalopods

Cuttlefish are a presently unexploited resource which occur on mud and muddy sand sediments on the mid and outer continental shelf, in association with their major prey item; mantis shrimps.

6.1.4.6 Fish

The offshore fish communities consist of pelagic species and demersal species. Pelagic species include anchovy, pilchard, round herring, chub and horse mackerel, which spawn mainly south of St Helena Bay downstream of major upwelling centres in spring and summer. Their eggs and larvae are subsequently carried up the West Coast in northward flowing waters. Recruitment success relies on the interaction of oceanographic events, and is thus subject to spatial and temporal variability. Consequently the abundance of adults and juveniles of these small pelagic fish is highly variable both within and between species.

Large pelagic species include tunas, billfish and pelagic sharks which migrate throughout the southern oceans, between surface and deep waters (>300 m) and have a highly seasonal distribution in the Benguela.

Demersal communities comprise deepwater species (>380 m) such as deepwater hake, monkfish, and kingklip and more shallow water species dominated by Cape hake and including jacopever, white squid and catshark. The distribution of the latter shelf community varies seasonally.

6.1.4.7 Pelagic and Coastal Seabirds

49 species of pelagic seabirds, including numerous species of albatrosses, shearwaters, petrels and gulls, have been recorded in the region; 14 are resident, 10 originate from the northern hemisphere and 25 from the southern ocean. The West Coast area supports 35% of the total Benguela system population. Highest bird densities occur offshore of the shelf-break in winter.

Coastal birds endemic to the region and liable to occur most frequently especially in the nearshore regions include Cape Gannets, Kelp Gulls, African Penguins, African Black Oystercatcher; Bank, Cape and Crowned Cormorants, and Hartlaub's Gull. Of these the Black oystercatcher and Bank cormorant are rare. Caspian and Damara terns and Chestnutbanded Plovers are likewise rare and breed in the study area, especially in the wetland and saltpan areas associated with the Sout River Olifants River estuary. The White Pelican is a rare, non-breeding resident.

In total, fourteen species of seabirds are known to breed in southern Africa; Cape Gannet, African Penguin, four species of Cormorant, White Pelican, three Gull and four Tern species. The breeding areas are distributed around the coast with islands being especially important. The number of successfully breeding birds at the particular breeding sites varies with food abundance. Although no offshore islands with breeding colonies of birds occur in, or shoreward of, concession area 13(b) the Elephant Rocks Marine Reserve in Concession 12(a) serves as a breeding site for Crowned (Phalacrocorax coronatus) and Cape Cormorants (P. capensis). The estuarine habitats around the Olifants River mouth also provide important nesting and foraging areas for coastal birds, and the River mouth area has been proclaimed a bird sanctuary.

6.1.4.8 Marine Mammals

Four seal species occur in the region of which the most abundant is the Cape fur seal. This species forages throughout the area and breeds at 25 sites on the mainland and on nearshore islands and reefs along the West Coast. There is also a non-breeding colony of seals to the north at Strandfontein Point. These have important conservation value since they are largely undisturbed at present, as public access to the coast in this area is limited.

The species characteristic of the west coast offshore community are long-finned pilot whale, Gray's beaked whale and bottlenose dolphin. The west coast inshore community includes dusky dolphin, Heavisides dolphin, common dolphin, and southern right whale dolphin. The dusky and Heaviside's dolphins are found in the extreme nearshore regions between northern Namibia and Cape Point.

All of the eight species of southern hemisphere large baleen whales have been recorded along the West Coast. Many of these whales are highly migratory and found off the West Coast in winter and early spring (June to September).

Migrations of these species occurs primarily off the continental shelf, although limited numbers of southern right whales may also occur in inshore waters. In contrast, humpback whales use the coastal waters (inshore of the 200 m isobaths) as a migratory corridor between their summer polar feeding grounds and winter breeding grounds in lower latitudes. Their main west coast migration route strikes the sub-continent to the north of Saldanha Bay, from where they continue northwards. As they have been recorded off the south-western Cape and Namibian coasts during the summer, humpbacks are therefore considered as semi-residents.

6.1.5 Socio economic

6.1.5.1 2018 Socio-economic Profile: Matzikama Municipality

The municipal area comprises 17 towns and or villages that is divided into 8 wards. These towns and villages include Doring Bay, Strandfontein, Papendorp, Ebenaeser, Lutzville-West, Lutzville, Koekenaap, Vredendal, Klawer, Vanrhynsdorp, Nuwerus, Bitterfontein, Kliprand, Put-se-Kloof, Rietpoort, Molsvlei and Stofkraal. Matzikama is characterized by an arid environment but is served by a life-giving arterial namely the Olifants River. The river with its associated canal systems supports a flourishing agricultural sector that is mainly built on viniculture. Apart from the newly incorporated area to the north as well as the towns of Doring Bay, Strandfontein and Van Rhynsdorp the rest of the population is concentrated along the river and canal system

A comparison between the 2011 and 2019 estimates show a notable increase in the number of people within the working age and aged cohorts whilst the aged grouping experiences a similar trajectory across the same reference period. The notable increase in the aged category is expected to
raise the dependency ratio.

A relatively marginal increase in the child cohort between 2019 and 2024, coupled with notable growth in the working and aged categories is expected to modest increase in the dependency ratio in Matzikama.
Households

In order to ensure basic service delivery to all, municipal budget allocations should be informed by credible and accurate assumptions regarding the number of households within a municipal area. According to Census 2011, there were 18 835 households within the greater Matzikama region in 2011. As per the 2016 Community Survey estimates, the number of households increased to 20 821 in 2016 which equates to 10.54 growth of the 2011 base.

Age Cohorts
Matzikama was initially expected to have decreased dependency ratios of 49.4, 48.5 and 48.2 for the respective years of 2011, 2017 and 2023, however a notable increase in the aged category is expected to raise the dependency ratio putting higher pressure on social systems and delivery of basic services.
At the municipal level, this increase will also result in a smaller base from which local authorities can collect revenue for basic services rendered and will necessitate the prioritization of municipal spending.

6.1.5.2 Ward 8:

Koekenaap, Bitterfontein, Nuwerus, Kliprand, Stofkraal, Molsvlei, Put-Se-Kloof and Rietpoort

The projections calculated for Ward 8, using the municipal growth rate of 8.2%, shows an unrealistically high demand for housing and associated requirements for land provision. Therefore, another projection has been calculated for this ward using the Municipal average growth rate of 2.17% and it is believed that this more accurately reflects the future housing demand in this part of the municipality.

The SDF of 2018 identifies sufficient land to accommodate the existing and future projected demand. It must be noted that Rietpoort, Put-Se-Kloof, Molsvlei and Stofkraal are Act 9 areas, and subjected to planning process in terms of related legislation. These processes have not commenced yet and until such time that the process will be completed, the settlements fall outside of the jurisdiction of the municipality. Currently therefore no housing delivery projects can be initiated by the municipality in these settlements.

An analysis of the population growth rate per town shows that Rietpoort is the fastest growing settlement in this ward (growth rate of 3.57%) in 2018, while Kliprand's population was found to actually be diminishing (growth rate of – 2%). We are currently busy with the following Top structure projects, Kliprand 9, Nuwerus 44 and Bitterfontein 70 and if more land can be obtained the waiting list of Bitterfontein of 130 will be accommodated. There are also a significant number of households that are accommodated in backyard dwellings. A very high growth rate is evident in the rural population.

6.1.6 Commercial Fishing Activities

Line fishing effort in the region is centred around Doringbaai and the Olifants River mouth targeting mainly snoek and hottentot. Fishing is conducted primarily from tiny rock lobster bakkies belonging to the local rock lobster factories, although larger deckboats from Lamberts Bay and further south may visit the area during the snoek and yellowtail season. As most of the fishing is undertaken after the rock lobster nets have been deployed, or during the rock lobster closed season, the boats operate very close to the shore. The inshore catch of line fish in Concession area 11 amounts to <5 t/km/yr, whereas 10-15 t/km coastline/year are landed from the area between Olifants River mouth to south of Doringbaai. Catches increase further southwards towards Lamberts Bay.

The treknet and drift net fishery in the region is centred around the Olifants River, where there is an increasing reliance on the sea by residents of Ebenhaeser, who undertake subsistence fishing near the river mouth. Targeted species include harders and St Joseph sharks, but the by-catch may contain a variety of other pelagic species. The distribution of permitted trek- and drift-nets along the coastline of concession 11b and 1b3 is estimated at only 0.5 nets/km, although netting effort is likely to be higher as the result of the large numbers of illegal nets used on the West Coast.

Commercial catches of rock lobster in the area around Lamberts Bay, Doringbaai and Hondeklipbaai are confined to shallower water (<30 m) with almost all the catch being taken in <15 m depth between Doringbaai and Donkin Bay. Lobster fishing is conducted with hoopnets from a fleet of small dinghies/bakkies. The majority of these work close to the

shore within a few nautical miles of the harbours, with only 30% of the total numbers of bakkies partaking in the fishery being deployed from larger deck boats. These larger boats may occasionally set rock lobster traps out to 50 m depth. All subtidal reefs are potential rock lobster habitats, but the areas north of the Olifants River are seldom visited by rock lobster fishermen. Although the lobster industry is an important income source for West Coast fishermen, catches from the concession area amount to well below 1% of the total allowable catch for the area.

Pelagic fishing effort is primarily concentrated south of the 11(b) and 13b, although in some years, depending upon the quotas and their distributions in terms of allowable by-catch, more effort may be concentrated around the Oliphant's River, and further north to the Groen and Brak Rivers. The pelagic fishery operates primarily in depths of 60 m to 90 m. Fishing occurs to 30 nm offshore, but usually focuses between 10 nm from the coast to close inshore. Purse-seine vessels which roam the region following fish stocks may, however, venture into <30 m depth over sandy substrates in the concession areas, but shallower nearshore areas along rocky coastlines are generally avoided. Interaction between prospecting in 13(b) and the pelagic fishery is thus minimal. The demersal and pelagic longline fisheries operate to the south, and offshore of the (b)-concessions at water depths exceeding 200 m, and their efforts are likewise concentrated to the south of the concession area. This likewise applies to demersal and pelagic longlining which operate primarily in depths of 60 m to 90 m.

6.2 Screening tool Description of specific environmental features and infrastructure on the site.

There are no existing or envisaged Marine Protected Areas on concession area 13(b).The Groen-Spoeg Marine Reserve is located to the north of Concession 11 (in Concessions 8 & 9), and the Elephant Rocks Marine Reserve in Concession 12(a) serves as a breeding site for Cape Fur Seals, and Cape and Crowned Cormorants.

6.2.1 Environmental sensitivity screening.

(Show all environmental, and current land use features)

The Screening Tool Report generated from the National Web Based Environmental Screening Tool in accordance with the latest NEMA Minimum Requirements and Protocol for Specialist Impact Assessment as contained in the "Procedures to be followed for the assessment and minimum criteria for reporting of identified environmental themes of Section 45 (a) and (h) of the National Environmental Management Act, 1998, when applying for Environmental Authorization" (10 May 2020).

- Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area: EIA Reference 1 12/12/20/2178 Solar PV Approved
- Environmental Management Frameworks relevant to the application
    - No intersections with EMF areas found

Environmental screening results and assessment outcomes The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is:

- Mining|Prospecting rights.

- Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

- No intersection with any development zones found

Figure 14*:* Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones

6.2.2 Site sensitivity as determined using the National Web-based Environmental Screening Tool.

6.2.2.1 Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

- No intersection with any sensitive areas found..

6.2.3 Specialist assessments identified

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

No	Specialist assessment	Assessment Protocol	Recommended Study by EAP
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf	Fisheries Impact Assessment
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf	Maritime Archaeological and Cultural Heritage Impact Assessment
3	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf	Maritime Palaeontology Impact Assessment
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf	Marine Biodiversity Impact Assessment
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf	
6	Plant Species Assess	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf	
7	Noise Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol.pdf	Baseline Noise Assessment
8	Radioactivity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf	Baseline Radioactivity Impact Assessment

7 ENVIRONMENTAL IMPACT ASSESSMENT

7.1 Assessment Criteria

The assessment of the impacts will be conducted according to a synthesis of criteria required by the integrated environmental management procedure.

7.1.1 Extent

The physical and spatial scale of the impact is classified as:

a) Footprint

The impacted area extends only as far as the activity, such as footprint occurring within the total site area.

b) Site

The impact could affect the whole, or a significant portion of the site.

c) Regional

The impact could affect the area including the neighbouring properties, the transport routes and the adjoining towns.

d) National

The impact could have an effect that expands throughout the country (South Africa).

e) International

Where the impact has international ramifications that extent beyond the boundaries of South Africa.

7.1.2 Duration

The lifetime of the impact, that is measured in relation to the lifetime of the proposed development.

a) Short term

The impact would either disappear with mitigation or will be mitigated through natural processes in a period shorter than that of the construction phase.

b) Short to Medium term

The impact will be relevant through to the end of the construction phase.

c) Medium term

The impact will last up to the end of the development phases, where after it will be entirely negated.

d) Long term

The impact will continue or last for the entire operational lifetime of the development, but will be mitigated by direct human action or by natural processes thereafter.

e) Permanent

This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient,

7.1.3 Intensity

The intensity of the impact is considered by examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself. The intensity is rated as:

a) Low

The impact alters the affected environment in such a way that the natural processes or functions are not affected.

b) Medium

The affected environment is altered, but functions and processes continue, albeit in a modified way.

c) High

Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

7.1.4 Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length during the life cycle of the activity, and not at any given time. The classes are rated as follows:

a) Impossible

The possibility of the impact occurring is none, due either to the circumstances, design or experience. The chance of this impact occurring is zero (0%).

b) Possible

The possibility of the impact occurring is very low, due either to the circumstances, design or experience. The chances of this impact occurring is defined as 25%.

c) Likely

There is a possibility that the impact will occur to the extent that provisions must therefore be made. The chances of this impact occurring is defined as 50%.

d) Highly likely

It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up before carrying out the activity. The chances of this impact occurring is defined as 75%.

e) Definite

The impacts will take place regardless of any provisional plans, and or mitigation actions or contingency plans to contain the effect can be relied on. The chance of this impact occurring is defined as 100%.

7.1.5 Mitigation

The impacts that are generated by the development can be minimised if measures are implemented in order to reduce the impacts. The mitigation measures ensure that the development considers the environment and the predicted impacts in order to minimise impacts and achieve sustainable development.

7.2 Determination of significance – Without Mitigation

Significance is determined through a synthesis of impacts as described in the above paragraphs. It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. The significance of the impact "without mitigation" is the prime determinant of the nature and degree of mitigation required. Where the impact is positive, significance is noted as "positive". Significance is rated on the following scale:

a) No significance

The impact is not substantial and does not require any mitigation action.

b) Low

The impact is of little importance, but may require limited mitigation.

c) Medium

The impact is of importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.

d) High

The impact is of major importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

7.3 Determination of significance – With Mitigation

Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures. Significance with mitigation is rated on the following scale:

a) No significance

The impact will be mitigated to the point where it is regarded as insubstantial.

b) Low

The impact will be mitigated to the point where it is of limited importance.

c) Low to Medium

The impact is of importance however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels.

d) Medium

Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw.

e) Medium to High

The impact is of major importance but through the implementation of the correct mitigation measures, the negative impacts will be reduced to acceptable levels.

f) High

The impact is of major importance. Mitigation of the impact is not possible on a cost-effective basis. The impact is regarded as high importance and taken within the overall context of the project, is regarded as a fatal flaw. An impact regarded as high significance, after mitigation could render the entire development option or entire project proposal unacceptable.

7.3.1 Assessment weighting

Each aspect within the impact description was assigned a series of quantitative criteria. Such criteria are likely to differ during the different stages of the project's life cycle. In order to establish a defined base upon which it becomes feasible to make an informed decision, it is necessary to weigh and rank all criteria.

7.3.2 Ranking, Weighting and Scaling

For each impact under scrutiny, a scale weighting Factor is attached to each respective impact (refer to Figure 15: Description of biophysical assessment parameters with its respective weighting), The purpose of assigning such weight serve to highlight those aspects considered most critical to the various stakeholders and ensure that each specialist's element of bias is taken into account. The weighting factor also provides a means whereby the impact assessor can successfully deal with the complexities that exist between the different impacts and associated aspects criteria.

Simply, such a weighting factor is indicative of the importance of the impact in terms of the potential effect that it could have on the surrounding environment. Therefore, the aspects considered to have a relatively high value will score a relatively higher weighting than that which is of lower importance.

Extent	Duration	Intensity	Probability	Weighting Factor (WF)	Significance Rating (SR)	Mitigation Efficiency (ME)	Significance Following Mitigation (SFM)
Footprint 1	Short term 1	Low 1	Probable 1	Low 1	Low 0-19	High 0,2	Low 0-19
Site 2	Short to medium 2		Possible 2	Low to medium 2	Low to medium 20-39	Medium to high 0,4	Low to medium 20-39
Regional 3	Medium term 3	Medium 3	Likely 3	Medium 3	Medium 40-59	Medium 0,6	Medium 40-59
National 4	Long term 4		Highly Likely 4	Medium to high 4	Medium to high 60-79	Low to medium 0,8	Medium to high 60-79
International 5	Permanent 5	High 5	Definite 5	High 5	High 80-100	Low 1,0	High 80-100

Figure 15: Description of biophysical assessment parameters with its respective weighting

7.3.3 Identifying the Potential Impacts without Mitigation (WOM)

Following the assignment of the necessary weights to the respective aspects, criteria are summed and multiplied by their assigned weightings, resulting in a value for each impact (prior to the implementation of mitigation measures).

Equation 1:

Significance Rating (WOM) = (Extent + Intensity + Duration + Probability) x Weighting Factor

7.3.4 Identifying the Potential Impacts with Measures (WM)

In order to gain a comprehensive understanding of the overall significance of the impact, after implementation of the mitigation measures, it was necessary to re-evaluate the impact.

a) Mitigation Efficiency (ME)

The most effective means of deriving a quantitative value of mitigated impacts is to assign each significance rating value (WOM) a mitigation effectiveness (ME) rating. The allocation of such a rating is a measure of the efficiency and effectiveness, as identified through professional experience and empirical evidence of how effectively the proposed mitigation measures will manage the impact.

Thus, the lower the assigned value the greater the effectiveness of the proposed mitigation measures and subsequently, the lower the impacts with mitigation.

Equation 2:

Significance Rating (WM) = Significance Rating (WOM) x Mitigation Efficiency

Or WM = WOM x ME

b) Significance Following Mitigation (SFM)

The significance of the impact after the mitigation measures are taken into consideration. The efficiency of the mitigation measure determines the significance of the impact. The level of impact is therefore seen in its entirety with all considerations taken into account.

7.3.5 Impacts identified

A number of negative impacts on the bio-physical environment could result from disturbances during prospecting. The significance of any potential impact is largely limited by the small physical size and short duration of the prospecting, but also by the sensitivity of the receiving environment or receptor(s).

Potential impacts resulting from the proposed project were identified using input from the following:

- Views of I&APS which will be ascertained during the consultation process;
- Existing information;
- Screening report and
- Legal and policy requirements that need to be fulfilled for the proposed project

The following potential impacts were identified:

- Ground and surface water alteration;
- Geology, soil and land capability loss;
- Socio-economic issues on tourism and fisheries;
- Waste products;
- Floral and faunal displacement;
- Dust and noise impacts;
- Temporary increase in traffic; and
- Identified heritage sites.

Impact statement

The following key issues and potential impacts (direct and cumulative) were identified during the Scoping phase, which will together with potential cumulative impacts, be assessed during the Environmental Impact Assessment phase of the project and appropriate mitigation measures to reduce the identified impacts will be proposed.

Potential Direct Impacts identified

	IMPACT
SURFACE WATER	Alteration of the characteristics of a water resource

IMPACT	
	Hydrological modification on storm water flow and watercourses.
	Deterioration of water quality
	The impact on ground and surface water by migration of contaminated water from the hydrocarbon leakages
	Impacts on surface water during the construction and operational phases.
GROUNDWATER	Impact on ground and surface water by migration of contaminated water from the construction and operational phases.
	Deterioration of water quality
NOISE AND AIR QUALITY	Increased noise levels and Dust impacts on air quality during the prospecting phases.
SOIL, GEOLOGY AND MINERAL RESOURCE	Impact of vegetation clearance on soil erosion and surface water runoff during the prospecting phase
	Soil pollution during the prospecting phase
	Prospecting of resource underlying the site
ECOLOGICAL Biodiversity and fisheries	Destruction of sensitive habitat
	Destruction of faunal habitat and faunal displacement
	Reduction in natural migratory routes and faunal dispersal patterns
VISUAL	Minimisation of aesthetics and/or sense of place of the surrounding areas.
SOCIO-ECONOMICAL	Development and upliftment of the surrounding communities and infrastructure
	Development of the economic environment
	Loss of income from tourism activities
	Loss of income from affected fisheries
HERITAGE	Alteration of archaeological, historical and paleonthologic features

Potential Cumulative Impacts identified

IMPACT	
Traffic	Increased traffic volumes within the project area and surrounding communities. (low)
Air Quality	Decrease in air quality in the immediate surroundings of the prospecting site
Hydrological	Cumulative loss of surface water functionality as a result of an increase in pollutants.
	Cumulative impact of hydrological modifications

IMPACT	
Marine Ecology Biodiversity and fisheries	Cumulative destruction of sensitive habitat.
	Cumulative impact of faunal habitat and displacement.
	Cumulative loss of fisheries
	Cumulative impact on natural migratory routes and faunal dispersal patterns.
Visual	Cumulative impact of visual distrubances
Noise	Cumulative impact of construction and operational noise as well as noise due to prospecting vessels and goehpysical survey
	Cumulative impact of noise and vibrations
Socio-Economical	Postivie - Cumulative impact of development on the surrounding communities.
	Positive - Cumulative impact of development on the economic environment.
	Positive - Cumulative impact of the employment opportunities provided.
	Negative – Cumulative Loss of income from tourism and other coastal activities
	Negative- Cumulative Loss of income from affected fisheries

This section provides a list of potential impacts on environmental aspects separately in respect of each of the main project actions / activities and processes. The potential impacts are presented for each of the project phases in tabular format.

Table 4: List of Potential Impacts

Activity	**Phase**	**Potential impacts (unmitigated)**
Site preparation Vehicle movement, vessel preparation	Construction Operation Decommissioning	Physical destruction and disturbance of biodiversity Air pollution Disturbing noise Visual impacts
Prospecting (Mapping, Bulk sampling and drilling)	Operation	Loss of marine habitats Physical destruction and disturbance of biodiversity Pollution of water resources Contamination of groundwater Air pollution Disturbing noise Visual impact Loss of sense of place of the coastal environment

Transport systems Use of access points, road transport to and from site for employees and supplies, movement of prospecting vessel within site boundary	Construction Operation Decommissioning	Loss of soil resources and land capability Disturbance of biodiversity Pollution of surface water resources Alteration of natural drainage patterns Contamination of groundwater Disturbing noise Traffic impacts Visual impacts
Site / contract management Appointment of workers/contractors, site management (Monitoring, inspections, maintenance, security, access control), awareness training, emergency response, implementing and maintaining programmes	Construction Operation Decommissioning Closure	Management of the site plays a significant role in all identified impacts
Rehabilitation Replacing soil, slope stabilization, landscaping, revegetation, restoration	Construction Operation Decommissioning Closure	Hazardous excavations Loss of marine resources and land capability Disturbance of biodiversity Pollution of surface water resources Alteration of natural drainage patterns Contamination of groundwater Air pollution Disturbing noise Visual impacts
Maintenance and aftercare Inspection and maintenance of remaining facilities and rehabilitated areas	Closure	Loss of soil resources and land capability Disturbance of biodiversity Noise Pollution Air pollution Visual impacts

7.3.6 The positive and negative impacts that the proposed activity

(in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

During the EIA phase all potential negative and potential impact will be identified, ranked and mitigation measures will be prescribed. These will be developed based on the finding of the specialist studies mainly marine biodiversity, marine heritage and fisheries assessment.

7.3.7 The possible mitigation measures that could be applied and the level of risk.

During the EIA phase all possible impacts will be assessed and an EMP outlining the risk and mitigation measures will be compiled. These will be developed based on the finding of the specialist studies mainly marine biodiversity, marine heritage and fisheries assessment.

7.3.8 Final Site Layout Plan

The Final Layout Plan will be provided in the EIA/EMP after public consultation as well as specialist studies findings, delineation of sensitive environments and buffers.

7.4 Plan of study for the Environmental Impact Assessment process

A plan of study for undertaking the environmental impact assessment process to be undertaken will include-

- a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;
- a description of the aspects to be assessed as part of the environmental impact assessment process;
- aspects to be assessed by specialists;
- a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;
- a description of the proposed method of assessing duration and significance;
- An indication of the stages at which the competent authority will be consulted;
- particulars of the public participation process that will be conducted during the environmental impact assessment process; and
- a description of the tasks that will be undertaken as part of the environmental impact assessment process;
- Identify suitable 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.

The EIA phase will comprise of the following activities;

- Stakeholder Engagement;
- Assessing of Alternatives;
- Baseline and consideration of potential Specialist Studies;
- Identification of potential impacts
- Impact Assessment;
- Identification and Description of mitigation measures; and

- Reporting and decision-making.

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

The authorization process to be followed has been designed to meet the requirements of the MPRDA (Act 28 of 2002) and National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014.The authorization process will include:

- Scoping Phase:
- Stakeholder Notification;
- Authority Consultation;
- Capturing of Issues and Concerns;
- Compilation of a Stakeholder Database;
- Identification of Potentially Significant Impacts;
- Identification of Potentially Sensitive Environmental Aspects;
- Identification of Required Specialist Studies;
- Compilation of a Scoping Report (this document), including:
- Plan of Study for EIA/EMP Amendment.
- Issues Report; and
- Stakeholder Review of Documentation;
- Submission and approval of Scoping Report by relevant authorities.
- Impact Assessment Phase:
- Undertake necessary specialist studies;
- Assessment of environmental impacts;
- Compilation of management plans;
- Compilation of an EMP Report;
- Stakeholder document review and comment;
- Submission of final report for decision-making.

The EMP Report will include a description of the proposed project, a list of identified environmental aspects that will potentially be impacted upon by the prospecting project, an Impact Assessment for these aspects, and an Environmental Management Programme for the mitigation and management of the identified impacts.

A plan of study for undertaking the environmental impact assessment process to be undertaken will include-

- a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;

- a description of the aspects to be assessed as part of the environmental impact assessment process;
- aspects to be assessed by specialists;
- a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;
- a description of the proposed method of assessing duration and significance;
- An indication of the stages at which the competent authority will be consulted;
- particulars of the public participation process that will be conducted during the environmental impact assessment process; and
- a description of the tasks that will be undertaken as part of the environmental impact assessment process;
- Identify suitable 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.

7.4.2 Specialist Studies

7.4.2.1 Site Sensitivity Verification and Minimum Report Content Requirements

Prior to commencing with a specialist assessment, the current use of the land and the environmental sensitivity of the site under consideration identified by the national web based environmental screening tool (screening tool), where determined, must be confirmed by undertaking a site sensitivity verification.

The screening tool can be accessed at: https://screening.environment.gov.za/screeningtool.

- The site sensitivity verification must be undertaken by an environmental assessment practitioner or a specialist.
- The site sensitivity verification must be undertaken through the use of:

    (a) a desk top analysis, using satellite imagery;

    (b) a preliminary on-site inspection; and

    (c) any other available and relevant information.

- The outcome of the site sensitivity verification must be recorded in the form of a report that--

(a) confirms or disputes the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.;

(b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and

(c) is submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations (EIA Regulations).

7.4.2.2 Specialist Assessment and Minimum Report Content Requirements

Where a specialist assessment is required and no specific environmental theme protocol has been prescribed, the required level of assessment must be based on the findings of the site sensitivity verification and must comply with Appendix 6 of the EIA Regulations. In order to assess the environmental, social and cultural impacts of the proposed diamond prospecting activity, a number of specialist studies will be commissioned. The findings of these studies will be incorporated into the Environmental Impact Assessment Report (EIR). The specialist studies consider the proposed structure and activities of the operations, as well as the associated risks to the receiving physical and socio-cultural environment.

The following aspects of the biophysical environment will be considered in the baseline studies:

- Fisheries Assessment;
- Marine Biodiversity;
- Heritage and Archaeology;
- Review of Existing data for baseline Noise & Air Quality Assessment; and
- GIS Land Use Mapping.

7.4.3 Description of aspects to be assessed by specialists

- Provide a general description of the local marine fauna and flora in and around the sea concessions.
- Identify, describe and assess the significance of potential impacts of the proposed geophysical surveying and bulk sampling on the local marine biota.
- Identify practicable mitigation measures to reduce any negative impacts and indicate how these could be implemented during the construction and management of the proposed project.
- a review of recorded maritime casualties within both concession areas and their vicinity;
- input from a palaeontologist as to the likelihood of impacts arising from the bulk sampling programme on palaeontological resources in both concession areas; and
- a consideration of the potential for the presence of and impacts on submerged pre-colonial archaeological material in or on the seabed in the concession areas.
- Provide a general description of the local marine fauna and flora in and around the sea concessions.
- Identify, describe and assess the significance of potential impacts of the proposed geophysical surveying and bulk sampling on the local marine biota.
- Identify practicable mitigation measures to reduce any negative impacts and indicate how these could be implemented during the construction and management of the proposed project.

A general view of the existing socio-economic structures of the project area will be addressed to identify relevant social aspects and predict the anticipated future social developments and/or changes in the receiving human environment;

- Provide a baseline study describing the socio-economic factors of the affected population;
- Assess negative and positive impacts associated with the project;
- Identify feasible mitigation measures and benefits related with the project.

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

Methodology for Assessing Environmental Issues and Alternatives

According to National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014), the environment is described as the surrounding within which human 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 well-being.

Impact Assessment Methodology

(a) Nature of the impact

The NATURE of an impact can be defined as: "a *brief description of the impact being assessed, in terms of the proposed activity or project, including the socio-economic or environmental aspect affected by this impact*".

(b) Extent of the impact

The EXTENT of an impact can be defined as: "*a brief description of the spatial influence of the impact or the area that will be affected by the impact*".

EXTENT Extent or spatial influence of impact	**Footprint**	Only as far as the activity, such as footprint occurring within the total site area
	Site	Only the site and/or 500m radius from the site will be affected

	Local	Local area / district (neighbouring properties, transport routes and adjacent towns) is affected
	Region	Entire region / province is affected
	National	Country is affected

(a) Magnitude of the impact

The MAGNITUDE of an impact can be defined as: "*a brief description of the intensity or amplitude of the impact on socio-economic or environmental aspects".*

MAGNITUDE Magnitude / intensity of impact (at the specified scale)	**Zero**	Natural and/or social functions and/or processes remain *unaltered*
	Very low	Natural and/or social functions and/or processes are *negligibly* altered
	Low	Natural and/or social functions and/or processes are *slightly* altered
	Medium	Natural and/or social functions and/or processes are *notably* altered
	High	Natural and/or social functions and/or processes *severely* altered

(b) Duration of the impact

The DURATION of an impact can be defined as: "*a short description of the period of time the impact will have an effect on aspects*".

DURATION Duration of the impact	**Short term**	Construction phase up to 3 years after construction
	Medium term	Up to 6 years after construction
	Long term	More than 6 years after construction

(c) Probability of the impact occurring

The PROBABILITY of an impact can be defined as: "the *estimated chance of the impact happening*".

PROBABILITY	**Unlikely**	*Unlikely* to occur (0 – 25% probability of occurring)
	Possible	*May* occur (26 – 50% chance of occurring)
	Probable	*Likely* to occur (51 – 75% chance of occurring)
	Definite	Will *certainly* occur (76-100% chance of occurring)

(d) Degree to which impact can be reversed

The REVERSABILITY of an impact can be defined as: *"the ability of an impact to be changed from a state of affecting aspects to a state of not affecting aspects*".

REVERSABILITY	**Reversible**	Impacts can be reversed through the implementation of mitigation measures
	Irreversible	Impacts are permanent and can't be reversed by the implementation of mitigation measures

(e) Degree to which impact may cause irreplaceable loss of resources

The IRREPLACEABILITY of an impact can be defined as:" the amount of resources that can (not) be replaced".

IRREPLACEABILITY Irreplaceable loss of resources	**No loss**	*No* loss of any resources
	Low	*Marginal* loss of resources
	Medium	*Significant* loss of resources
	High	*Complete* loss of resources

(f) Degree to which the impact can be mitigated

The degree to which an impact can be MITIGATED can be defined as: "the effect of mitigation measures on the impact and its degree of effectiveness".

MITIGATION RATING	**MITIGATED** Degree impact can be mitigated	**High**	*Impact 100% mitigated*
		Medium	*Impact >50% mitigated*
		Low	*Impact <50% mitigated*

(g) Confidence rating

CONFIDENCE in the assessment of an impact can be defined as the:" *level of certainty of the impact occurring*".

CONFIDENCE RATING	**CONFIDENCE**	**Unsure**	Amount of information on and/or understanding of the environmental factors the potentially influence the impact is *limited*.
		Sure	Amount of information on and/or understanding of the environmental factors the potentially influence the impact is *reasonable and relatively sound.*
		Certain	Amount of information on and/or understanding of the environmental factors the potentially influence the impact is *unlimited and sound*.

(h) Cumulative impacts

The effect of CUMULATIVE impacts can be described as:" the effect the combination of past, present and "reasonably foreseeable" future actions have on aspects".

CUMULATIVE RATING	**CUMULATIVE EFFECTS**	**Low**	*Minor* cumulative effects
		Medium	*Moderate* cumulative effects
		High	*Significant* cumulative effects

7.4.5 The stages at which the competent authority will be consulted

The competent authority will be consulted during the

- Scoping phase
- Public Review of Documents
- EIA phase and release of the EMP
- Further Consultation after the EIA/EMP has been submitted if there are comments from I&AP's

8 PUBLIC PARTICIPATION DURING THE EIA PHASE

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

Public participation is an essential and regulatory requirement for an environmental authorization process and is guided by Regulations promulgated under NEMA, specifically the EIA Regulations. NEMA EIA Regulations defines the "Public Participation Process" as a process in which potential interested and affected parties (I&APs) are given an opportunity to comment on, or raise issues relevant to, specific matters".

The public participation process is designed to provide sufficient and accessible information to I&APs in an objective manner to assist them to:

During the Scoping Phase:

- Raise issues of concern and suggestions for enhanced benefits;
- Verify that their issues have been recorded;
- Assist in identifying reasonable alternatives; and
- Contribute relevant local information and traditional knowledge to the environmental assessment.

During the Impact Assessment Phase:

- Contribute relevant information and local and traditional knowledge to the environmental assessment;
- Verify that their issues have been considered in the environmental studies; and
- Comment on the findings of the environmental assessments.

The identified Interested and Affected Parties during the scoping phase will be made aware of the availability of the EIA report VIA

- A notification letter
- Emails and SMS
- Press advertisements
- Site Notices
- Public and Stakeholder Meetings
- The EIA will be made available for review to all IAPs for 30days. All registered IAPs will be notified by email, fax, SMS, or post of the report's availability. Hard copies of the draft report will be placed at:
- Public Libraries, Municipal Offices and other accessible places.

8.2 Details of the engagement process to be followed

- In addition to land owners, other relevant organisations will be identified and notified of the application. This includes municipal and State departments with jurisdiction in the area and Non-governmental Organisations (NGOs) with an interest.
- A notification letter with the details of the availability of the EIA will be distributed (by email, fax or post) to all land owners. All IAPs will be asked to distribute the documents to anyone who may be interested or affected by the project.
- Site Notices
- Public and Stakeholder Meetings
- Register of IAPs during the scoping report will be used to notify the availability of the EIA
- EIAR/EMPr will be released for public review for 30 days each excluding public and school holidays.
- Hard copies of the draft report will be placed at: Public Libraries, Municipal Offices and other accessible places.
- A final Consultation report with stakeholder comments from each phase will be submitted.

Framework of a Stakeholder Engagement Plan

Regulations and requirements;

- Summary of previous engagement;
- Project stakeholders inclusive of an analysis and categorisation of all project stakeholders;
- Stakeholder engagement process inclusive of the regulatory process and separate engagement processes (i.e. with neighbouring facilities, or international NGOs);
- Timetable;
- Resources and responsibilities;
- Grievance mechanism;
- Key messages (code of conduct);
- Monitoring and reporting – i.e. comments and response tracking; and
- Management functions.

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

Once the competent authority has approved the SR, the Impact Assessment Phase will commence. Stakeholders will receive notification of the start of the Impact Assessment Phase and opportunities for public review and comment.

Public participation during the Impact Assessment Phase revolves around a review of the findings of the EIA, presented in the Draft EIA Report. This report will be made available for public comment for a period of 30 days.

Stakeholders will be invited to comment on the Draft EIA Report and EMP in the following ways:

- By completing a comment sheet made available together with the report at the public places, and by submitting additional written comments, by email or fax, or by telephone, to the public participation office; and
- The Draft EIA Report and EMP Report and its accompanying Specialist Studies will be distributed for comment to public places in the project area, to everyone who requests a copy email.

The documents will contain a project location, map as well as detailed legislations triggered by the project and a project description as well as reference number of the project.

The scoping report will be made available to the public for review at public libraries. The scoping report will entail potential impacts, mitigation measures as well as specialist reports to be undertaken to supplement the background information of the proposed project.

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

The Environmental Impact Assessment Phase will include the following activities:

1) Undertake necessary specialist studies;
2) Assessment of environmental impacts;
3) Compilation of management plans;
4) Compilation of an EMP Amendment Report;
5) Stakeholder document review and comment;
6) Submission of Scoping and EIA report for decision-making

The EIA report must contain:

- A description of the property on which the activity is to be undertaken and the location of the activity on the property;
- A description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity;

- Details of the public participation process conducted including
    - Steps undertaken in accordance with the plan of study;
    - A list of persons, organisations and organs of state that were registered as interested and affected parties;
    - A summary of comments received from, and a summary of issues raised by registered interested and affected parties, the date of receipt of these comments and the response of the EAP to those comments; and

- Copies of any representations and comments received from registered interested and affected parties;

- A description of the need and desirability of the proposed activity;
- A description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity;
- An indication of the methodology used in determining the significance of potential environmental impacts;
- A description and comparative assessment of all alternatives identified during the environmental impact assessment process;
- A summary of the findings and recommendations of any specialist report or report on a specialized process;
- A description of all environmental issues that were identified during the environmental impact assessment process, an assessment of the significance of each issue and an indication of the extent to which the issue could be addressed by the adoption of mitigation measures;
- An assessment of each identified potentially significant impact, including:
  - Cumulative impacts;
  - The nature of the impact;
  - The extent and duration of the impact;
  - The probability of the impact occurring;
  - The degree to which the impact can be reversed;
  - The degree to which the impact may cause irreplaceable loss of resources; and
  - The degree to which the impact can be mitigated;
- A description of any assumptions, uncertainties and gaps in knowledge;
- A reasoned opinion as to whether the activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;
- An environmental impact statement which contains:
  - A summary of the key findings of the environmental impact assessment; and
  - A comparative assessment of the positive and negative implications of the proposed activity and identified alternatives;

A draft environmental management programme containing;

- Copies of any specialist reports and reports on specialised processes; and
- Any specific information that may be required by the competent authority

9 MITIGATION MEASURES

9.1 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 5: Mitigation Measures

Potential Environmental Impacts & Sources	Measures to prevent, mitigate, minimize or manage the impacts
CONSTRUCTION PHASE	
Activity: establishment/vessel launch site (harbour) Impact: **Air pollution** (dust, gaseous emissions) Source: Establishment, movement of vehicles.	• Dust suppression measures such as spraying with water • Speed limits will be established and enforced • Equipment and vehicles equipped with standard exhaust systems which minimize the amount of emissions
Activity: maintenance of vehicles and or drill rig Impact: **Water pollution (surface water, groundwater)** Source: spillages from vehicles	• Use oil trays • Use modern vehicles in good working condition • Take vehicles to accredited workshop in town • Use absorbents to trap hydrocarbons
Activity: Disposal of Waste Impact: **Land degradation, land-use and capability** Source: Poor waste management	• Place waste receptacles at strategic points • Monitor housekeeping behaviour and insist on corrective action • Waste will be disposed of in approved site
OPERATIONAL PHASE	
Activity: Preparation of prospecting area Impact: marine habitat degradation, land-use and capability Source: Drilling and bulk sampling Poor waste management	• Prospected areas will increase sedimentation during excavations • Debris will be removed and disposed of in approved site • Areas which do not form part of prospecting site will not be disturbed.
Activity: prospecting and lubrication of equipment Impact: **water pollution** (surface water, groundwater) Source: leaks, spillages from equipment and vehicles	• Operate outside 100 m distance from stream or any water body • Maintenance of vessels and drilling equipment
Activity: Vehicle movement during operational hours Impact: **Ecological degradation** Source: Uncontrolled vehicle movement and poor rehabilitation	• Most of the biodiversity will be restored after closure • Movement of vehicles will be restricted to designated areas
Activity: Accidental spillages Impact: **Land pollution** Source: Lack of proper house keeping	• Trays used to trap hydrocarbons • Absorbent agents to be used to trap hydrocarbons and grease • Any spillage will be recorded, and remedial action taken immediately • Reporting of significant hazardous spillages
Activity: Prospecting geophysical survey Impact: **Noise** Source: Machine and Vehicle engines	• The operation will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable legislation regarding noise control

	• Employees will be equipped with ear plugs and other protective gear. All vehicles will be equipped with silencers and maintained in a roadworthy condition
Activity: Prospecting Vessels Impact: **Aesthetic pollution** Source: visibility of site	• Site selection to prioritize areas not to exposed to the public or local residences • Visual impact will be temporary
Activity: Drilling Impact: **Destruction of fauna and flora** Source: sedimentation and visibility of site	• Conduct the invasive prospecting during off peak fishing and tourism phases. • Marine biodiversity to specify mitigation measures
Activity: Bulk Excavation Impact: **Land degradation** Source: sedimentation and visibility of site	• Conduct the invasive prospecting during off peak fishing and tourism phases. • Site selection to prioritize areas not to exposed to the public or local residences
Activity: Bulk sample Impact: **Marine degradation** Source: visibility of site	• Conduct the invasive prospecting during off peak fishing and tourism phases. • Marine biodiversity to specify mitigation measures
DECOMMISSIONING AND CLOSURE PHASE	
Activity: de-establishment from harbour Impact: **Air pollution** (dust, gaseous emissions) Source: movement of vehicles.	• Speed limits will be established and enforced • Very temporary in nature
Activity: De-establishment / removal of infrastructure Impact: **Noise** Source: vehicle movement	• The operation will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable legislation regarding noise control • Employees will be equipped with ear plugs and other protective gear. All vehicles will be equipped with silencers and maintained in a roadworthy condition

9.2 Other Information required by the competent Authority

Additional consultation and studies might be requested by the relevant authorities.

9.2.1 Impact on the socio-economic conditions of any directly affected person.

The socio-economic conditions will be identified and described as part of the EIA process. Preliminary it can be assumed that livelihoods of the adjacent landowners will be impacted by the disturbances on fisheries and tourism.

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

In terms of the National Heritage Resources Act, 1999 (Act no. 25 of 1999) an Archaeological Impact Assessment will undertaken in order to establish if any localities of heritage and paloentological significane are present.

9.2.3 Potential Cumulative impact and mitigation measures

Table 6: Cumulative Impacts and Mitigation Measures

TRIGGERS	POTENTIAL CUMULATIVE IMPACT	SIGNI-FICANCE	MITIGATION AND MANAGEMENT MEASURES	SIGNI-FICANCE (with mitigation)
Use of hazardous substances (hydrocarbons), soil erosion	Contamination of water resources	Low	Avoidance of hazardous substances Prevention of spillages Proper house keeping Prevent soil erosion Concurrent rehabilitation	Low
Soil erosion	Reduction of land capability	High	Restriction on vehicular circulation Immediate rehabilitation of disturbed sites	Low
Loss of sense of place and serenity	Reduction of land land-use potential Reduction in tourism	High	Reduction of noise and visual aspects Immediate rehabilitation of disturbed sites Conducting the invasive prospecting off tourism peaks	Medium
Drilling and bulk sampling dredging of sediment	Loss of fisheries	High	Prospecting should be conducted in cognisance with migratory patterns to minimise disturbances	Medium
Lack of supervision and site surveys	Loss of biodiversity, marine habitats and heritage resources	Moderate	Use of existing roads and tracks. Limited vehicular movement Prospect in one area at a time to systematically and other land uses	Low
Improper use of machinery and vehicles	Generation of dust, smog and noise	Moderate	Maintenance of machinery and vehicles Operate within prescribed working hours	Moderate
Perception of job opportunities	Conflict between project team and the local community	Moderate	Employ local people, communicate the right messages about the project	Negligible

10 RECOMMENDATIONS

Section 12 of the MPRDA 2002 states “The holder of a permit or authorization remains liable for complying with the relevant provisions of the Act until the Regional Director has issued to him a certificate to the effect that he has compiled with the said provisions” The EAP is under the opinion that the applicant has complied with these provisions.

The risks that have been identified need to be mitigated. Activity should be granted with the conditions that the applicant implements the recommendations that have been provided in the risk assessment report. This conclusion assumes that Moonstone Diamond Marketing undertakes prospecting as described and that the measures set out in the EMP are implemented in full.

10.1 Undertaking Regarding Correctness of Information

DECLARATION OF INDEPENDENCE

I, Yvonne Gutoona, on behalf of Archean Resources (Pty) Ltd in my capacity as an environmental consultant, hereby declare that I:-

- Act as an independent consultant;
- Do not have any financial interest in the undertaking of this project, other than remuneration for the work performed in terms of the National Environmental Management Act EIA Regulations Amendment of December 2014;
- Have and will not have vested interest in the proposed activity nor will I engage myself in any conflicting interest associated with this project
- I undertake to disclose and provide to the competent authority any material or information at my disposal regarding this project as required in terms of National Environmental Management Act (EIA regulations of 04 December 2014);
- Based on the information provided to me by the client and in addition to information obtained during the course of this study, I have presented the results and conclusion with regard to this project to the best of my professional ability;

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

_____

Signature of the EAP

DATE:

14-16 August 2021- Reviewed

UNDERTAKING REGARDING LEVEL OF AGREEMENT

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

_____

Signature of the EAP

DATE:

18 August 2021- Draft Release Date