



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

FOR LISTED ACTIVITIES ASSOCIATED WITH THE PROPOSED DIAMOND PROSPECTING RIGHT IN OFFSHORE CONCESSION AREAS 4C AND 5C OFF THE WEST COAST, SOUTH AFRICA

DMR Reference Number: NCS 30/5/1/1/2/1 (12853) PR

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

NAME OF APPLICANT:	Samara Mining (Pty) Ltd
TEL NO:	+27 53 861 1575
FAX NO:	+27 53 839 4880
POSTAL ADDRESS:	PO Box 11124, Hadison Park, Kimberley, 8306
PHYSICAL ADDRESS:	13 Hogsback Crescent, Carters Glen, Kimberley
FILE REFERENCE NUMBER SAMRAD:	NCS 30/5/1/1/2/1 (12853) PR

IMPORTANT NOTICE

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

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

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

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

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

EXECUTIVE SUMMARY: SCOPING REPORT

DIAMOND PROSPECTING RIGHT IN OFFSHORE CONCESSION AREAS 4C AND 5C OFF THE WEST COAST, SOUTH AFRICA

1 INTRODUCTION

Samara Mining (Pty) Ltd (Samara) intends to undertake an exploration programme in Inshore Block 4C and 5C (the Block) located approximately 10 km offshore of the West Coast of South Africa.

The application is for a Prospecting Right for bulk sampling for diamonds which will be undertaken in a phased approach.

To prospect for diamonds, Samara Mining intends to use both invasive and non-invasive methods. The non-invasive method will be made up of desktop studies, geophysical surveys, 3D geological modelling and resource estimation. The invasive method will comprise of bulk sampling.

Desktop studies entail combining available historic data in order to get a clear understanding of the proposed diamond deposit character.

Geophysical surveys will be done to identify geological features where further exploration sampling will be undertaken. The equipment for the survey will be deployed from a vessel appropriate for the depth and survey method to be used.

Where geological features of interest (showing potential for diamond prospecting) have been identified, follow up surveys and sampling will be undertaken. Sampling will entail the extraction of diamonds from the seabed using fit-for purpose vessels, equipped with a crawler that will dredge materials from the seabed. The diamonds will be sorted from the dredged material in a mechanical treatment plant on board the vessel.

Samara has appointed NDI Geological Consulting Services (Pty) Ltd (NDI) as the Independent Environmental Assessment Practitioner (EAP), to undertake the application for Environmental Authorisation (EA) while SRK Consulting (South Africa) (Pty) Ltd (SRK) has been sub-contracted to provide

specialist input and to undertake the Public Participation Process.

2 GOVERNANCE FRAMEWORK

Sections 24 and 44 of the National Environmental Management Act 107 of 1998 (NEMA) make provision for the promulgation of regulations that identify activities which may not commence without an EA issued by the competent authority, in this case, the Department of Mineral Resources (DMR). The Environmental Impact Regulations (EIA) Regulations, 2014 (Government Notice (GN) R982)¹, promulgated in terms of NEMA, govern the process, methodologies and requirements for the undertaking of EIAs in support of EA applications. The EIA Regulations are accompanied by Listing Notices (LN) 1-3 that list activities that require EA.

The EIA Regulations, 2014, lays out two alternative authorisation processes. Depending on the type of activity that is proposed, either a Basic Assessment (BA) process or a Scoping and Environmental Impact Report (S&EIR) process is required to obtain EA. LN 1 lists activities that require a BA process, while LN 2 lists activities that require S&EIR. LN 3 lists activities in certain sensitive geographic areas that require a BA.

The proposed project triggers activities listed in terms of LN 1 and LN 2 of the EIA Regulations, 2014, requiring an EIA. The equivalent activities in terms of the EIA Regulations, 2014, are included in **Table 1**.

¹ As amended by GN R327, GN R325 and GN R324 on 7 April 2017

Table 1: Listed activities triggered by the project

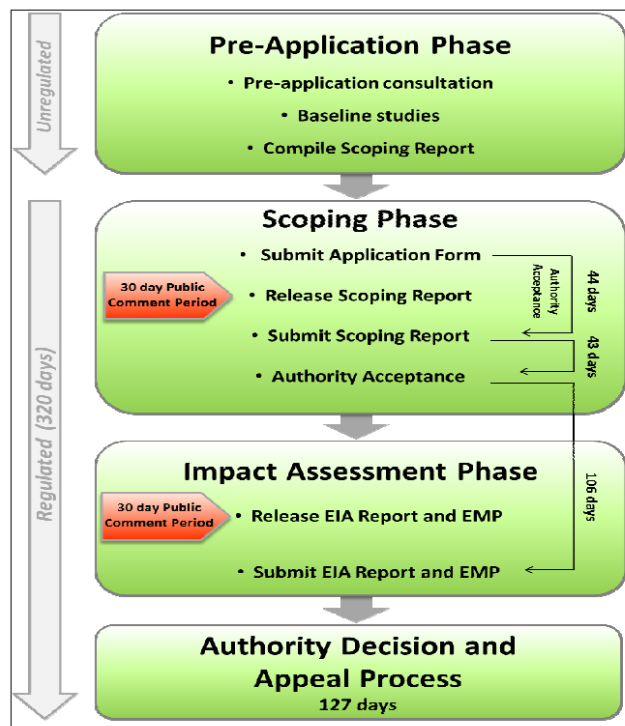
No	Description
LN 1 (requiring BA)	
19A	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from the sea.
20	Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the MPRDA.
22	The decommissioning of any activity requiring a prospecting right.
LN 2 (requiring S&EIR)	
19	The removal and disposal of minerals contemplated in terms of section 20 of the MPRDA including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource.

Consequently, the proponent is obliged to apply for EA for the project. Since activities listed under Regulation GN R984 apply to the project, a S&EIR process is required.

It is not anticipated that other key authorisations, permits or licences might be required before the project may proceed.

3 ENVIRONMENTAL PROCESS

The EIA Regulations, 2014, define the detailed approach to the S&EIR process, which consists of two phases: the Scoping Phase (the current phase) and the Impact Assessment Phase (see **Figure 1**).

**Figure 1: S&EIR Process**

***Note:** EMP = Environmental Management Programme

The objectives of the Scoping Phase are to:

- Identify stakeholders and inform them of the proposed activity, feasible alternatives and the S&EIR process;
- Describe the affected environment and potential environmental issues and benefits arising from the proposed project that may require further investigation in the Impact Assessment Phase;
- Develop terms of reference for specialist studies to be undertaken in the Impact Assessment Phase;
- Provide stakeholders with the opportunity to participate in the process and identify any issues or concerns; and
- Produce a Scoping Report for submission to the relevant authorities.

Once the Scoping Phase has been completed, the Impact Assessment Phase will commence, in which the significance of potential impacts will be assessed and measures to avoid and /or mitigate negative impacts and enhance benefits will be determined.

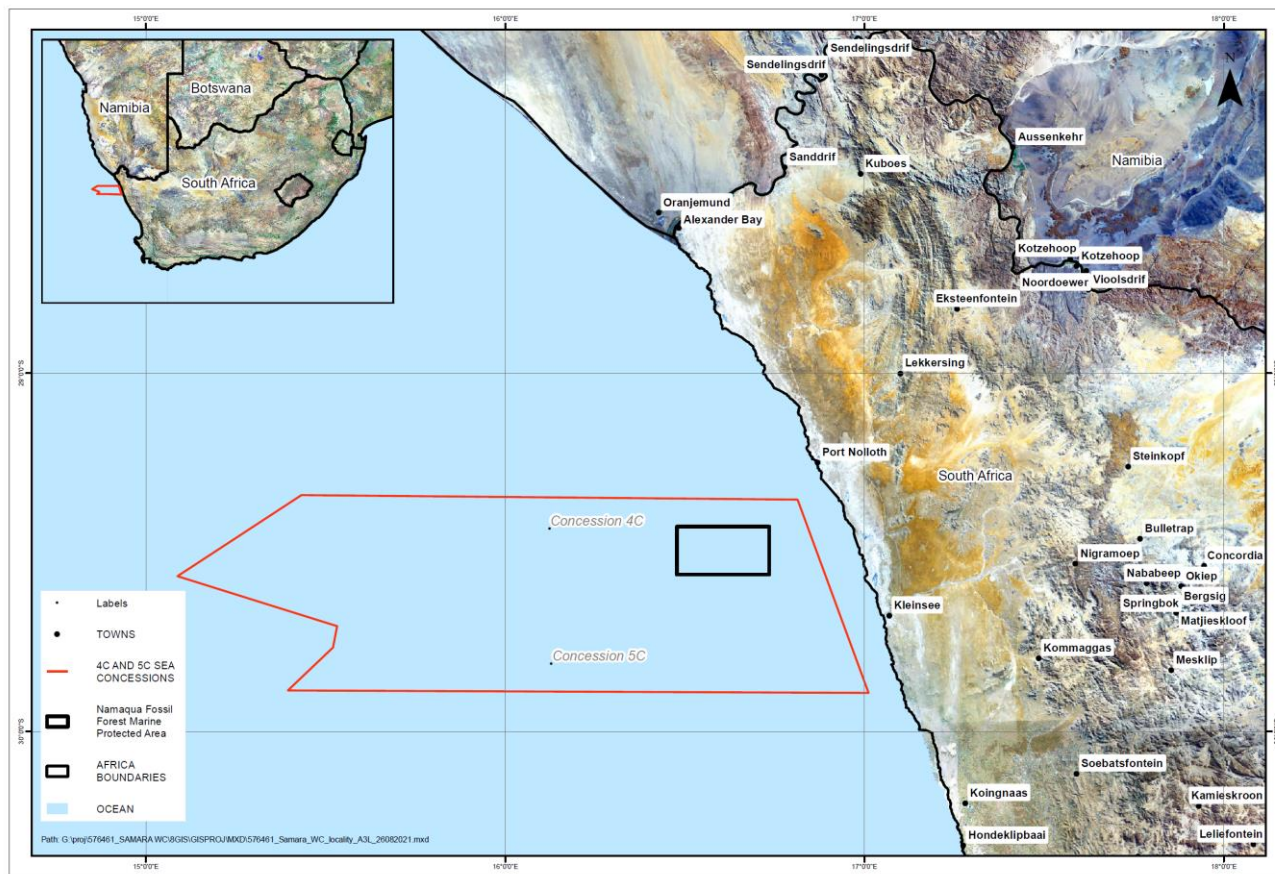


Figure 2: Locality Map

4 DESCRIPTION OF THE SITE AND ENVIRONMENT

The project is located in Offshore Concession Areas 4C and 5C (**Figure 2**), which are offshore areas located approximately 10 km seaward of the West Coast of South Africa. The total Prospecting Right area is approximately 912 206 hectares. The eastern boundary of the proposed Offshore Concession Area is located approximately 14.5 km from both Port Nolloth and from Kleinsee, respectively. The western boundary of the Prospecting Right area is located between approximately 140 to 180 km offshore.

It is noted that the Prospecting area excludes the Namaqua Fossil Forest Marine Protected Area, located within the Offshore concession areas.

The Offshore Concession Areas lies within the southern zone of the Benguela Current region characterised by the cool Benguela upwelling system. Massive offshore movement of surface water is driven by dominant southerly and south-easterly winds in summer. This results in strong upwelling of nutrient-rich bottom waters. Upwelling is a physical phenomenon that supports pelagic fishery which is an important source of protein for the coastal population.

Offshore Concession Areas 4C and 5C fall into the cold temperate Namaqua Bioregion. Communities within the marine habitats within the southern African West Coast region are mostly abundant.

Although some species may be encountered within the sea areas, most seabirds in the region reach highest concentrations offshore of the shelf break, typically at 200 to 500 m depth.

Various marine mammals are likely to be present in the area including seals, dolphins and migrating whales.

Human utilisation in the area is limited. Demersal fisheries in the extreme offshore portions of the Concession area whilst traditional line-fishing has not been reported. Typically, small-scale fishery rights are located close to shore and may potentially extend into the shallow water areas of Offshore Concession Areas 4C and 5C.

Shipping traffic is primarily located on the outer edge of the continental shelf. Traffic inshore of the continental shelf largely consists of fishing vessels.

Although no development or production from the South African West Coast offshore, exploration for oil and gas is being undertaken in the area.

Both marine diamond prospecting and mining occurs near Offshore Concession Areas 4C and 5C.

5 PROJET AND PROCESS DESCRIPTION

To prospect for diamonds, Samara Mining intends to use both invasive and non-invasive methods. The non-invasive method will be made up of desktop (including analytical desktop) studies, geophysical surveys, 3D geological model and resource estimation.

The project aims to gather sufficient data on the proposed prospecting right concession. A phased approach to exploration will be undertaken. Commencing with additional geophysical data acquisition over areas where coverage is not adequate to support sampling and adjacent to areas onshore which show potential for diamond prospecting. The objective of the 1st phase of sampling will be to ground truth geophysics and identify mineralization. At the latter end of the sampling voyage, it is proposed that follow up sampling be taken around positive results to expand on mineralization continuity.

The prospecting process will be undertaken in phases as follows:

Phase 1 (Desktop Studies): This will entail combining available historic data to get a clear understanding of the proposed diamond deposit character.

Phase 2 (Geophysical Surveying): Conducting geophysical surveys to identify geological features where exploration sampling will be undertaken. The equipment for the survey will be deployed from a vessel appropriate for the depth and survey method to be used.

Phase 3 (Exploration Sampling): Where geological features of interest (showing potential for diamond prospecting) have been identified in Phase 1 and Phase 2, follow up surveys and sampling will be undertaken in the areas of interest. The sampling will entail the extraction of diamonds from the seabed using fit-for purpose vessels that are designed for the extraction of diamonds from the seabed. The vessel will be equipped with a crawler that will dredge materials from the seabed. The diamonds will be

sifted from the dredged material in a treatment plant on board the vessel.

Phase 4 (Feasibility study): Mineral resource estimation and determination of the feasibility of the project when all factors have been considered.

6 ALTERNATIVES

Appendix 2 Section 2 (h)(i) of the EIA Regulations, 2014, requires that all S&EIR processes must identify and describe feasible and reasonable alternatives, including the option of not implementing the activity (No-Go Alternative).

Not all categories of alternatives are applicable to the project. Samara Mining proposes to analyse existing data available for the Concessions to determine the presence of economically viable diamond deposits and therefore no location alternatives are considered in the Scoping and EIA phases of the project.

The proposed technologies have been chosen based on long term proven success in diamond prospecting.

The option of not implementing the activity will result in a loss of valuable information regarding the mineral status (diamond deposits) present. In addition to this, should economical diamond deposits be present and the applicant does not have the opportunity to prospect, the opportunity to utilise the deposits will be lost.

7 STAKEHOLDER ENGAGEMENT

Stakeholder engagement is a key component of the S&EIR process and is being undertaken in accordance with Chapter 6 of the EIA Regulations, 2014. The stakeholder engagement activities related to the Scoping Phase are summarised in **Table 2**.

Relevant local, provincial and national authorities, conservation bodies and local forums have been directly notified of the S&EIR process and the release of the Scoping Report for comment.

Table 2: Stakeholder Engagement during Scoping

Activity	Date
Release Scoping Report to the Public	27 August 2021
Public Comment Period	28 August – 27 September 2021
Compile Issues and Responses Summary and finalise Scoping Report	September 2021

8 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

The impacts of a project are mostly linked to the sensitivity of the receiving environment and proximity of receptors, the extent or footprint and nature of the development, expected discharges and stakeholders' perceptions.

Based on the above considerations as well as the professional experience of the Environmental Assessment Practitioners and input from specialists, the following key environmental issues – potential negative impacts and potential benefits of the project in its proposed setting – have been identified.

Marine ecology - Potential impact on marine biota and resources, including the seabed;

Underwater heritage – Potential impacts on sites of archaeological or palaeontological significance;

Marine transport routes – Potential impact on marine transport routes a result of the statutory safety zone requirements around prospecting vessels;

Fishing: Potential impact on fishing resulting in economic loss;

Socio-economic – Benefits of limited employment opportunities and local investment opportunities. Potential impact on other marine prospecting/mining and exploration operations.

Certain impacts, while important, are considered likely to be less significant, including air quality, traffic and visual (or sense of place) aspects.

9 PLAN OF STUDY FOR THE IMPACT ASSESSMENT

To address the potential issues and impacts identified thus far, the following specialist studies are proposed:

- Underwater Heritage Impact Assessment;
- Marine Ecology Assessment; and
- Fisheries Impact Assessment.

Specialists will be required to provide detailed baseline information and to identify and assess the potential impacts of the proposed project within their particular field of study. In addition, specialists will be required to identify practicable mitigation and optimisation measures to avoid or minimise potential negative impact and/or enhance any benefits. SRK's standard impact rating methodology will be employed in the assessment of impacts.

Once specialist studies have been completed, the results will be collated into an EIA Report and EMP. The EIA Report and EMP will be released for public comment through notifications to registered Interested and Affected Parties (IAPs). Key authorities will also be consulted as part of the process.

All comments received will be incorporated into an Issues and Responses Summary which will be appended to the EIA Report. The EIA Report and EMP will then be submitted to the DMR for their consideration in decision-making.

HOW YOU CAN PARTICIPATE IN THE EIA PROCESS

The Scoping Report is not a final report and can be amended based on comments received from stakeholders.

REVIEW THE REPORT

Copies of the complete report are available for public review at the following locations: SRK's website:

<https://www.srk.com/en/ww-library>.

REGISTER OR PROVIDE YOUR COMMENT

Register or send written comment to:

Vusi Masango

SRK Consulting

P.O. Box 35290, Menlo Park, Pretoria, 0102

Email: vmasango@srk.co.za

Tel: + 27 12 361 9821

Fax: +27 86 514 9768

Issues and concerns identified in the Scoping Study will assist in focussing the EIA and will be used to refine the terms of reference for specialist investigations. Stakeholders are therefore urged to participate. IAPs are invited to comment, and/or to register on the project database. IAPs must provide their comments together with their name, contact details (preferred method of notification, e.g. email), and an indication of any direct business, financial, personal or other interest which they have in the application, to the contact person below, by **27 September 2021**.

Relevant Organs of State have been automatically registered as stakeholders. According to the EIA Regulations, 2014, all other persons must request in writing to be placed on the register, submit written

comments or attend meetings in order to be registered as stakeholders and be included in future communication for the project.

By registering as a stakeholder, you consent to SRK processing and, if necessary (i.e. in the event of an Appeal being lodged against the project), disclosing your personal information which SRK undertakes to do in accordance with our Protection of Personal Information Policy.

Profile and Expertise of EAPs

Samara has appointed NDI Geological Consulting Services (Pty) Ltd (NDI) as the Independent Environmental Assessment Practitioner (EAP), to undertake the Environmental Impact Assessment (EIA) process required in terms of the National Environmental Management Act 107 of 1998 (NEMA) while SRK Consulting (South Africa) (Pty) Ltd (SRK) has been sub-contracted to provide specialist input and to undertake the Public Participation Process.

NDI is a young South African based black and woman owned consulting company. The company has established offices in Kimberley, Northern Cape. The company now has another branch in Johannesburg, Gauteng. NDI personnel have geological, environmental and geotechnical engineering experience in the exploration and mining background. The company has more than 20 years combined team experience in the exploration and mining fields. The team has experience in commodities such as gold, platinum, coal, iron ore, manganese, chrome, uranium, rare earth elements and mineral sands. NDI is well versed with the government regulations and policies. NDI's experience has been acquired locally and in other African countries.

SRK Consulting comprises over 1 400 professional staff worldwide, offering expertise in a wide range of environmental and engineering disciplines. SRK's Cape Town and Pretoria environmental departments have distinguished track records of managing large environmental and engineering projects, extending back to 1979. SRK has rigorous quality assurance standards and is ISO 9001 accredited.

As required by NEMA, the qualifications and experience of the key independent Environmental Assessment Practitioners (EAPs) undertaking the EIA are detailed below and Curriculum Vitae provided in Appendix B.

Project Director and Reviewer (SRK): Christopher Dalgliesh, BBusSc (Hons); MPhil (EnvSci)

Chris Dalgliesh is an SRK Director and Principal Environmental Consultant with over 34 years' experience, primarily in Southern Africa, West Africa, South America, the Middle East and Asia. Chris has worked on a wide range of projects, notably in the natural resources, Oil & Gas, waste, infrastructure and industrial sectors. He has directed and managed numerous Environmental and Social Impact Assessments (ESIAs), in accordance with international standards (e.g. IFC). He regularly provides high level review of ESIAs, frequently directs Environmental and Social Due Diligence studies and monitors project on behalf of financial institutions, and also has a depth of experience in Strategic Environmental Assessment (SEA) and Resource Economics. He holds a BBusSci (Hons) and M Phil (Env) and is a Registered Environmental Assessment Practitioner.

Project Manager: Dr Laetitia Coetser (SRK), PhD (Water Resource Management)

Pri.Sci. Nat 400312/06

Laetitia Coetser is a Partner and Principal Environmental/Water Consultant with over 23 years' experience. Laetitia has been involved in the field of water and environmental management for more than 23 years. She holds a Ph.D. in Water Resource Management at the University of Pretoria and is a registered Professional Natural Scientist (SACNASP) (Pr.Sci.Nat 400312/06). She has an in-depth understanding and application of Integrated Environmental Management. Laetitia provides specialist advice to Environmental Impact Assessments and Environmental Management Plans in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA), NEMA and NEM: WA as well as to Water Use Authorisations in terms NWA. She has been responsible for the project, including contract management; and integration of numerous Environmental Authorisation Projects having extensive experience in the compilation, implementation, amendment and assessing Environmental Impact Assessments, Environmental Management Plans in terms of the MPRDA,

NEMA and NEM: WA. Laetitia has a range of specializations including water resource management, surface water, stakeholder engagement, data management and interpretation, environmental compliance auditing and due diligences.

Environmental Assessment Practitioner: Ndivhudzannyi Mofokeng (NDI), BSc (Hons) Earth Sciences in Mining and Environmental Geology

Ndivhudzannyi holds BSc (Hons) Earth Sciences in Mining and Environmental Geology. She has close to 12 years' experience in the exploration and open cast work in the mining industry. She has proven leadership skills from supervising exploration rigs (Reverse Circulation and percussion drilling). She has proven working experience in field exploration and mapping, borehole logging, borehole sampling, sample preparation for laboratory analysis, handling of GPS, supervisory duties within the field, geological report and progress report writing, including Prospecting Work Programmes and Environmental Management Plans, handling the Department of Mineral Resources (DMR) documents in general. Ndivhudzannyi has as a solid technical background in GIS Arcview software (GSSA Prof Reg), Rockworks, Turbo-Cad and Turbo-Sketch, and Global Mapper 9 Application.

Statement of SRK and NDI Independence

Neither SRK nor any of the authors of this Report, including NDI, have any material present or contingent interest in the outcome of this Report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of SRK.

SRK and NDI have no beneficial interest in the outcome of the assessment which is capable of affecting its independence.

Environmental Assessment Practitioner Affirmation

Section 16 (1) (b) (iv), Appendix 1 Section 3 (1) (r), Appendix 2 Sections 2 (j) and (k) and Appendix 3 Section 3 (s) of the EIA Regulations, 2014 (promulgated in terms of NEMA), require an undertaking under oath or affirmation by the EAPs in relation to:

- The correctness of the information provided in the report;
- The inclusion of comments and inputs from stakeholders and interested and affected parties;
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties; and
- The level of agreement between the EAP and interested and affected parties on the Plan of Study for undertaking the environmental impact assessment.

NDI and the EAPs managing this project hereby affirm that:

- To the best of our knowledge the information provided in the report is correct, and no attempt has been made to manipulate information to achieve a particular outcome. Some information, especially pertaining to the project description, was provided by the applicant and/or their sub-contractors. In this respect, SRK's standard disclaimer (inserted in this report) pertaining to information provided by third parties applies;
- To the best of our knowledge all comments and inputs from stakeholders and interested and affected parties have been captured in the report and no attempt has been made to manipulate such comment or input to achieve a particular outcome. Written submissions are appended to the report while other comments are recorded within the report. For the sake of brevity, not all comments are recorded verbatim and are mostly captured as issues, and in instances where many stakeholders have similar issues, they are grouped together;
- Information and responses provided by the EAP to interested and affected parties are clearly presented in the report. Where responses are provided by the applicant (not the EAP), these are clearly indicated;

- With respect to EIA Reports, NDI will take account of I&APs' comments on the Plan of Study and, insofar as comments are relevant and practicable, accommodate these during the Impact Assessment Phase of the EIA process.

Note: An Affirmation signed in the presence of a Commissioner of Oaths is also included in Appendix A

Disclaimer

The opinions expressed in this report have been based on the information supplied to SRK/NDI by Samara. SRK/NDI has exercised all due care in reviewing the supplied information, but conclusions from the review are reliant on the accuracy and completeness of the supplied data. SRK/NDI does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this report apply to the site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which SRK/NDI had no prior knowledge nor had the opportunity to evaluate.

Report Index in Relation to the NEMA Regulations

Regulation 2, Appendix 2 of GN R982 published in terms of NEMA stipulates the minimal requirements and issues that need to be addressed in the Scoping Report. This report strives to address all these requirements as per regulations. Table 3 indicates the regulations that have been addressed and the section of the Scoping Report where these requirements can be found.

Table 3: Requirements of Regulation 2 of GNR 982

GN R982, App 2 Ref.:	Requirement	Section Ref.:
(2) (a)	Details of:	
(2) (a) (i)	The EAP who prepared the report	Section 2 (a)
(2) (a) (ii)	The expertise of the EAP, including a Curriculum vitae	Appendix A & Appendix B
(2) (b)	Location of the activity, including:	
(2) (b) (i)	21 digit Surveyor General code of the property	n/a
(2) (b) (ii)	Physical address and farm name (where available)	n/a
(2) (b) (iii)	The coordinates of the boundary of the property (where (2) (b) (i) and (2) (b) (ii) are not available)	Section 2 (b)
(2) (c)	A plan indicating the location of the proposed activity and associated infrastructure, or:	Figure 3
(2) (c) (i)	For linear activities: a description and coordinates of the corridor in which the proposed activity is to be undertaken	n/a
(2) (c) (ii)	On land where the property has not been defined, the coordinates within which the activity is to be undertaken	Section 2 (b)
(2) (d)	A description of the scope of the proposed activity, including	
(2) (d) (i)	All listed and specified activities triggered	Section 2 (d) (i)
(2) (d) (ii)	A description of activities to be undertaken, including associated infrastructure	Section 2 (d) (i)
(2) (e)	A description of the policy and legislative context	Section 2 (e)
(2) (f)	Motivation for need and desirability for the proposed development	Section 2 (f)

GN R982, App 2 Ref.:	Requirement	Section Ref.:
(2) (h)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including	Section 2 (h)
(2) (h) (i)	Details of all alternatives considered	n/a
(2) (h) (ii)	Details of public participation process undertaken, including copies of the supporting documents and inputs	Appendix D
(2) (h) (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	Appendix D
(2) (h) (iv)	The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	Section 2 (h) (iv)
(2) (h) (v)	The impacts and risks identified, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed, may cause irreplaceable loss of resources, and can be avoided, managed or mitigated	Section 2 (h) (v)
(2) (h) (vi)	The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks	Section 2 (h) (vi)
(2) (h) (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	Section 2 (h) (vii)
(2) (h) (viii)	Possible mitigation measures that could be applied and level of residual risk	Section 2 (h) (viii)
(2) (h) (ix)	Outcome of the site selection matrix	n/a
(2) (h) (x)	If no alternative development locations for the activity were investigated, the motivation for not considering such	Section 2 (h) (x)
(2) (h) (xi)	A concluding statement indicating the preferred alternative development location within the approved site	Section 2 (h) (xi)
(2) (i)	A plan of study for the EIA, including:	Section 2 (i)
(2) (i) (i)	A description of the alternatives to be considered and assessed including the option of not proceeding	Section 2 (i) (i)
(2) (i) (ii)	A description of the aspects to be assessed as part of the environmental impact assessment process	Section 2 (i) (ii)
(2) (i) (iii)	Aspects to be assessed by specialists	Section 2 (i) (iii)
(2) (i) (iv)	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.	Section 2 (i) (iv)
(2) (i) (v)	A description of the proposed method of assessing duration and significance	Section 2 (i) (v)
(2) (i) (vi)	An indication of the stages at which the competent authority will be consulted	Section 2 (i) (vi)
(2) (i) (vii)	Particulars of the public participation process that will be conducted during the environmental impact assessment process	Section 2 (i) (vii)
(2) (i) (viii)	A description of the tasks that will be undertaken as part of the environmental impact assessment process	Section 2 (i) (viii)
(2) (i) (x)	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	Section 2 (i) (ix)
(2) (j)	Undertaking under oath or affirmation by the EAP in relation to:	Section 2 (j) Appendix D
(2) (j) (i)	The correctness of the information provided in the report	
(2) (j) (ii)	The inclusion of comments and inputs from stakeholders and interested and affected parties	
(2) (j) (iii)	Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties	

GN R982, App 2 Ref.:	Requirement	Section Ref.:
(2) (k)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment	Section 2 (k)
(2) (l)	Any specific information required by the competent authority	<u>None</u>

Table of Contents

IMPORTANT NOTICE	i
1 Objective of the scoping process	1
2 Contact Person and correspondence address	2
a) Details of.....	2
i. Details of the EAP.....	2
ii. Expertise of the EAP.....	2
b) Description of the property.	3
c) Locality map.....	3
d) Description of the scope of the proposed overall activity.	5
i) Listed and specified activities	5
(ii) Description of the activities to be undertaken	6
e) Policy and Legislative Context.....	10
National Environmental Management Act 107 of 1998.....	10
EIA Regulations, 2014.....	11
Financial Provisioning Regulations, 2015	12
Mineral and Petroleum Resources Development Act 28 of 2002	12
National Environmental Management: Waste Act 59 of 2008 (NEM: WA)	13
National Environmental Management: Integrated Coastal Management Act 24 of 2008	14
Marine Living Resources Act.....	14
National Environmental Management: Protected Areas Act 57 of 2003.....	14
Marine Spatial Planning Framework, 2017	15
Environmental Assessment Process.....	17
Submission of Applications.....	18
f) Need and desirability of the proposed activities	19
g) Period for which the environmental authorisation is required	20
h) Description of the process followed to reach the proposed preferred site.	20
i) Details of the development footprint alternatives considered.....	20
ii) Details of the Public Participation Process Followed	21
iii) Summary of issues raised by I&APs.....	22
iv) The Environmental attributes associated with the sites	25
j) Plan of study for the Environmental Impact Assessment process	53
(i) Description of alternatives to be considered including the option of not going ahead with the activity	53
(ii) Description of the aspects to be assess as part of the environmental assessment process	53
(iii) Description of aspects to be assessed by specialists.....	53
(iv) Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives	56
(v) The proposed method of assessing duration significance.....	56
(vi) The stages at which the competent authority will be consulted	56

(vii)	Particulars of the public participation process with regard to the Impact Assessment process that will be conducted	56
1.	Steps to be taken to notify interested and affected parties.	56
2.	Details of the engagement process to be followed.....	57
3.	Description of the information to be provided to Interested and Affected Parties.	57
(viii)	Description of the tasks that will be undertaken during the environmental impact assessment process	57
(ix)	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.	59
k)	Other Information required by the competent Authority	61
(i)	Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:-	61
l)	Other matters required in terms of sections 24(4)(a) and (b) of the Act.	61
m)	UNDERTAKING REGARDING CORRECTNESS OF INFORMATION	62
n)	UNDERTAKING REGARDING LEVEL OF AGREEMENT	63

List of Tables

Table 1: Listed activities triggered by the project.....	ii
Table 2: Stakeholder Engagement during Scoping	iv
Table 3: Requirements of Regulation 2 of GNR 982	ix
Table 4: Description of the property	3
Table 5: Summary of NEMA Listed Activities being applied for.....	6
Table 6: Description of Bulk Sampling Activities.....	8
Table 7: Project Phases and Requirements	9
Table 8: Listed activities triggered.....	11
Table 9: Applicable legislation and guidelines for the proposed Samara Concession prospecting project....	18
Table 10: Summary of issues raised by Interested and Affected Parties	22
Table 11: Pelagic seabirds common in the southern Benguela region.....	36
Table 12: Breeding resident seabirds present along the West Coast.....	37
Table 13: Cetaceans occurrence off the West Coast of South Africa, their seasonality, likely encounter frequency with proposed exploration activities and IUCN conservation status.....	39
Table 14: Potential impacts of the proposed project without mitigation.....	47
Table 15: Criteria used to determine the consequence of the impact	48
Table 16: Method used to determine the consequence score	48
Table 17: Probability classification	48
Table 18: Impact significance ratings.....	49
Table 19: Impact status and confidence classification.....	49
Table 20: High level mitigation measures for potential impacts identified for the project	51
Table 21: Specialist Terms of Reference	55
Table 22: Stakeholder engagement activities planned during the Impact Assessment Phase	56
Table 23: Potential residual risk post-mitigation	60

List of Figures

Figure 1: S&EIR Process	ii
Figure 2: Locality Map	iii
Figure 3: Locality Map	4
Figure 5: Relationship between goals and principles of the Marine Spatial Planning Framework	16
Figure 6: Oceanographic features along the South African Coast	26
Figure 7: Coastal and offshore benthic habitat types in South Africa	26
Figure 8: Key weather systems of Southern Africa	27
Figure 9: Major circulation features in the Benguela region	28
Figure 10: The South African inshore and offshore bioregions	30
Figure 11: Ecosystem threat status for coastal and offshore benthic habitat types (left), and offshore pelagic habitat types (right)	31
Figure 12: Phytoplankton (left) and zooplankton (right) associated with upwelling cells	32
Figure 13: Major spawning areas in the southern Benguela region	33
Figure 14: Cape fur seal preying on a shoal of pilchards (left) and school of horse mackerel (right)	34
Figure 15: Blue marlin (left) and longfin tuna (right)	35
Figure 16: Leatherback (left) and loggerhead turtles (right)	35
Figure 17: Cape Gannets <i>Morus capensis</i> (left) and African Penguins <i>Spheniscus demersus</i> (right) breed primarily on the offshore Islands	37
Figure 18: Priority areas for protection of benthic and pelagic habitats	42
Figure 19: African undersea cables	45

Acronyms and Abbreviations

BA	Basic Assessment
CITES	Convention on International Trade in Endangered Species
CMS	Convention on Migratory Species
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	National Department of Environmental Affairs
DFFE	Department of Forestry, Fisheries and the Environment
DEA&DP	(Western Cape) Department of Environmental Affairs and Development Planning
DEA: O&C	Department of Environmental Affairs: Oceans and Coasts
DEAT	Department of Environmental Affairs and Tourism
DMR	Department of Mineral Resources
DP	Dynamic Positioning
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMP	Environmental Management Programme
<u>FSR</u>	<u>Final Scoping Report</u>
GDP	Gross Domestic Product
GN	Government Notice
IAP	Interested and Affected Party
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
IRP	Integrated Resources Plan
IUCN	International Union for Conservation of Nature and Natural Resources
km ²	Square kilometres
LN	Listing Notice
MLRA	Marine Living Resources Act 18 of 1998
MPA	Marine Protected Area
MPRDA	Mineral and Petroleum Resources Development Act 28 of 2002
NEM:ICMA	National Environmental Management: Integrated Coastal Management Act 24 of 2008
NEM:PAA	National Environmental Management: Protected Areas Act 57 of 2003
NEMA	National Environmental Management Act 107 of 1998 as amended
NDI	NDI Geological Consulting Services (Pty) Ltd
S&EIR	Scoping and Environmental Impact Reporting
SACW	South Atlantic Central Water
SAMSA	South African Maritime Safety Authority
SANBI	South African National Biodiversity Institute
SDF	Spatial Development Framework
SRK	SRK Consulting (South Africa) (Pty) Ltd
ToR	Terms of Reference

Glossary

Baseline	Information gathered at the beginning of a study which describes the environment prior to development of a project and against which predicted changes (impacts) are measured.
Bathymetry	The measurement of water depths in the oceans, seas and lakes.
Benguela Current	The broad, northward flowing ocean current that forms the eastern portion of the South Atlantic Ocean.
Benthic	Living or occurring on or in the seabed.
Biodiversity	The diversity, or variety, of plants, animals and other living things in a particular area or region. It encompasses habitat diversity, species diversity and genetic diversity
Biota	The plant and animal life of a particular area.
Cartilaginous fish	A fish having a skeleton of cartilage rather than bone; includes the sharks, rays, and chimaeras
Community	Those people who may be impacted upon by the construction and operation of the project. This includes neighbouring landowners, local communities and other occasional users of the area
Consultation	A process for the exchange of views, concerns and proposals about a project through meaningful discussions and the open sharing of information.
Cumulative Impacts	Direct and indirect impacts that act together with current or future potential impacts of other activities or proposed activities in the area/region that affect the same resources and/or receptors.
Demersal	Living or occurring near the bottom of a water body or the water column.
Ecology	The study of the interrelationships of organisms with and within their physical surroundings
Ecosystem	The interconnected assemblage of all living organisms that occupy a given area and the physical environment with which they interact.
Endemic / Endemism	Species unique (native or restricted) to a defined geographic location, i.e. ecological state of a species being unique to a defined geographic location.
Environment	The external circumstances, conditions and objects that affect the existence of an individual, organism or group. These circumstances include biophysical, social, economic, historical and cultural aspects.
Environmental Authorisation	Permission granted by the competent authority for the applicant to undertake listed activities in terms of the NEMA EIA Regulations, 2014.
Environmental Impact Assessment	A process of evaluating the environmental and socio-economic consequences of a proposed course of action or project.
Environmental Impact Assessment Report	The report produced to relay the information gathered and assessments undertaken during the Environmental Impact Assessment.
Environmental Management Programme	A description of the means (the environmental specification) to achieve environmental objectives and targets during all stages of a specific proposed activity.
Epifauna	Animals that live on the surface of the seabed sediments.
Fauna	The collective animals of a particular region, habitat or geological period.
Heritage Resources	Refers to something tangible or intangible, e.g. a building, an area, a ritual, etc. that forms part of a community's cultural legacy or tradition and is passed down from preceding generations and has cultural significance.

Impact	A change to the existing environment, either adverse or beneficial, that is directly or indirectly due to the development of the project and its associated activities.
Independent EAP	An independent person with the appropriate qualifications and experience appointed by the Applicant to manage the Environmental Impact Assessment process on behalf of the Applicant.
Integrated Environmental Management	The practice of incorporating environmental management into all stages of a project's life cycle, namely planning, design, implementation, management and review.
Isobath	An underwater depth contour line.
Macrofauna	Animals that are retained on a 1 mm mesh.
Mitigation measures	Design or management measures that are intended to avoid and / or minimise or enhance an impact, depending on the desired effect. These measures are ideally incorporated into a design at an early stage.
Prospecting	<i>"intentionally searching for any minerals by means of any method which disturbs the surface or sub-surface of the earth, including any portion of the earth that is under the sea or under other water..."</i>
Red Data List	Species of plants and animals that, because of their rarity and/or level of endemism, are included on a Red Data List (usually compiled by the IUCN) which provides an indication of their threat of extinction and recommendations for their protection.
Scoping	A procedure to consult with stakeholders to determine issues and concerns and for determining the extent of and approach to an EIA and EMPR (one of the phases in an EIA and EMPR). This process results in the development of a scope of work for the EIA, EMPR and specialist studies.
Shelf Break	The shelf break is the division between the part of the continental shelf beyond the influence of light (~30 m), and the continental slope. As this break occurs at vastly different depths, it is referred to simply as the shelf break, without an actual depth value being assigned to it. On the West Coast it varies from about 400 m in the Namaqua bioregion to 200 m in the Agulhas bioregion.
Specialist study	A study into a particular aspect of the environment, undertaken by an expert in that discipline.
Stakeholder engagement	The process of notifying and consulting stakeholders about a proposed project, and providing opportunities for input into the EIA process and project design. Also referred to as Public Participation.
Stakeholders	All parties affected by and/or able to influence a project, often those in a position of authority and/or representing others.
Sustainable development	Sustainable development is generally defined as development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. NEMA defines sustainable development as the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.

1 Objective of the scoping process

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

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

SCOPING REPORT

2 Contact Person and correspondence address

a) Details of

i. Details of the EAP

Name of the Practitioner: Ndivhudzannyi Mofokeng (NDI)

Tel No.: 053 842 0687

Fax No. : 086 538 1069

e-mail address: atshidzaho@gmail.com

ii. Expertise of the EAP

1) The qualifications of the EAP

*(With evidence attached as **Appendix A**)*

Ndivhudzannyi Mofokeng have the following qualifications:

- BSc (Hons) Earth Sciences in Mining and Environmental Geology.

Please refer to Appendix A for a copy of the EAP's Qualifications.

2) Summary of the EAP's past experience.

*(Attach the EAP's curriculum vitae as **Appendix B**)*

Ndivhudzannyi holds BSc (Hons) Earth Sciences in Mining and Environmental Geology. She has close to 10 years' experience in the exploration and open cast work in the mining industry. She has proven leadership skills from supervising exploration rigs (Reverse Circulation and percussion drilling). She has proven working experience in field exploration and mapping, borehole logging, borehole sampling, sample preparation for laboratory analysis, handling of GPS, supervisory duties within the field, geological report and progress report writing, including Prospecting Work Programmes and Environmental Management Plans, handling the Department of Mineral Resources (DMR) documents in general. Ndivhudzannyi has as a solid technical background in GIS Arcview software (GSSA Prof Reg), Rockworks, Turbo-Cad and Turbo-Sketch, and Global Mapper 9 Application.

Please refer to **Appendix A** and **Appendix B** for a copy of the EAP's Curriculum Vitae and Professional Registration Certificate, respectively.

b) Description of the property.

Table 4: Description of the property

Farm Name:	Sea Concessions 4C and 5C (Coordinates of the boundary):		
	TEXT	Long	Lat
	A	15° 23' 41.73" E	29° 53' 9.29" S
	B	17° 0' 39.61" E	29° 53' 30.48" S
	C	16° 48' 49.34" E	29° 21' 11.70" S
	D	15° 25' 59.39" E	29° 20' 25.18" S
	E	15° 5' 18.75" E	29° 34' 0.00" S
	F	15° 31' 55.31" E	29° 42' 21.06" S
	G	15° 31' 15.61" E	29° 45' 55.73" S
Application area (Ha)	912 206 ha (Total for both concessions)		
Magisterial district:	Not Applicable		
Distance and direction from nearest town	The eastern boundary of the proposed Offshore concession area is located approximately 14.5 km from both Port Nolloth and Kleinsee, respectively.		
21 digit Surveyor General Code for each farm portion	Not Applicable. The Samara Concession project is located offshore.		

c) Locality map

(nearest town, scale not smaller than 1:250000 attached as **Appendix C**).

Please refer to **Figure 3** and **Appendix C**.

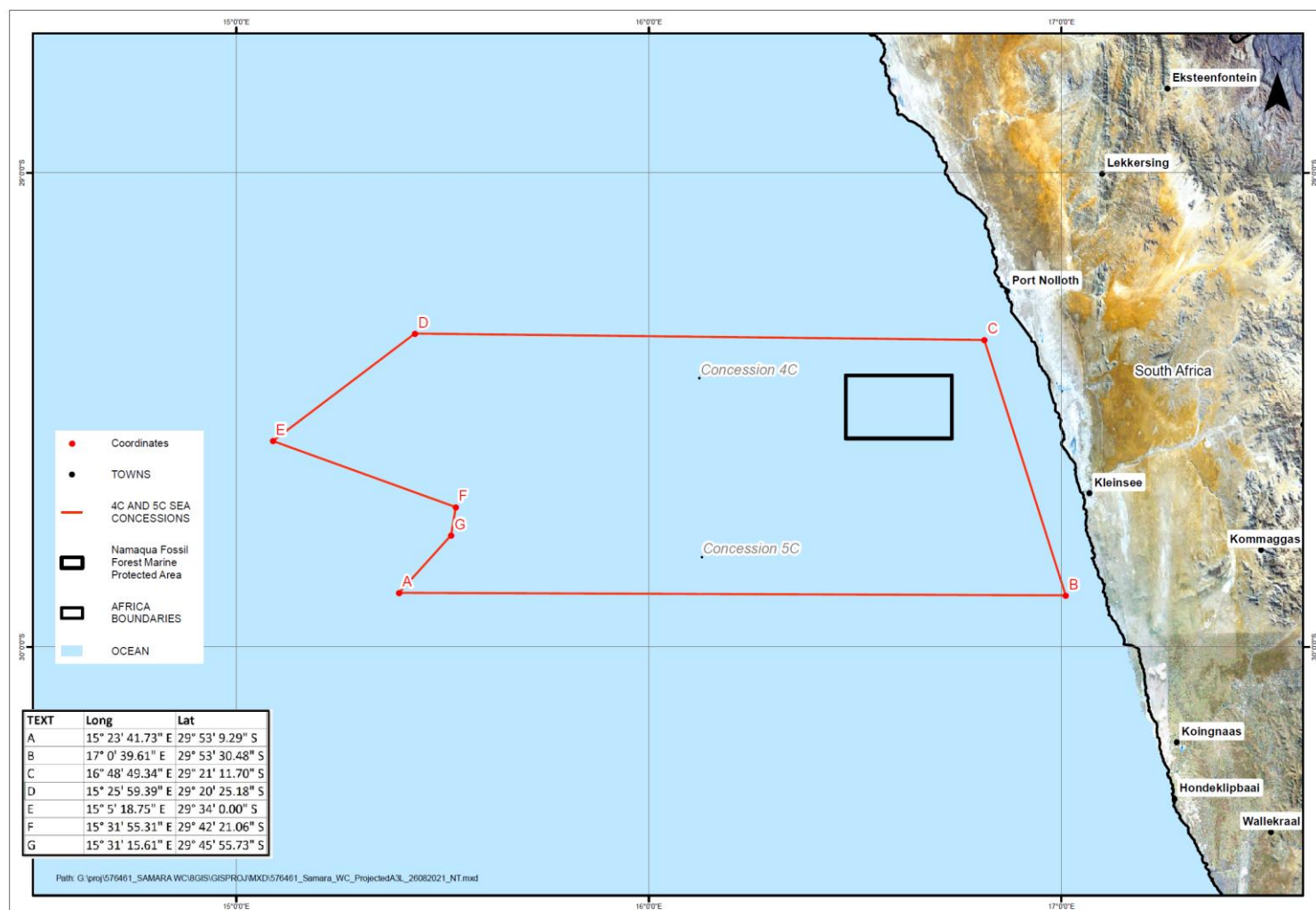


Figure 3: Locality Map

d) Description of the scope of the proposed overall activity.

i) Listed and specified activities

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

Sections 24 and 44 of NEMA make provision for the promulgation of regulations that identify activities which may not commence without an EA issued by the competent authority (DMR). In this context, the EIA Regulations, 2014 (GN R982 of 2014), promulgated in terms of NEMA, govern the process, methodologies and requirements for the undertaking of EIAs in support of EA applications. Listing Notices 1-3, in terms of NEMA, list activities that require EA ("NEMA listed activities").

GN R982 of the EIA Regulations lays out two alternative authorisation processes. Depending on the type of activity that is proposed, either a Basic Assessment (BA) process or an S&EIR process is required to obtain EA. Listing Notice 1² lists activities that require a BA process, while Listing Notice 2³ lists activities that require S&EIR. Listing Notice 3⁴ lists activities in certain sensitive geographic areas that require a BA process.

The regulations for both processes – BA and S&EIR - stipulate that:

- Public participation must be undertaken as part of the assessment process;
- The assessment must be conducted by an independent EAP;
- The relevant authorities must respond to applications and submissions within stipulated time frames;
- Decisions taken by the authorities can be appealed by the proponent or any other Interested and Affected Party (IAP); and
- A draft Environmental Management Programme (EMP) must be compiled and released for public comment.

GN R982 (Appendix 1-5) sets out the procedures to be followed and content of reports compiled during the BA and S&EIR processes.

The NEMA National Appeal Regulations⁵ make provision for appeal against any decision issued by the relevant authorities. In terms of the Regulations, an appeal must be lodged with the relevant authority in writing within 20 days of the date on which notification of the decision (EA) was sent to the applicant or IAP (as applicable). The applicant, the decision-maker, IAPs and organ of state must submit their responding statement, if any, to the appeal authority and the appellant within 20 days from the date of receipt of the appeal submission.

The proposed prospecting activity triggers activities listed in NEMA GN R983: Listing Notice 1 and NEMA GN R984 (**Table 5**):

- Listing Notice 1 (GN R983 of 2014) Item 19A : "*The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from the sea*";
- Listing Notice 1 (GN R983 of 2014) Item 20: "*Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the MPRDA*";

² GN R983 of 2014, as amended by GN 327 of 2017

³ GN R984 of 2014, as amended by GN 325 of 2017

⁴ GN R985 of 2014, as amended by GN 324 of 2017

⁵ GN R993 of 2014, as amended by GN R205 of 2015

- Listing Notice 1 (GN R983 of 2014) Item 22: “*The decommissioning of any activity requiring a prospecting right*”; and
- Listing Notice 2 (GN R984 of 2014) Item 19: “*The removal and disposal of minerals contemplated in terms of section 20 of the MPRDA including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource*”.

Table 5: Summary of NEMA Listed Activities being applied for⁶

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 E.g. for mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)
Dredging of sea material as part of the prospecting activities.	912 206 ha	X	GNR 983 (19A)
Prospecting Right Application in terms of Section 16 and Regulation 7(1) of the Mineral and Petroleum Resources Development Act	912 206 ha	X	GNR 983 (20)
Decommissioning of the prospecting activities.	912 206 ha	X	GNR 983 (22)
Bulk sampling as part of the prospecting activities.	912 206 ha	X	GNR 984 (19)

(ii) Description of the activities to be undertaken

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

The application is for a prospecting right in respect of diamond mining. Prospecting is the first stage in the potential utilisation of a mineral deposit by searching for ores or other valuable minerals (diamond deposits).

To prospect for diamonds, Samara Mining (Pty) Ltd (Samara) (applicant) intends to use both invasive and non-invasive methods. The non-invasive methods comprise desktop studies, geophysical surveys, 3D geological model and resource estimation as well as analytical desktop studies. Invasive method will comprise bulk (trench) sampling.

The project aims to gather sufficient data on the proposed prospecting right concession to estimate potential diamond deposits within each of the Sea Concession areas to ascertain whether potential future mining is viable.

⁶ It is noted that the EA Application was submitted prior to the Amendments of the EIA Regulations, and the associated Listing Notices 1,2 and 3 promulgated in GN R517 on 11 May 2021.

The prospecting activities will follow a standard phased approach which will be undertaken on a scheduled timeline, with some activities being run concurrently, while others will follow sequentially.

A summary of the project phases and requirements is provided in Table 7 and below:

Phase 1: Desktop Studies (Non-invasive)

Available historic prospecting data from previous exploration will be scrutinised to compile a working plan. This is data such as historical geological information, geophysical surveys and sampling which will be analysed and compiled.

The non-invasive Desktop Studies will take approximately 6 months to finalise.

Phase 2: Geophysical Surveying:

Geophysical surveys will be conducted to identify geological features where bulk exploration sampling will be undertaken. The equipment for the survey will be deployed from a vessel suited to the survey depths and methods.

Additional survey data acquisition will supplement existing geophysical data coverage. Once the geophysical data has been processed, interpreted and worked-up with additional sample site identification, Phase 3 of the initial phase of sampling will proceed.

Geophysical tools available for reconnaissance surveys include:

Swath bathymetry:

The swath bathymetry system produces a digital terrain model of the seafloor over a given distance to either side of the boat.

Shallow (2 to 10 KHz) and medium penetration (0.5 to 2KHz) “Chirp” seismic systems:

Chirp seismic systems generate profiles beneath the seafloor to give a cross section view of the sediment layers.

100KHz side scan sonar:

Side scan sonar systems produce acoustic intensity images of the seafloor and are used to map the different sediment textures of the seafloor.

Magnetometer:

Magnetometers measure local variations in the intensity of the Earth's magnetic field, which are caused by differences in composition of the sediment layers beneath the seafloor and help identify where deposits lie in the seabed.

Geophysical surveying will be undertaken over a period of 6 months.

Phase 3: Exploration Sampling (Invasive):

Where geological features of interest (showing potential diamond resources) have been identified in Phase 1 and Phase 2, follow up surveys and sampling will be undertaken in the areas of interest. The sampling will entail the extraction of diamonds from the seabed using fit-for purpose vessels that are designed for the extraction of diamonds from the seabed. The vessel will be equipped with a crawler, fitted with highly accurate acoustic seabed navigation and imaging systems, that will dredge materials from the seabed through an anterior suction system. When lowered to the seabed, it is controlled remotely from the surface support vessel through power and signalling umbilical cables. The seabed is loosened by water jets in the crawler's suction system. Sorting bars filter out oversize boulders. Sampled sediments are pumped to surface for shipboard processing.

It is anticipated that up to 50 trenches, with a length of 200 m and width of 20 m wide will be excavated within the Offshore Concession Areas. The depth of the trenches may exceed 1.5 m.

Table 6 summarises the description of the bulk sampling activities.

Table 6: Description of Bulk Sampling Activities

ACTIVITY		DETAILS		
Number of pits/trenches planned		Fifty Pits		
Dimensions of pits/trenches, per pit/trench	Number of pits/trenches	Length	Breadth	Depth
	50	200m	20m	>1.5m
Locality		Exact location of pits will be determined on completion of phase 1.		
Volume Overburden (Waste)		180 000 m ³ on each excavation		
Volume Ore		120 000 m ³ on each excavation		
Density Overburden		Unknown-to be determined on completion of phase 2-3.		
Density Ore		Unknown-to be determined on completion of phase 2-3.		
Phase(s) when bulk sampling will be required		Phase 2-3		
Timeframe(s)		3 years		

Phase 4: Feasibility Study (Non-invasive) & Geological Modelling:

Geological interpretation and exploration data will be subject to statistical and geostatistical analyses over a period of 3 months. A block model of the resource will be completed and an estimated diamond grade and diamond size will be assigned to a block. Each block will then be assigned a resource class.

Feasibility studies to define the mineral resource estimation and determine of the feasibility of the project will take approximately 9 months to complete.

Analysis of all the information received from all prospecting activities will make up this phase. The economic feasibility studies, required to determine the economic and metallurgical viability of the project will be conducted by analysing the results of the data gathered from the prospecting programme.

Prospecting results will guide the design aspects for potential future mining, depending on the class of the resource. During the third and final year all data will be compiled, interpreted, summarized and evaluated in a final report. Several additional studies will need to be completed to inform a decision whether to proceed with development.

Table 7: Project Phases and Requirements

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-Invasive	Contractors	1 month	Prospecting ready	Month 12	Mining Engineer
	Setup					
	Non-Invasive	Qualified geologist	5 months	Geological Report		Geologist
	Desktop Study including a Literature Survey of remotely sensed data and other available historic data					
2	Geophysical Survey	Qualified geophysicists	6 months	Detailed progress report and a geological map.	Geologist	
3	Invasive	Geologist & Metallurgist Qualified Contractors Geologist	36 months	Detailed Geological and Grade Resource Models, Mineral Resource Estimates to Indicated level of confidence	Month 48	Senior geologist Senior metallurgist
	Bulk sampling					
4	Non-Invasive	Multidisciplinary team of consultants	3 months	Geological model and resource estimate	Month 60	Resource Geologist Principal Geologist
	3D geological model and resource estimation					
	Feasibility study		9 months	An iterative appraisal of the feasibility of the project		

Rehabilitation

Direct impact on the seabed results in the localised removal of the seabed habitat where fine sediment surface layers are replaced with coarse sediments. After the primary screening process, the majority of the material pumped to surface is replaced directly back to the sea. Thus, coarse and to some extent finer tailings are discharged directly back into the disturbed areas.

e) Policy and Legislative Context

There are a number of regulatory requirements at local, provincial and national level with which the project must conform. Some of the key environmental legal requirements include the following:

- National Environmental Management Act 107 of 1998 (NEMA);
- EIA Regulations, 2014, promulgated in terms of NEMA;
- Financial Provisioning Regulations, 2015, promulgated in terms of NEMA;
- Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA) and MPRDA Regulations, 2004;
- National Environmental Management: Integrated Coastal Management Act 24 of 2008 (NEM:ICMA);
- Marine Living Resources Act 18 of 1998 (MLRA); and
- National Environmental Management: Protected Areas Act 57 of 2003 (NEM:PAA).

A brief summary of the relevant Acts and Regulations that are applicable to this study is provided below. Note that other legislative requirements may also pertain to the project. As such, the summary provided below is not intended to be definitive or exhaustive, and serves only to highlight key environmental legislation and obligations.

National Environmental Management Act 107 of 1998

NEMA establishes a set of principles which all authorities have to consider when exercising their powers. These include the following:

- Development must be sustainable;
- Pollution must be avoided or minimised and remedied;
- Waste must be avoided or minimised, reused or recycled;
- Negative impacts must be minimised; and
- Responsibility for the environmental consequences of a policy, project, product or service applies throughout its life cycle.

Section 28(1) 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 degradation/pollution cannot be prevented, then appropriate measures must be taken to minimise or rectify such pollution. 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; and
- Remedying the effects of the pollution.

Legal requirements for this project:

Samara Mining (Pty) Ltd (the proponent) has a responsibility to ensure that the proposed activities and the S&EIR process conform to the principles of NEMA. The proponent is obliged to take actions to

prevent pollution or degradation of the environment in terms of Section 28 of NEMA, and to ensure that the environmental impacts associated with the project (of which none are anticipated) are considered, and mitigated where possible.

EIA Regulations, 2014

Sections 24 and 44 of NEMA make provision for the promulgation of regulations that identify activities which may not commence without an EA issued by the competent authority (DMR). In this context, the EIA Regulations, 2014 (GN R982 of 2014), promulgated in terms of NEMA, govern the process, methodologies and requirements for the undertaking of EIAs in support of EA applications. Listing Notices 1-3, in terms of NEMA, list activities that require EA (“NEMA listed activities”).

GN R982 of the EIA Regulations lays out two alternative authorisation processes. Depending on the type of activity that is proposed, either a Basic Assessment (BA) process or an S&EIR process is required to obtain EA. Listing Notice 1⁷ lists activities that require a BA process, while Listing Notice 2⁸ lists activities that require S&EIR. Listing Notice 3⁹ lists activities in certain sensitive geographic areas that require a BA process.

The regulations for both processes – BA and S&EIR - stipulate that:

- Public participation must be undertaken as part of the assessment process;
- The assessment must be conducted by an independent EAP;
- The relevant authorities must respond to applications and submissions within stipulated time frames;
- Decisions taken by the authorities can be appealed by the proponent or any other Interested and Affected Party (IAP); and
- A draft Environmental Management Programme (EMP) must be compiled and released for public comment.

GN R982 (Appendix 1-5) sets out the procedures to be followed and content of reports compiled during the BA and S&EIR processes.

The NEMA National Appeal Regulations¹⁰ make provision for appeal against any decision issued by the relevant authorities. In terms of the Regulations, an appeal must be lodged with the relevant authority in writing within 20 days of the date on which notification of the decision (EA) was sent to the applicant or IAP (as applicable). The applicant, the decision-maker, IAPs and organ of state must submit their responding statement, if any, to the appeal authority and the appellant within 20 days from the date of receipt of the appeal submission.

The proposed project includes listed activities as summarised in **Table 8**.

Table 8: Listed activities triggered

Government Notice:	Listing notices	Listed activity as per the wording in the listing notices:
GNR 983, December 2014	19A	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from the sea.
GNR 983, December 2014	20	Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the MPRDA.
GNR 983, December 2014	22	The decommissioning of any activity requiring a prospecting right.

⁷ GN R983 of 2014, as amended by GN 327 of 2017

⁸ GN R984 of 2014, as amended by GN 325 of 2017

⁹ GN R985 of 2014, as amended by GN 324 of 2017

¹⁰ GN R993 of 2014, as amended by GN R205 of 2015

GNR 984, 4 December 2014	19	The removal and disposal of minerals contemplated in terms of section 20 of the MPRDA including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource.
-----------------------------	----	--

Legal requirements for this project:

The proponent is obliged to apply for EA for the listed activity and to undertake a S&EIR process in support of the EA application, in accordance with the procedure stipulated in GN R982 under NEMA.

National Web Based Environmental Screening Tool

In terms of Regulation 16(1)(b)(v) of the NEMA EIA Regulation, 2014, an application for EA must include “the report generated by the national web based environmental screening tool”. On 20 March 2020, notice was given that the submission of such a report is compulsory for all applications submitted after 4 October 2019 (GN R 960 of 2019).

The national web based screening tool is based on broad scale national environmental sensitivity data and identifies specialist studies that may be required for the EIA. It is the responsibility of the EAP to confirm whether these specialist studies will be conducted or provide a motivation as to why the specialist studies will not be conducted as part of the EIA process.

Legal requirements for this project:

The screening tool report has informed the identification of specialist studies required for the EIA.

Financial Provisioning Regulations, 2015

Sections 44 (aE), 44 (aF), 44 (aG) and 44 (aH) of NEMA make provision for the promulgation of regulations relating to environmental liability and financial provision. In this context, the Financial Provisioning Regulations, 2015 (GN R1147 of 2015), promulgated in terms of NEMA, govern the financial provision for the costs associated with undertaking management, rehabilitation and remediation of environmental impacts of prospecting, exploration, mining and production operations through the lifespan of such operations and latent or residual environmental impacts.

The regulations define:

- The method for determining financial provision for annual rehabilitation, final rehabilitation and the remediation of latent environmental impacts;
- Financial vehicles available for financial provision;
- The requirements for the review, assessment and adjustment of financial provision;
- The responsibilities of the holder of a right or a permit;
- Powers of the Minister; and
- Requirements for care and maintenance.

Legal requirements for this project

Samara Mining will be required to provide financial provision for the proposed prospecting activities. Contracted vessels will be required to have insurance against operational risks, including cover against damage to property, pollution damage/clean-up operations, costs of removing wrecks in the event of sinking etc.

Mineral and Petroleum Resources Development Act 28 of 2002

The MPRDA makes provision for equitable access to and sustainable development of South Africa’s mineral and petroleum resources and aims to *inter alia* provide for security of tenure in respect of prospecting, exploration, mining and production operations. The fundamental principles of the MPRDA are:

- Mineral and petroleum resources are non-renewable;

- Mineral and petroleum resources belong to the nation and the State is the custodian;
- Protection of the environment for present and future generations to ensure sustainable development of the resources by promoting economic and social development;
- Promotion of local and rural development of communities affected by mining;
- Reformation of the industry to bring about equitable access to the resources and eradicating discriminatory practices; and
- Guaranteed security of tenure.

In terms of the MPRDA, a Prospecting Right must be obtained prior to the commencement of any prospecting activities. A requirement for obtaining a Prospecting Right is that an applicant must submit an application in terms to Section 16 (1) of the MPRDA to the Regional Manager, who must accept the application within 14 days if, inter alia, no other person holds a Prospecting Right, Mining Right, Mining Permit or Retention Permit for the same mineral and land. If the application for a Prospecting Right is accepted, the Regional Manager must request that the applicant comply with Chapter 5 of NEMA with regards to consultation and reporting.

Legal requirements for this project

In support of the Prospecting Right application, Samara Mining is required to undertake an EIA and to obtain an EA in compliance with the requirements of NEMA and the EIA Regulations, 2014.

National Environmental Management: Waste Act 59 of 2008 (NEM: WA)

The National Environmental Management: Waste Act 59 of 2008 (NEM: WA) was implemented on 1 July 2009 and Section 20 of the Environment Conservation Act (Act No. 73 of 1989), under which waste management was previously governed, was repealed.

The NEM: WA reforms 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; and to provide for:

- National norms and standards for regulating the management of waste by all spheres of government;
- Specific waste management measures;
- The licensing and control of waste management activities;
- The remediation of contaminated land; to provide for the national waste information system; and
- Compliance and enforcement.

In terms of the NEM:WA, all waste management activities must be licensed. According to Section 44 of the Act, the licensing procedure must be integrated with an EIA process in accordance with the Regulations GN R982 published in terms of the NEMA. GN R718 listed the waste management activities that require licensing. On 29 November 2013, GN R718 was repealed and replaced by a new list of waste activities under GN R921 and amended in July 2015 by GN R633. A distinction is made between Category A waste management activities, which require a basic assessment, and Category B activities, which require a full EIA (scoping followed by impact assessment), and Category C waste management activities which do not require a waste management licence but compliance with relevant requirements or standards.

Legal requirements for this project

NEM: WA is not applicable to offshore activities and therefore no Waste Management Licence in terms of NEM: WA will be required. Waste aspects will be managed in terms of the requirements of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78).

National Environmental Management: Integrated Coastal Management Act 24 of 2008

NEM: ICMA provides for the integrated management of the coastal zone, including the promotion of social equity and best economic use, while protecting the coastal environment.

Chapter 8 of the Act establishes an integrated system for regulating the disposal of effluent and waste into the sea. Section 70 prohibits incineration at sea and restricts dumping at sea unless done so in terms of a permit and in accordance with South Africa's obligations under international law.

Legal requirements for this project:

As Samara Mining does not intend on disposing effluent and waste into the sea, no authorisations are required in terms of NEM:ICMA.

Marine Living Resources Act

The Marine Living Resources Act 18 of 1998 (MLRA) governs Marine Protected Areas (MPAs) and states in section 43 that:

(2) No person shall in any marine protected area, without permission in terms of subsection (3)—

- (b) take or destroy any fauna and flora other than fish;*
- (c) dredge, extract sand or gravel, discharge or deposit waste or any other polluting matter, or in any way disturb, alter or destroy the natural environment;*
- (e) carry on any activity which may adversely impact on the ecosystems of that area.*

Legal requirements for this project:

Although there are a number of declared MPAs off the West Coast, Samara Mining does not intend prospecting in these areas and consequently there will be no impact on these MPAs.

National Environmental Management: Protected Areas Act 57 of 2003

The protection and management of South Africa's protected areas are controlled by the NEM:PAA. The Act provides for:

- Declaration of nature reserves and determination of the type of reserve declared;
- Declaration of MPAs;
- Cooperative governance in the declaration and management of nature reserves;
- A system of protected areas to manage and conserve biodiversity; and
- The utilization and participation of local communities in the management of protected areas.

According to Section 14 of NEM:PAA, an MPA declared under the MLRA, and which existed when the NEM:PAA Amendment Act, 2014 took effect, must be regarded as an MPA declared under Section 22A of the NEM:PAA.

Legal requirements for this project:

Although there are a number of declared MPAs off the West Coast, Samara Mining does not intend prospecting in these areas and consequently there will be no impact in or near these MPAs.

PLANNING POLICY FRAMEWORK

Marine Spatial Planning Framework, 2017

The national Department of Forestry and Fisheries and Environment (DFFE) (formerly known as Department of Environmental Affairs (DEA)) implemented the Marine Spatial Planning Framework in May 2017.

The framework aims to provide high-level direction for Marine Spatial Planning in the context of South African legislation and policies as well as existing planning regimes. It aims to guide the national regulatory authorities as the entities responsible for preparation of Marine Area Plans, intended to enable the sustainable development of South Africa's ocean territory. Marine Spatial Planning aims to promote a culture of good ocean governance and:

- Facilitate the unlocking of the ocean economy and sustainable ocean economic development;
- Enhance the achievement of societal benefits and strengthen the level of society's interaction with the ocean;
- Promote a healthy marine environment and the sustainable use of marine resources; and
- Contribute to good ocean governance.

The nine principles that will guide Marine Spatial Planning are (*abridged*):

1. *Sustainable development*: Economic development that is socially and environmentally sustainable and ensures that special consideration is given to ensuring long-term provision of ocean services;
2. *Spatial efficiency*: Promote the optimal use of marine space in as coordinated a manner as possible. It also requires that decision-making procedures are designed to minimise negative financial, economic, social or environmental impacts of alternative uses of marine space;
3. *Collaboration and responsible ocean governance*: Horizontal and vertical cooperation and integration within government as well as good administration will lead to stronger and more complementary decisions and actions;
4. *Justice, equity and transformation*: South Africa's ocean territory and its resources are held in trust by the state. Marine space should be planned and managed as part of the public domain in a manner that addresses the injustices of the past through required transformation;
5. *Ecosystem and earth system approach*: Ecosystems are dynamic, changing and sometimes poorly understood, and a primary focus lies on maintaining and, where feasible, restoring ecosystem structure and functioning;
6. *Precautionary approach*: If a decision could cause severe or irreversible harm to society or the environment, the burden of proof falls on those who advocate taking the action. The costs of potential pollution or damage should be paid by the party responsible for the disturbance;
7. *Adaptive management*: This principle recognises that knowledge of ecosystem functions is deficient and subject to ongoing time and evidence-based research. It requires that planning processes be iterative, respond to the best available scientific knowledge and flexible to provide for adaptive planning and use of South Africa's ocean territory. The principle further requires the periodic monitoring and evaluation of the performance of management actions and ecosystem response;

8. *Coherent planning and management*: This principle recognises that marine spatial planning in South African ocean space may comprehend existing and emerging activities that have enhanced competition in the ocean space. The decision making process should take into account the degree of commonality and compatibility of activities in any area or space in the marine environment; and
9. *Use of best available science and information*: The use of best available science and information serves to promote all aspects required for marine spatial planning.

The Framework also contains four Spatial Planning Goals:

- *Goal 1: Unlocking the ocean economy* to stimulate the sustainable economic growth of South Africa's marine sectors to increase the ocean contribution to the national GDP, create jobs, and, ultimately, eradicate poverty through compatible uses and efficient use of resources;
- *Goal 2: Engaging with the ocean* to strengthen marine identity and increase awareness of the value, opportunities and societal benefits of South Africa's ocean territory;
- *Goal 3: Ensuring healthy marine ecosystems* by managing living and non-living resources in a harmonious manner by identifying ecologically and biologically important areas and integrating biodiversity objectives into decision-making; and
- *Goal 4: Contributing to good ocean governance* through collaborative approach between organs of state relating to ocean matters and relations with non-state organisations and communities.

The relationship between goals and principles of the Marine Spatial Planning Framework is shown in **Figure 4**.

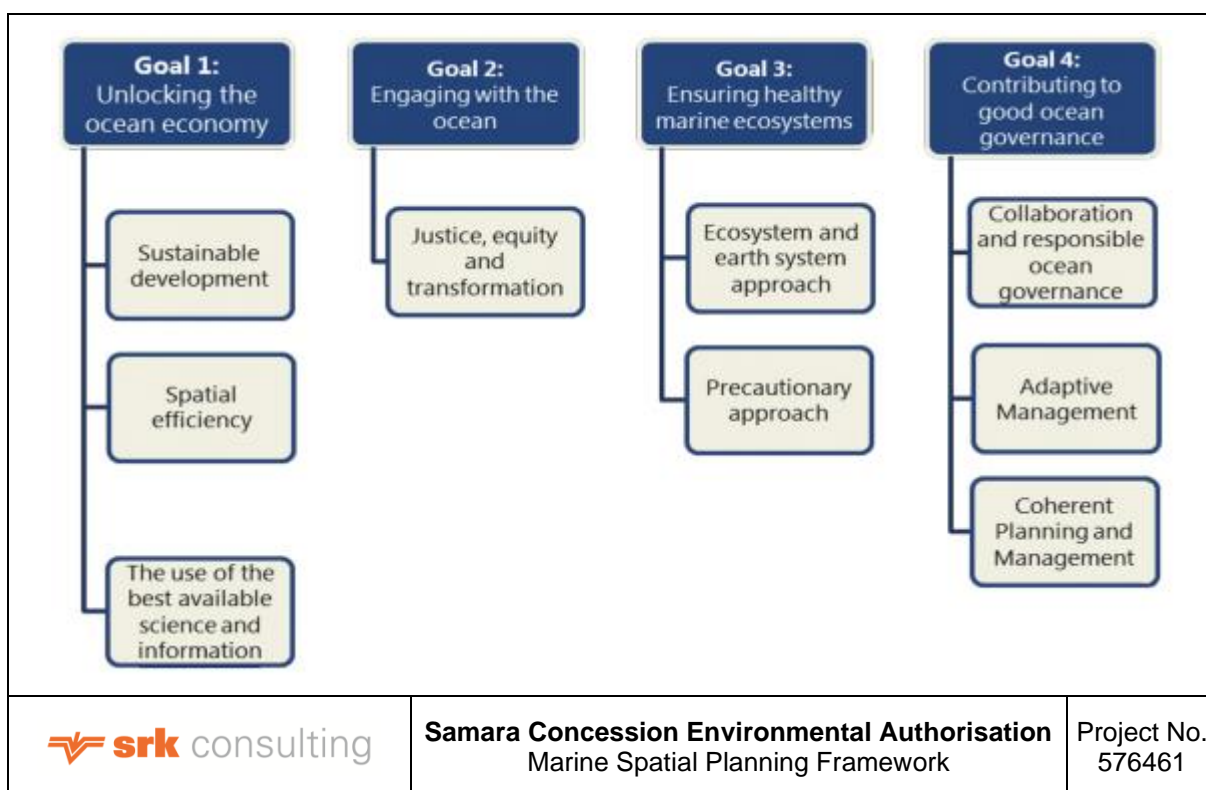


Figure 4: Relationship between goals and principles of the Marine Spatial Planning Framework

Source: DEA, 2017

The Framework also makes reference to the diamond mining along the South African West Coast.

Environmental Assessment Process

The general approach to this study is guided by the principles contained in Section 2 of NEMA and those of Integrated Environmental Management (IEM).

NEMA lists a number of principles that apply to the actions of organs of state and that also serve as reference for the interpretation of environmental legislation and administration of environmental processes. The principles most relevant to environmental assessment processes and projects for which authorisation is required are summarised below.

Principles relevant to the EIA process:

- Adopt a risk-averse and cautious approach;
- Anticipate and prevent or minimise negative impacts;
- Pursue integrated environmental management;
- Involve stakeholders in the process; and
- Consider the social, economic and environmental impacts of activities.

Principles relevant to the project:

- Place people and their needs at the forefront of concern and serve their needs equitably;
- Ensure development is sustainable, minimises disturbance of ecosystems and landscapes, pollution and waste, achieves responsible use of non-renewable resources and sustainable exploitation of renewable resources;
- Assume responsibility for project impacts throughout its life cycle; and
- Polluter bears remediation costs.

This S&EIR process complies with these principles through its adherence to the EIA Regulations, 2014, and associated guidelines, which set out clear requirements for, *inter alia*, impact assessment and stakeholder involvement (see below), and through the assessment of impacts and identification of mitigation measures during the Impact Assessment Phase (which may be superfluous for this solely desktop project).

In accordance with the IEM Information Series (DEAT, 2004), an open, transparent approach, which encourages accountable decision-making, has been adopted.

The underpinning principles of IEM require:

- Informed decision making;
- Accountability for information on which decisions are made;
- A broad interpretation of the term “environment”;
- An open participatory approach in the planning of proposals;
- Consultation with interested and affected parties;
- Due consideration of alternatives;
- An attempt to mitigate negative impacts and enhance positive impacts of proposals;
- An attempt to ensure that the social costs of development proposals are outweighed by the social benefits;
- Democratic regard for individual rights and obligations;
- Compliance with these principles during all stages of the planning, implementation and decommissioning of proposals; and
- The opportunity for public and specialist input in the decision-making process.

The study will also be guided by the requirements of the EIA Regulations, 2014, which are more specific in their focus and define the detailed approach to the S&EIR process, as well as relevant guidelines published by the DEFF and, in the absence of guidelines published by the DMR, the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), including:

- DEA’s Draft Companion to Environmental Impact Assessment Regulations of 2010 (DEA, 2010);
- DEA’s Guideline on Need and Desirability (DEA, 2017); and
- DEA&DP’s EIA Guideline and Information Document Series (DEA&DP, 2013), which includes guidelines on Generic Terms of Reference (ToR) for EAPs and Project Schedules, Public Participation, Alternatives, Need and Desirability, Exemption Applications and Appeals, an information.

Submission of Applications

Various environmental authorisations, permits and/or licences are required before the proposed project may proceed. Some application forms must be submitted at the outset of the S&EIR process (e.g. the Prospecting Right application and EA application). The required authorisations and their status are listed in **Table 9**.

Table 9: Applicable legislation and guidelines for the proposed Samara Concession prospecting project.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED
<i>(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</i>	

are to be considered in the assessment process	
Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA)	Prospecting Right application for bulk sampling submitted to the DMR by Samara Mining.
National Environmental Management Act 107 of 1998 (NEMA)	Application was submitted to the DMR on 8 February 2021 in compliance with Section 16 of the EIA Regulations, 2014.

f) Need and desirability of the proposed activities

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

The mining industry, including that of diamond mining is of great importance to the South African economy. The discovery of diamonds in South Africa played a pivotal role in the history of diamonds world-wide. South Africa continues to be one of the major producers of diamonds world-wide.

According to the Minerals Council of South Africa (2021)¹¹, the diamond mining industry employs over 16 000 people, paying its employees some R5 billion in salaries and wages in 2018. Diamond mining has also provided workers from rural communities, employment opportunities which in turn results in the transfer of funds back to these areas. In 2018, royalties paid amounted to R353 million. An estimated 55% of diamonds are exported. Diamond export earnings have a positive impact on the balance of payments, foreign reserves, monetary policy and on the levels of business activities in the country. Diamonds are used in other South African industries including jewellery making, and cutting and grinding tools. The industry further purchases goods and services, i.e. electricity which stimulates industrial production and the provision of services.

The definition of prospecting in terms of the MPRDA states: “*intentionally searching for any minerals by means of any method which disturbs the surface or sub-surface of the earth, including any portion of the earth that is under the sea or under other water...*”. Prospecting is the physical search for minerals, fossils, precious metals or mineral specimens, which allows a company to survey or investigate an area of land for the purpose of identifying an actual or probable mineral deposit, before investments are made into the mining activities.

A vast resource of gem-quality diamonds exists off the West Coast of South Africa. In order to ascertain the above and determine the nature, location and extent of the diamond reserves within the proposed prospecting area, it will be necessary that prospecting be undertaken. The prospecting will also determine if there are any features that may have an impact on (restrict) the economic extraction of the diamonds.

Should diamonds be found in the project area, subject to acquisition of requisite approvals, Samara Mining will be able to mine the available reserves. This will result in job creation and boost local businesses.

These benefits must be offset against the costs of the project, including the impacts to the environment. Further to the above, it has been determined that the prospecting project activities are aligned with the National Framework for Marine Spatial Planning (2017).

¹¹ <https://www.miningforschools.co.za/lets-explore/diamond/why-diamond-mining-matters>

g) Period for which the environmental authorisation is required

The prospecting right has been applied for a period of five (5) years. The Environmental Authorisation should therefore allow for 5 year of prospecting.

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

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

Section 24 (4)(b)(i) of NEMA and Appendix 2 Section 2 (h)(i) of the EIA Regulations, 2014, require that all S&EIR processes must identify and describe alternatives to the proposed activity that are feasible and reasonable. Different types or categories of alternatives can be identified, e.g. location alternatives, type of activity, design or layout alternatives, technology alternatives and operational alternatives. The 'No Go' or 'No Project' alternative must also be considered.

The proposed project site is preferred due to the history of rich diamond deposits in the area. The invasive prospecting phase will be dependent on the results of the preceding phase. The location and extent of the bulk sampling cannot be determined at this stage, therefore mapping of the specific prospecting activity site could not be undertaken at this stage. For the purposes of this report, the overall prospecting site is presented in **Figure 3**.

i) Details of the development footprint alternatives considered.

Not all categories of alternatives are applicable to all projects. Samara mining proposes to analyse existing data available for the Block using recognised desktop analyses techniques and geophysical surveys to determine the areas where bulk sampling will be undertaken. It is neither feasible nor possible to meaningfully identify exploration development footprint alternatives.

*With reference to the site plan provided as **Appendix C** and the location of the individual activities on site, provide details of the alternatives considered with respect to:*

(a) the property on which or location where it is proposed to undertake the activity:

As mentioned previously, the proposed project site is preferred due to the history of rich diamond deposits in the area. The invasive prospecting phase will be dependent on the results of the preceding phase. The location and extent of the bulk sampling cannot be determined at this stage, therefore mapping of the specific prospecting activity site could not be undertaken at this stage. For the purposes of this report, the overall prospecting site is presented in **Figure 3** and **Appendix C**.

(b) the type of activity to be undertaken:

The application is for prospecting rights and no alternatives were considered.

(c) the design or layout of the activity:

The location of the infrastructure will be determined based on the location of the prospecting activities, which will only be determined during Phase 1 of the Prospecting Works Programme, as well as the presence of sensitive environmental attributes such as sites of archaeological and palaeontological importance. All infrastructure will be temporary and/or mobile (Refer to Section d (ii) of this report.

(d) the technology to be used in the activity:

The proposed technologies have been chosen based on long term proven success in diamond prospecting.

(e) the operational aspects of the activity:

Given the nature of the geophysical surveys and bulk sampling technologies, alternative physical prospecting technologies are not expected to have any meaningful implications for environmental impacts.

(f) The option of not implementing the activity:

The option of not implementing the activity will result in a loss of valuable information regarding the mineral status (diamonds) on the affected areas. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to exploit the reserves will be forgone.

ii) Details of the Public Participation Process Followed

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

The Public Participation Process (PPP) was conducted in terms of Chapter 6 of the National Environmental Management Act 107 of 1998 (NEMA). Please also refer to Appendix D for the Public Participation Report and other supporting documentation.

iii) Summary of issues raised by I&APs

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

Please refer to Annexure D of the Stakeholder Engagement Report (SER) attached as **Appendix D** of the Draft Scoping Report. Comments will be updated in the Final Scoping Report.

Table 10: Summary of issues raised by Interested and Affected Parties

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

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					
Communities					
Dept. Land Affairs					
Traditional Leaders					
Dept. Environmental Affairs					
Other Competent Authorities affected					
OTHER AFFECTED PARTIES					
INTERESTED PARTIES					

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.

iv) The Environmental attributes associated with the sites

(1) Baseline Environment

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

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

The following chapter presents an overview of the biophysical and socio-economic environment in which the Offshore concession areas are located, to understand the general sensitivity of and pressures on the environment.

The region has previously been studied to some extent and information is recorded in various sources. Consequently, this baseline description of the affected environment is based on literature review.

Geographical

The project is located in Offshore concession areas 4C and 5C (**Figure 3**), which are offshore areas located approximately 10 km seaward of the West Coast of South Africa. The total Prospecting Right area is approximately 912 206 hectares. The application area is approximately 14.5 km from both Port Nolloth and from Kleinsee, respectively. The western boundary of the Prospecting Right area is located between approximately 140 to 180 km offshore.

It is noted that the Prospecting Right excludes the Namaqua Fossil Forest Marine Protected Area, located within the Offshore concession areas.

Marine Environment

The study area is located in the central subregion of the Benguela region¹² dominated by the cold Benguela Current, but also influenced by intrusions of warm-water eddies of the Agulhas Current (**Figure 5**).

The continental shelf along the West Coast maintains a general north-northwest trend. It is narrowest between Cape Columbine and Cape Point (40 km), widening to the north of Cape Columbine reaching its widest off the Orange River (180 km), and widening south of Cape Point due to the presence of the Agulhas Bank.

The inner shelf along the West Coast is underlain by Precambrian bedrock (Pre-Mesozoic basement), whilst the middle and outer shelf areas are composed of Cretaceous and Tertiary sediments (Dingle 1973; Dingle et al. 1987; Birch et al. 1976; Rogers 1977; Rogers & Bremner 1991). As a result of erosion on the continental shelf along the West Coast, the unconsolidated sediment cover is generally thin, often less than 1 m. Sediments are finer seawards, changing from sand on the inner and outer shelves to muddy sand and sandy mud in deeper water. Further offshore, benthic habitats are dominated by lower bathyal and abyssal unconsolidated muds and sandy muds (**Figure 6**). The continental slope, seaward of the shelf break, has a smooth seafloor, underlain by calcareous ooze.

¹² The Benguela region extends the length of the Benguela Current from approximately Cape Point in the south, to the position of the Angola-Benguela front in the north. The Benguela Region can be divided into three subregions, namely the Southern Benguela (Cape Point to Cape Columbine), Central Benguela (Cape Columbine to Lüderitz) and Northern Benguela (Lüderitz to the Angola-Benguela front).

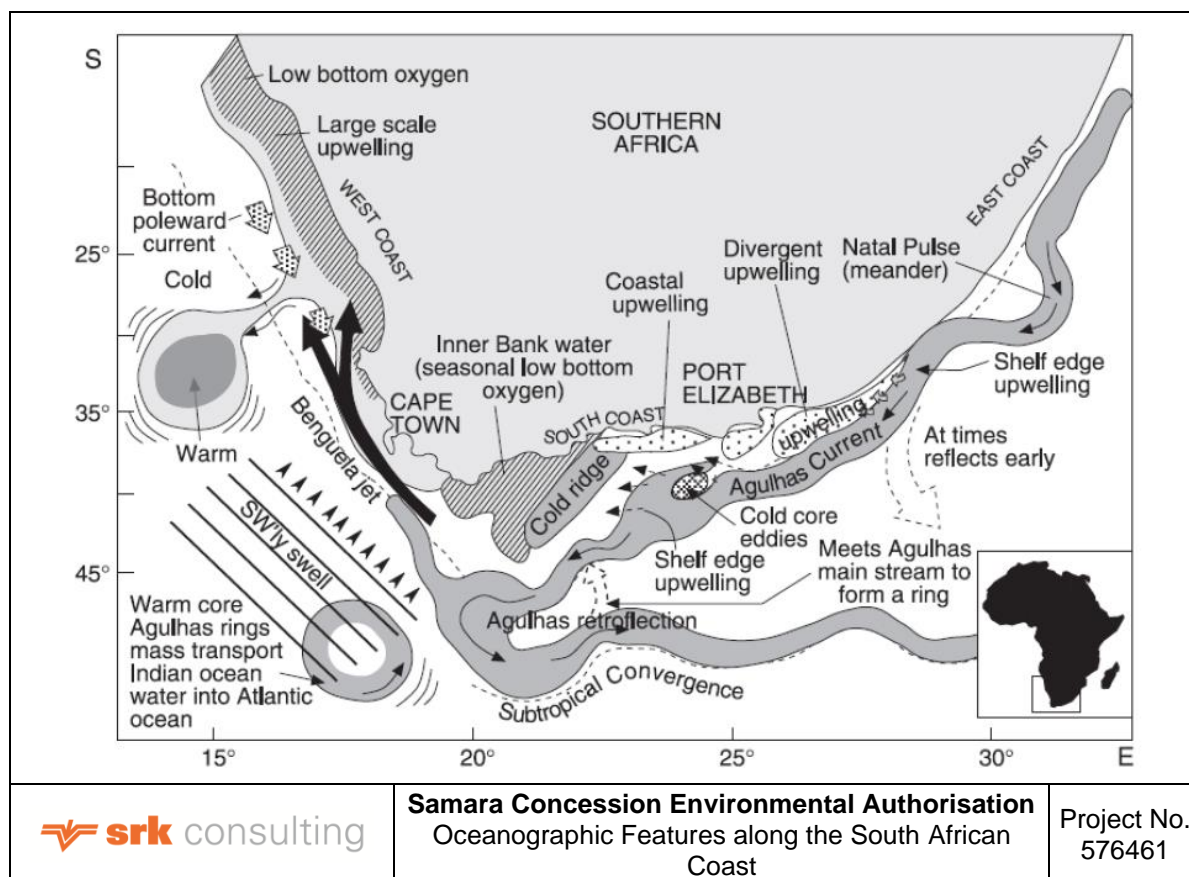


Figure 5: Oceanographic features along the South African Coast

Source: Roberts, 2005

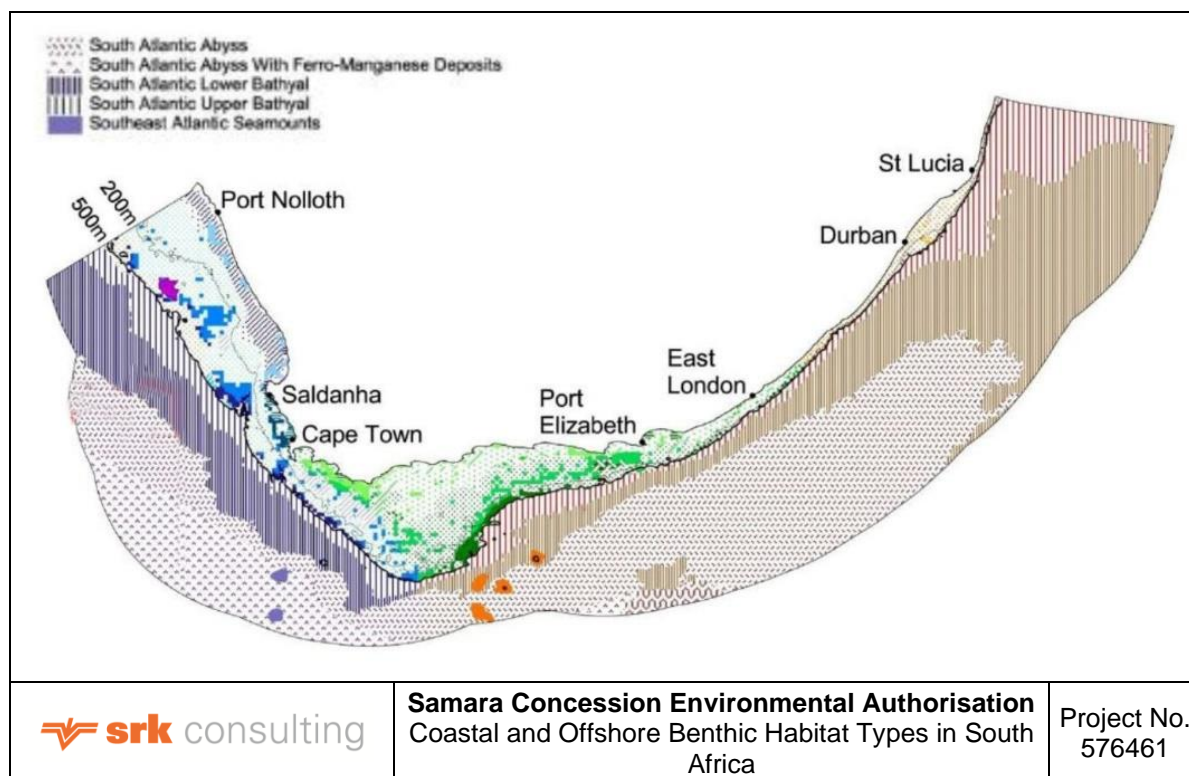


Figure 6: Coastal and offshore benthic habitat types in South Africa

Source: Adapted from Sink et al., 2015

Meteorology

The terrestrial climate along the West Coast of South Africa is considered moderate. Weather patterns along the West Coast are influenced largely by the mid-latitude cyclones that are generated to the southwest of the country, and the South Atlantic and Indian Ocean high pressure systems (CCA, 2011). The key weather patterns around southern Africa are illustrated in **Figure 7**.

Winds are one of the main physical drivers of the nearshore Benguela region, both on an oceanic scale, generating the heavy and consistent south-westerly swells that impact this coast, and locally, contributing to the northward-flowing longshore currents, and being the prime mover of sediments in the terrestrial environment. Consequently, physical processes are characterised by the average seasonal wind patterns, and substantial episodic changes in these wind patterns have strong effects on the entire Benguela region.

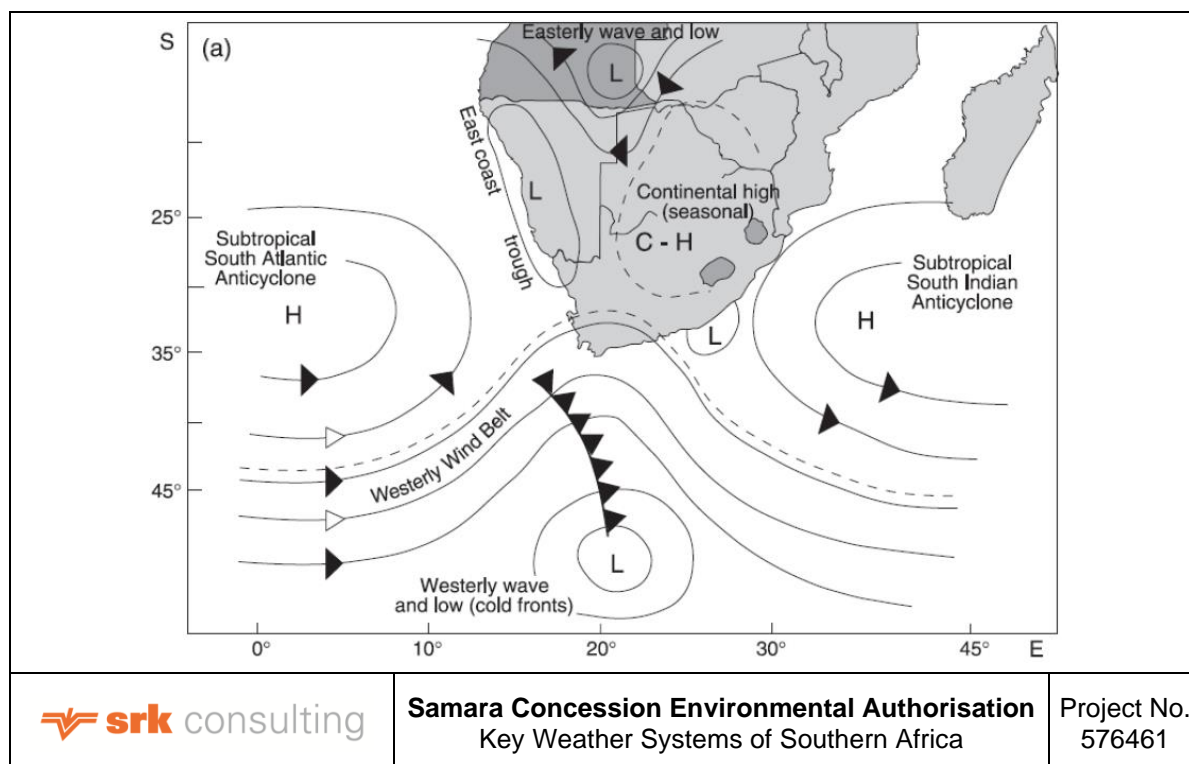


Figure 7: Key weather systems of Southern Africa

Source: Roberts, 2005

These seasonal changes result in substantial differences between the typical summer and winter wind patterns in the region, as the southern hemisphere anti-cyclonic high-pressure system, and the associated series of cold fronts, moves northwards in winter, and southwards in summer. Virtually all winds in summer come from the south to south-southeast. The combination of these southerly/south-easterly winds drives the massive offshore movements of surface water, and the resultant strong upwelling of nutrient-rich bottom waters, which characterise this region in summer.

Winter remains dominated by southerly to south-easterly winds, but the closer proximity of the winter cold-front systems results in a significant south-westerly to north-westerly component. This 'reversal' from the summer condition results in cessation of coastal upwelling, movement of warmer mid-Atlantic water shorewards and breakdown of the strong thermoclines, which typically develop over the shelf in summer.

Physical Oceanography

Large-Scale Circulation and Coastal Currents

The southern African West Coast is strongly influenced by the Benguela Current. Current velocities in continental shelf areas generally range between 10–30 cm/s (Boyd & Oberholster 1994), although localised flows in excess of 50 cm/s occur associated with eddies (NCEP, 2012). On its western side, flow is more transient and characterised by large eddies shed from the retroflexion of the Agulhas Current. This results in considerable variation in current speed and direction over the domain. In the south, the Benguela Current has a width of 200 km, widening rapidly northwards to 750 km. The surface flows are predominantly wind-forced, barotropic and fluctuate between poleward and equatorward flow (Shillington *et al.* 1990; Nelson & Hutchings 1983) (**Figure 8**). Current speeds decrease with depth, while directions rotate from predominantly north-westerly at the surface to south-easterly near the seabed. Near bottom shelf flow is mainly poleward with low velocities of typically <5 cm/s (Nelson 1989).

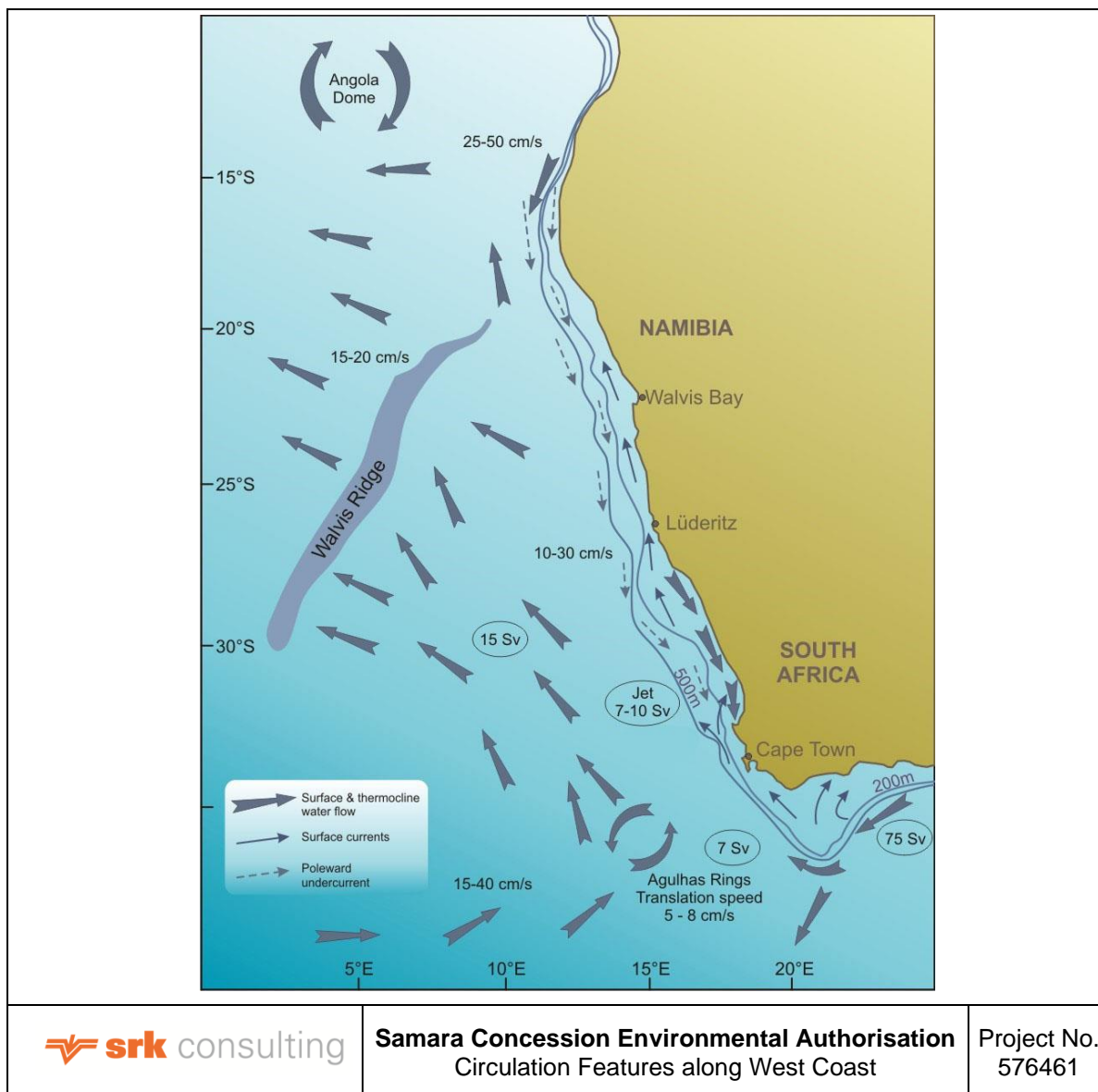


Figure 8: Major circulation features in the Benguela region

Source: Adapted from Shannon and Nelson, 1996

The major feature of the Benguela Current is coastal upwelling. As a consequence, the high nutrient supply to surface waters leads to high primary phytoplankton production, which in turn, serves as the basis for a rich food chain. The prevailing longshore, equatorward winds move nearshore surface water northwards and offshore. To balance the displaced water, cold, nutrient-rich water wells up inshore. Although the rate and intensity of upwelling fluctuates with seasonal variations in wind

patterns, the most intense upwelling tends to occur where the shelf is narrowest and the wind strongest. There are three upwelling centres in the southern Benguela, namely the Namaqua (30°S), Cape Columbine (33°S) and Cape Point (34°S) upwelling cells (Taunton-Clark 1985). Upwelling in these cells is seasonal, with maximum upwelling occurring between September and March. The Block is located within (or in close proximity to) the Namaqua upwelling region and would likely be influenced by intrusions of warm Agulhas Current water.

Waves and Tides

Most of the west coast of southern Africa is classified as exposed, experiencing strong wave action (Pulfrich & Steffani, 2014). Much of the coastline (to the east of the Block) is impacted by heavy south-westerly swells generated in the Roaring Forties¹³, as well as significant sea waves generated locally by the prevailing moderate to strong southerly winds characteristic of the region. The peak wave energy periods fall in the range 9.7 – 15.5 seconds.

The wave regime along the southern African West Coast shows only moderate seasonal variation in direction, with virtually all swells throughout the year coming from the S and SSW direction. With wind speeds capable of reaching 100 km/h during heavy winter south-westerly storms, winter swell heights can exceed 10 m. In comparison, summer swells tend to be smaller on average, typically around 2 m, not reaching the maximum swell heights of winter.

In common with the rest of the southern African coast, tides are semi-diurnal, with a total range of some 1.5 m at spring tide, but only 0.6 m during neap tide periods.

Water

South Atlantic Central Water (SACW) comprises the bulk of the seawater in the study area, either in its pure form in the deeper regions, or mixed with previously upwelled water of the same origin on the continental shelf (Nelson & Hutchings 1983). Salinities range between 34.5 ppt and 35.5 ppt (Shannon 1985).

Seawater temperatures on the continental shelf of the southern Benguela typically vary between 6°C and 16°C. Well-developed thermal fronts exist, demarcating the seaward boundary of the upwelled water.

Nutrient Distribution

The inshore Benguela upwelling region is an area of particularly high natural productivity, with extremely high seasonal production of phytoplankton and zooplankton. These plankton blooms serve as the basis for a rich food chain up through pelagic baitfish (anchovy, pilchard, round-herring and others), to predatory fish (snoek), mammals (primarily seals and dolphins) and seabirds (jackass penguins, cormorants, pelicans, terns and others). All of these species are subject to natural mortality, and a proportion of the annual production of all these trophic levels, particularly the plankton communities, die naturally and sink to the seabed.

Balanced multispecies ecosystem models have estimated that during the 1990s the Benguela region supported biomasses of 76.9 tons/km² of phytoplankton and 31.5 tons/km² of zooplankton alone (Shannon *et al.* 2003). Thirty-six percent of the phytoplankton and 5% of the zooplankton are estimated to be lost to the seabed annually. This natural annual input of millions of tons of organic material onto the seabed off the southern African West Coast has a substantial effect on the ecosystems of the

¹³ The Roaring Forties are strong westerly winds generally occurring between 40°S and 50°S degrees. The strong west-to-east air currents are caused by the combination of air being displaced from the Equator towards the South Pole and the Earth's rotation, and there are few landmasses to serve as windbreaks.

Benguela region. It provides most of the food requirements of the particulate and filter-feeding benthic communities that inhabit the sandy-muds of this area, and results in the high organic content of the muds in the region. As most of the organic detritus is not directly consumed, it enters the seabed decomposition cycle, resulting in subsequent depletion of oxygen in deeper waters.

Biological Oceanography

The Block falls in the relatively uniform cool Namaqua Bioregion (Lombard *et al.* 2004) (**Figure 9**), which extends from Cape Point to Luderitz. The coastal, wind-induced upwelling characterising the West Coast coastline, is the principle physical process that shapes the marine ecology of this region. The Benguela system is characterised by the presence of cold surface water, high biological productivity, and highly variable physical, chemical and biological conditions. The upwelling process, predominantly occurring in spring/summer, supplies inorganic nutrients to the euphotic zone supporting high biological productivity (Pulfrich & Steffani, 2014).

Communities within marine habitats are largely ubiquitous throughout the southern African West Coast region, being particular only to substrate type or depth zone. These biological communities consist of many hundreds of species, often displaying considerable temporal and spatial variability (even at small scales). The offshore marine ecosystems comprise a limited range of habitats, namely unconsolidated seabed sediments and the water column. The biological communities 'typical' of these habitats are described briefly below, focussing both on dominant, commercially important and conspicuous species, as well as potentially threatened or sensitive species.

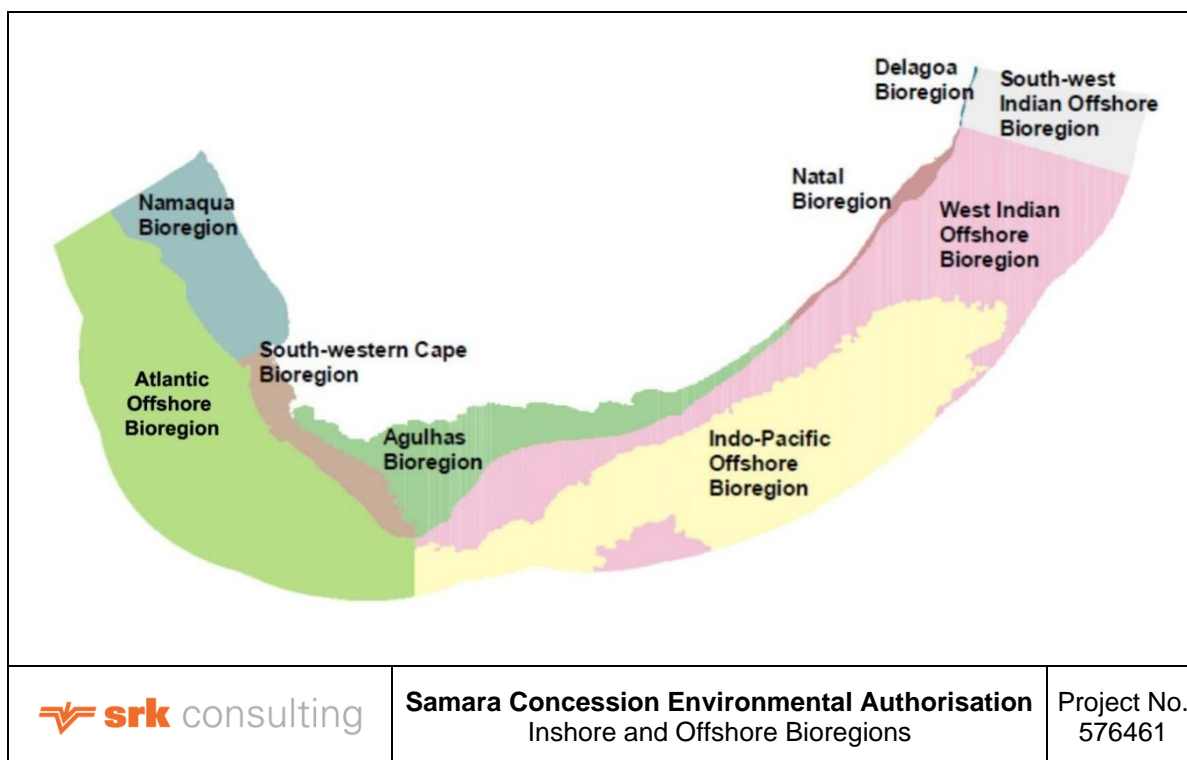


Figure 9: The South African inshore and offshore bioregions

Source: Lombard *et al.*, 2004

Demersal Communities

Benthic Invertebrate Macrofauna

The benthic (bottom dwelling) biota of unconsolidated marine sediments constitute invertebrates that live on (epifauna) or burrow within (infauna) the sediments, and are generally divided into macrofauna (animals >1 mm) and meiofauna (<1 mm). Numerous studies have been conducted on southern

African West Coast continental shelf benthos, mostly focused on mining, pollution or demersal trawling impacts.

Generally, polychaetes, crustaceans and molluscs make up the largest proportion of individuals, biomass and species of macro-infauna communities on the West Coast. Typically, species richness increases from the inner-shelf across the mid-shelf and is influenced by sediment type. The distribution of species is typically inherently patchy reflecting the high natural spatial and temporal variability associated with macro-infauna of unconsolidated sediments (e.g. Kenny *et al.* 1998; Kendall & Widdicombe 1999; van Dalfsen *et al.* 2000; Zajac *et al.* 2000; Parry *et al.* 2003), with evidence of mass mortalities and substantial recruitments recorded on the south African West Coast (Steffani & Pulfrich 2004).

The ecosystem threat status of coastal and offshore benthic, and offshore pelagic ecosystems along the West Coast, as assessed in the marine component of the 2011 National Biodiversity Assessment (Sink *et al.* 2012), is presented in **Figure 10**. This primarily reflects the great extent of these habitats in the South African Exclusive Economic Zone (EEZ).

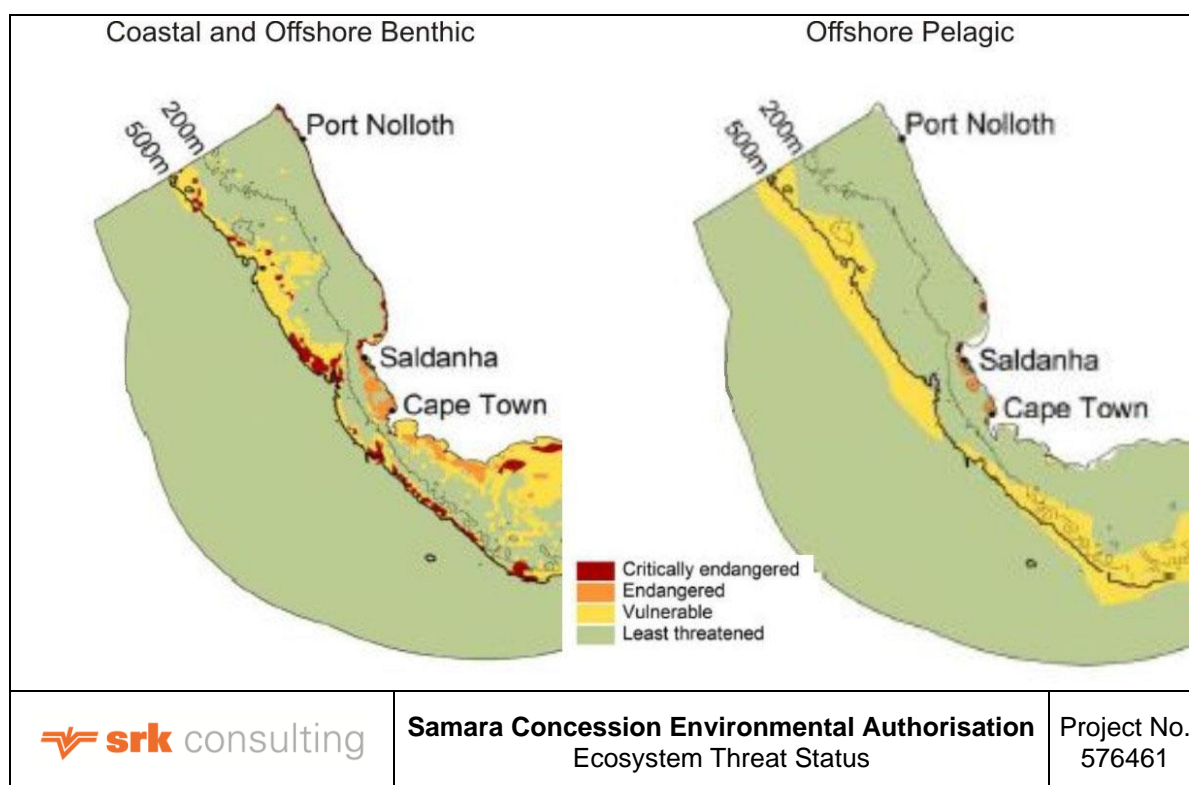


Figure 10: Ecosystem threat status for coastal and offshore benthic habitat types (left), and offshore pelagic habitat types (right)

Source: Adapted from Sink *et al.*, 2012

Demersal Fish Species

Demersal fish are those species that live and feed on or near the seabed. On the continental shelf of the West Coast, as many as 110 species of bony and cartilaginous fish have been identified at depths of <500 m (Roel 1987). Changes in fish communities occur with increasing depth (Roel 1987; Smale *et al.* 1993; Macpherson & Gordoa 1992; Bianchi *et al.* 2001; Atkinson 2009), with the most substantial change in species composition occurring in the shelf break region between 300 m and 400 m depth (Roel 1987; Atkinson 2009). The shelf community (<380 m) is dominated by the Cape hake *M. capensis*, and includes jacobever *Helicolenus dactylopterus*, Izak catshark *Holohaelurus regain*, soupfin shark *Galeorhinus galeus* and whitespotted houndshark *Mustelus palumbes*. The more diverse deeper water community (380 – 500 m) is dominated by the deepwater hake *Merluccius*

paradoxus, monkfish *Lophius vomerinus*, kingklip *Genypterus capensis*, bronze whiptail *Lucigadus ori* and hairy conger *Bassanago albescens* and various squalid shark species.

Pelagic Communities

In contrast to demersal and benthic biota that are associated with the seabed, pelagic species live and feed in the open water column. The pelagic communities are typically divided into plankton, cephalopods and fish, and their main predators, marine mammals (seals, dolphins and whales), seabirds and turtles. These are discussed separately below. Noteworthy is that the marine component of the 2011 National Biodiversity Assessment (Sink et al. 2012), rated the majority of the offshore pelagic habitat types that characterise depths beyond ~500 m, as 'least threatened' (**Figure 11**, right), with only a narrow band along the shelf break of the West Coast being rated as 'vulnerable', primarily due to its importance as a migration pathway for various resource species (e.g. whales, tuna, billfish, turtles). The Block may encroach on these 'vulnerable' pelagic ecosystems.

Plankton

Plankton range from single-celled bacteria to jellyfish of 2 m diameter, and include bacterio-plankton, phytoplankton, zooplankton, and ichthyoplankton (**Figure 11**). It is particularly abundant in the shelf waters off the West Coast, being associated with the upwelling characteristic of the area. However, further offshore in the warm, clear oceanic waters, plankton abundance is likely to be limited.

The phytoplankton on the West Coast is dominated by large-celled organisms, which are adapted to the turbulent sea conditions.

The mesozooplankton ($\geq 200 \mu\text{m}$) along the West Coast is dominated by copepods, which are overall the most dominant and diverse group in southern African zooplankton. Most mesozooplankton occur in the phytoplankton rich upper mixed layer of the water column, although some species undertake considerable vertical migration.

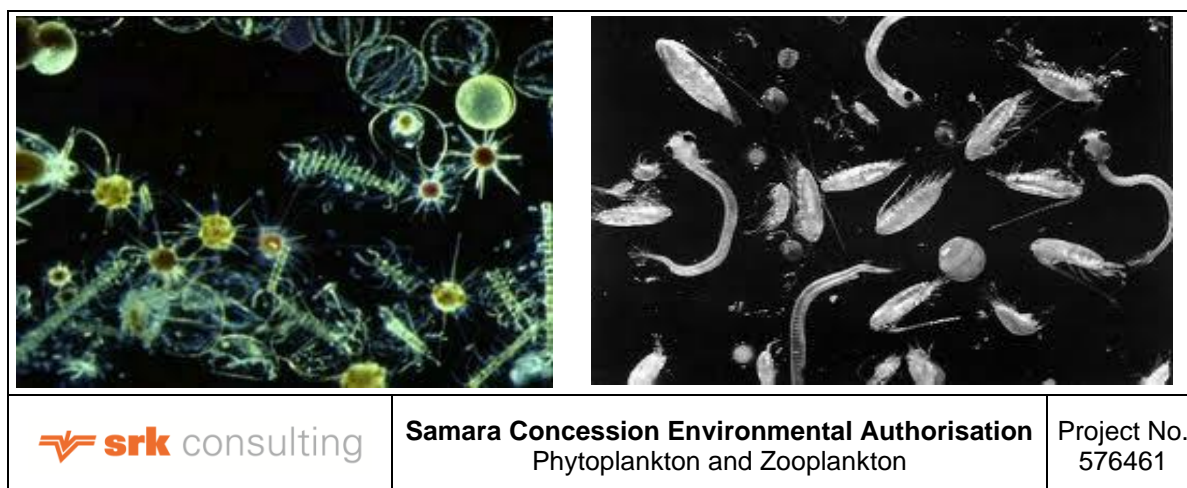


Figure 11: Phytoplankton (left) and zooplankton (right) associated with upwelling cells

Source: *hymagazine.com*; *mysciencebox.org*

The macrozooplankton ($\geq 1600 \mu\text{m}$) are dominated by euphausiids of which 18 species occur in the broader study area (Pillar *et al.* 1991). Macrozooplankton production increases north of Cape Columbine (Pillar 1986). Although it shows no appreciable onshore-offshore gradients, standing stock is highest over the shelf, with a marked decrease in biomass on the continental slope.

Zooplankton biomass varies with phytoplankton abundance and, accordingly, seasonal minima will exist during non-upwelling periods when primary production is lower (Brown 1984; Brown & Henry 1985), and during winter when predation by recruiting anchovy is high. More intense variation will occur in relation to the upwelling cycle; newly upwelled water supporting low zooplankton biomass due

to paucity of food, whilst high biomasses develop in aged upwelled water subsequent to significant development of phytoplankton. The Block is located within (or in close proximity to) the Namaqua upwelling region which may influence biomass.

Although ichthyoplankton (fish eggs and larvae) comprise a minor component of the overall plankton, it remains significant due to the commercial importance of the overall fishery in the region. Various pelagic and demersal fish species are known to spawn in the inshore regions of the southern Benguela, (including pilchard, round herring, chub mackerel lanternfish and hakes (Crawford *et al.* 1987), and their eggs and larvae form an important contribution to the ichthyoplankton in the region (**Figure 12**).

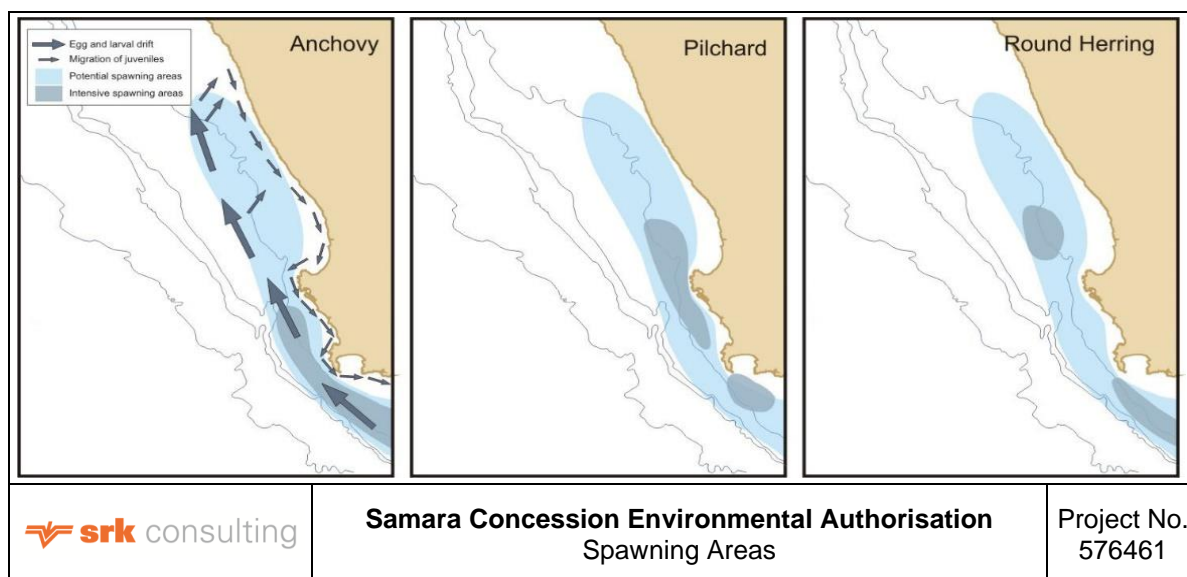


Figure 12: Major spawning areas in the southern Benguela region

Source: Adapted from Cruikshank, 1990

Cephalopods

Fourteen species of cephalopods have been recorded in the southern Benguela, the majority of which are cuttlefish (Lipinski 1992; Augustyn *et al.* 1995). Most of the cephalopod resource is distributed on the mid-shelf with *Sepia australis* being most abundant at depths between 60-190 m, whereas *S. hieronis* densities were higher at depths between 110-250 m. *Rossia enigmatica* occurs more commonly on the edge of the shelf to depths of 500 m. Biomass of these species was generally higher in the summer than in winter. Cuttlefish are largely epi-benthic and occur on mud and fine sediments in association with their major prey item; mantis shrimps (Augustyn *et al.* 1995). They form an important food item for demersal fish.

Pelagic invertebrates that may potentially be encountered in the Block include bobtail squid (*Rossia enigmatica*) with the likelihood of encountering the deep-dwelling colossal squid *Mesonychoteuthis hamiltoni* and the giant squid *Architeuthis* sp, being extremely low.

Pelagic Fish

Small pelagic species include the sardine/pilchard (*Sardinops ocellatus*) (**Figure 13**, left), anchovy (*Engraulis capensis*), chub mackerel (*Scomber japonicus*), horse mackerel (*Trachurus capensis*) (**Figure 13**, right) and round herring (*Etrumeus whiteheadi*). These species typically occur in mixed shoals of various sizes (Crawford *et al.* 1987), and generally occur within the 200 m contour and there is a small likelihood that they would be encountered in the Block. Most of the pelagic species exhibit similar life history patterns involving seasonal migrations between the west and south coasts. The spawning areas of the major pelagic species are distributed on the continental shelf and along the

shelf edge extending from south of St Helena Bay to Mossel Bay on the South Coast (Shannon & Pillar 1986).

They spawn inshore of the shelf edge and downstream of major upwelling centres (particularly on the Agulhas Bank), in spring and summer and their eggs and larvae are subsequently carried around Cape Point and up the coast in northward flowing surface waters. The Block falls within the potential spawning areas of various fish species, but north of the intensive spawning areas for anchovy, pilchard and round herring (**Figure 13**).



Figure 13: Cape fur seal preying on a shoal of pilchards (left) and school of horse mackerel (right)

Source: www.underwatervideo.co.za; www.delivery.superstock.com

At the start of winter every year, juveniles of most small pelagic shoaling species recruit into coastal waters in large numbers between the Orange River and Cape Columbine. They recruit in the pelagic stage, across broad stretches of the shelf, to utilise the shallow shelf region as nursery grounds before gradually moving southwards in the inshore southerly flowing surface current, towards the major spawning grounds east of Cape Point. These recruitment areas and migration routes are associated with the continental shelf on which the Block is located.

Two species that migrate along the West Coast following the shoals of anchovy and pilchards are snoek *Thyrsites atun* and chub mackerel *Scomber japonicas*. Other fish that may occur in the Block include tunas, billfish and pelagic sharks, which migrate throughout the southern oceans, between surface and deep waters (>300 m). Species occurring off western southern Africa include the albacore/longfin tuna *Thunnus alalunga* (**Figure 14**, right), yellowfin *T. albacares*, bigeye *T. obesus*, and skipjack *Katsuwonus pelamis* tunas, as well as the Atlantic blue marlin *Makaira nigricans* (**Figure 14**, left), the white marlin *Tetrapturus albidus* and the broadbill swordfish *Xiphias gladius* (Payne & Crawford 1989). The distributions of these species is dependent on food availability in the mixed boundary layer between the Benguela and warm central Atlantic waters. These species have a highly seasonal abundance in the Benguela and show seasonal associations with underwater feature such as canyons and seamounts as well as meteorologically induced oceanic fronts (Penney *et al.* 1992).

A number of species of pelagic sharks are also known to occur on the West and South-West Coast, including blue *Prionace glauca*, short-fin mako *Isurus oxyrinchus* and oceanic whitetip sharks *Carcharhinus longimanus*. Occurring throughout the world in warm temperate waters, these species are usually found further offshore on the West Coast. Great whites *Carcharodon carcharias* and whale sharks *Rhincodon typus* may also be encountered in offshore areas, although the latter occurs more frequently along the South and East coasts. Of these the blue shark is listed as “Near threatened”,

whale sharks as “Endangered” and the short-fin mako, whitetip, great white and whale sharks as “Vulnerable” on the International Union for Conservation of Nature (IUCN) species list.



Figure 14: Blue marlin (left) and longfin tuna (right)

Source: www.samathatours.com; www.osfimages.com

Turtles

Three species of turtle occur along the southern African West Coast, namely the leatherback (*Dermochelys coriacea*) (**Figure 15**, left), and occasionally the loggerhead (*Caretta caretta*) (**Figure 15**, right) and the Green (*Chelonia mydas*) turtle. Loggerhead and green turtles are expected to occur only as occasional visitors along the West Coast.

The leatherback is the only turtle likely to be encountered in the offshore waters of west South Africa. The Benguela ecosystem is increasingly being recognized as a potentially important feeding area for leatherback turtles from several globally significant nesting populations in the south Atlantic (Gabon, Brazil) and southeast Indian Ocean (South Africa) (Lambardi *et al.* 2008, Elwen & Leeney 2011). Leatherback turtles inhabit deeper waters and are considered a pelagic species, travelling the ocean currents in search of their prey (primarily jellyfish). While hunting they may dive to over 600 m (Hays *et al.* 2004).

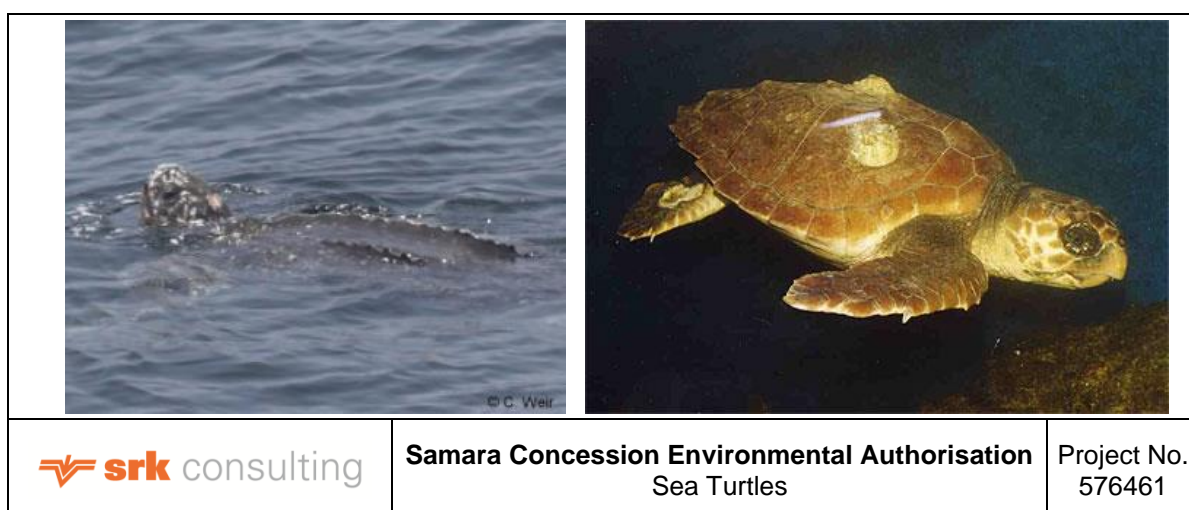


Figure 15: Leatherback (left) and loggerhead turtles (right)

Source: Ketos Ecology, 2009; www.aquaworld-crete.com

Leatherback turtles are listed as “Critically Endangered” worldwide by the IUCN and are in the highest categories in terms of need for conservation in the Convention on International Trade in Endangered

Species (CITES), and Convention on Migratory Species (CMS). As a signatory of CMS, South Africa has endorsed and signed a CMS International Memorandum of Understanding specific to the conservation of marine turtles. South Africa is thus committed to conserve these species at an international level.

Seabirds

Large numbers of pelagic seabirds exploit the pelagic fish stocks of the Benguela system. Of the 49 species of seabirds that occur in the Benguela region, 14 are defined as resident, 10 are visitors from the northern hemisphere and 25 are migrants from the Southern Ocean. The 18 species classified as being common in the southern Benguela are listed in Table 11.

Table 11: Pelagic seabirds common in the southern Benguela region

Common Name	Species name	Global IUCN
Shy albatross	<i>Thalassarche cauta</i>	Near Threatened
Black browed albatross	<i>Thalassarche melanophrys</i>	Endangered ¹⁴
Yellow nosed albatross	<i>Thalassarche chlororhynchos</i>	Endangered
Giant petrel sp.	<i>Macronectes halli/giganteus</i>	Near Threatened
Pintado petrel	<i>Daption capense</i>	Least concern
Greatwinged petrel	<i>Pterodroma macroptera</i>	Least concern
Soft plumaged petrel	<i>Pterodroma mollis</i>	Least concern
Prion spp	<i>Pachyptila</i> spp.	Least concern
White chinned petrel	<i>Procellaria aequinoctialis</i>	Vulnerable
Cory's shearwater	<i>Calonectris diomedea</i>	Least concern
Great shearwater	<i>Puffinus gravis</i>	Least concern
Sooty shearwater	<i>Puffinus griseus</i>	Near Threatened
European Storm petrel	<i>Hydrobates pelagicus</i>	Least concern
Leach's storm petrel	<i>Oceanodroma leucorhoa</i>	Vulnerable
Wilson's storm petrel	<i>Oceanites oceanicus</i>	Least concern
Blackbellied storm petrel	<i>Fregetta tropica</i>	Least concern
Skua spp.	<i>Catharacta/Stercorarius</i> spp.	Least concern
Sabine's gull	<i>Larus sabini</i>	Least concern

Source: Crawford et al., 1991

¹⁴ May move to Critically Endangered if mortality from long-lining does not decrease.

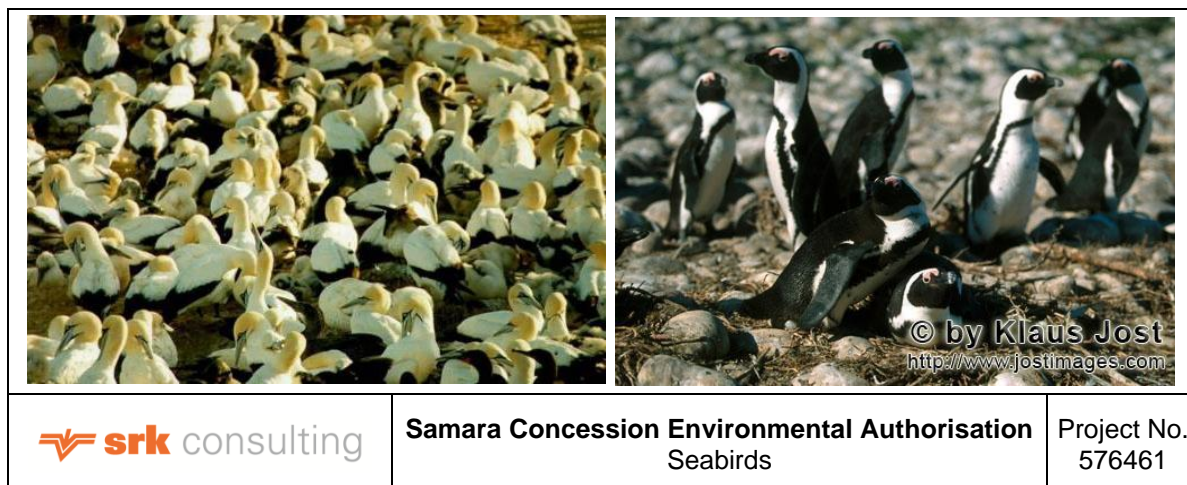


Figure 16: Cape Gannets *Morus capensis* (left) and African Penguins *Spheniscus demersus* (right) breed primarily on the offshore Islands

Source: NACOMA; Klaus Jost

The area between Cape Point and the Orange River supports 38% and 33% of the overall population of pelagic seabirds in the southern Benguela in winter and summer, respectively. Most of the species in the region reach highest densities offshore of the shelf break (200 – 500 m depth), with highest population levels during their non-breeding season (winter).

Fourteen species of seabirds breed in southern Africa: Cape gannet (**Figure 16**, left), African penguin (**Figure 16**, right), four species of cormorant, white pelican, three gull and four tern species (**Table 12**). The breeding areas are distributed around the coast with islands being especially important. Most of the breeding seabird species forage at sea with most birds being found relatively close inshore (10-30 km). Cape Gannets are known to forage up to 140 km offshore (Dundee 2006; Ludynia 2007), and African Penguins have been recorded as far as 60 km offshore. The Black browed albatross and Yellow nosed albatross are listed as “Endangered” according to the IUCN and are known to spend approximately 60-65% of their time in waters deeper than 500 m when foraging (Peterton et al 2008).

Table 12: Breeding resident seabirds present along the West Coast

Common name	Species name	Global IUCN Status
African Penguin	<i>Spheniscus demersus</i>	Endangered
Great Cormorant	<i>Phalacrocorax carbo</i>	Least Concern
Cape Cormorant	<i>Phalacrocorax capensis</i>	Endangered
Bank Cormorant	<i>Phalacrocorax neglectus</i>	Endangered
Crowned Cormorant	<i>Microcarbo coronatus</i>	Near Threatened
White Pelican	<i>Pelecanus onocrotalus</i>	Least Concern
Cape Gannet	<i>Morus capensis</i>	Endangered
Kelp Gull	<i>Larus dominicanus</i>	Least Concern
Greyheaded Gull	<i>Larus cirrocephalus</i>	Least Concern
Hartlaub's Gull	<i>Larus hartlaubii</i>	Least Concern
Caspian Tern	<i>Hydroprogne caspia</i>	Vulnerable
Swift Tern	<i>Sterna bergii</i>	Least Concern
Roseate Tern	<i>Sterna dougallii</i>	Least Concern
Damara Tern	<i>Sterna balaenarum</i>	Vulnerable

Source: CCA and CMS, 2001

Marine Mammals

Marine mammals occurring off the southern African coast includes several species of whales and dolphins and one resident seal species. Thirty-three species of whales and dolphins are known (based

on historic sightings or strandings records) or likely (based on habitat projections of known species parameters) to occur in these waters (Table 13).

The distribution of cetaceans can largely be split into those associated with the continental shelf and those that occur in deep, oceanic water. Importantly, species from both environments may be found on the continental slope (from the shelf break [200 – 400 m] to ~2,000 m) making this the most species rich area for cetaceans. Cetacean density on the continental shelf is usually higher than in pelagic waters as species associated with the pelagic environment tend to be wide ranging across thousands of kilometres. As the Exploration Area is located on the continental shelf, cetacean diversity can be expected to be relatively high, with abundances higher than further offshore.

Cetaceans are comprised of two taxonomic groups, the mysticetes (filter feeders with baleen) and the odontocetes (predatory whales and dolphins with teeth). The term 'whale' is used to describe species in both groups and is taxonomically meaningless (e.g. the killer whale and pilot whale are members of the Odontoceti, family Delphinidae and are thus dolphins). A review of the distribution and seasonality of the key cetacean species likely to be found within the study area is provided in Table 13.

Table 13: Cetaceans occurrence off the West Coast of South Africa, their seasonality, likely encounter frequency with proposed exploration activities and IUCN conservation status

Common Name	Species	Shelf	Offshore	Seasonality	Likely encounter frequency	IUCN Conservation Status
Delphinids						
Dusky dolphin	<i>Lagenorhynchus obscurus</i>	Yes (0- 800 m)	No	Year round	Daily	Data Deficient
Heaviside's dolphin	<i>Cephalorhynchus heavisidii</i>	Yes (0-200 m)	No	Year round	Daily	Data Deficient
Common bottlenose dolphin	<i>Tursiops truncatus</i>	Yes	Yes	Year round	Monthly	Least Concern
Common (short beaked) dolphin	<i>Delphinus delphis</i>	Yes	Yes	Year round	Monthly	Least Concern
Southern right whale dolphin	<i>Lissodelphis peronii</i>	Yes	Yes	Year round	Occasional	Data Deficient
Striped dolphin	<i>Stenella coeruleoalba</i>	No	?	?	Very rare	Least Concern
Pantropical spotted dolphin	<i>Stenella attenuata</i>	Edge	Yes	Year round	Very rare	Least Concern
Long-finned pilot whale	<i>Globicephala melas</i>	Edge	Yes	Year round	<Weekly	Data Deficient
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	?	?	?	Very rare	Data Deficient
Rough-toothed dolphin	<i>Steno bredanensis</i>	?	?	?	Very rare	Least Concern
Killer whale	<i>Orcinus orca</i>	Occasional	Yes	Year round	Occasional	Data Deficient
False killer whale	<i>Pseudorca crassidens</i>	Occasional	Yes	Year round	Monthly	Data Deficient
Pygmy killer whale	<i>Feresa attenuata</i>	?	Yes	?	Occasional	Least Concern
Risso's dolphin	<i>Grampus griseus</i>	Yes (edge)	Yes	?	Occasional	Data Deficient
Sperm whales						
Pygmy sperm whale	<i>Kogia breviceps</i>	Edge	Yes	Year round	Occasional	Data Deficient
Dwarf sperm whale	<i>Kogia sima</i>	Edge	?	?	Very rare	Data Deficient
Sperm whale	<i>Physeter macrocephalus</i>	Edge	Yes	Year round	Occasional	Vulnerable

Common Name	Species	Shelf	Offshore	Seasonality	Likely encounter frequency	IUCN Conservation Status
Beaked whales						
Cuvier's	<i>Ziphius cavirostris</i>	No	Yes	Year round	Occasional	Least Concern
Arnoux's	<i>Beradius arnouxii</i>	No	Yes	Year round	Occasional	Data Deficient
Southern bottlenose	<i>Hyperoodon planifrons</i>	No	Yes	Year round	Occasional	Not assessed
Layard's	<i>Mesoplodon layardii</i>	No	Yes	Year round	Occasional	Data Deficient
True's	<i>M. mirus</i>	No	Yes	Year round		Data Deficient
Gray's	<i>M. grayi</i>	No	Yes	Year round	Occasional	Data Deficient
Blainville's	<i>M. densirostris</i>	No	Yes	Year round		Data Deficient
Baleen whales						
Antarctic Minke	<i>Balaenoptera bonaerensis</i>	Yes	Yes	>Winter	Monthly	Data Deficient
Dwarf minke	<i>B. acutorostrata</i>	Yes	Yes	Year round	Occasional	Least Concern
Fin whale	<i>B. physalus</i>	Yes	Yes	MJJ & ON, rarely in summer	Occasional	Endangered
Blue whale	<i>B. musculus</i>	No	Yes	?	Occasional	Endangered
Sei whale	<i>B. borealis</i>	Yes	Yes	MJ & ASO	Occasional	Endangered
Bryde's (offshore)	<i>B. brydei</i>	Yes	Yes	Summer (JF)	Occasional	Not assessed
Bryde's (inshore)	<i>B. brydei (subsp)</i>	Yes	Yes	Year round	Occasional	Data Deficient
Pygmy right	<i>Caperea marginata</i>	Yes	?	Year round	Occasional	Least Concern
Humpback	<i>Megaptera novaeangliae</i>	Yes	Yes	Year round, higher in SONDJF	Daily*	Least Concern
Southern right	<i>Eubalaena australis</i>	Yes	No	Year round, higher in SONDJF	Daily*	Least Concern

Likely occurrence in probable habitat (Shelf or Offshore) is indicated by 'yes', 'no' (unlikely), 'edge' (shelf edge 200-500 m depth) or '?' (unknown).

Air Quality

There are no significant sources of air pollution in the area. It is therefore expected that air quality in the project area is good.

Noise

There are no significant sources of noise in the area, other than vessels.

Conservation Areas

Using biodiversity data mapped for the 2004 and 2011 National Biodiversity Assessments, a systematic biodiversity plan has been developed for the West Coast (Majiedt et al. 2013) with the objective of identifying both coastal and offshore priority areas for MPA expansion. To this end, various focus areas were identified for protection on the West Coast between Cape Agulhas and the South African – Namibian border, and these were carried forward through Operation Phakisa for the proposed development of offshore MPAs. A network of 20 MPAs was gazetted on 23 May 2019, thereby increasing the ocean protection within the South African EEZ to 5%.

Those within the broader project area are shown in **Figure 17**. Sea Area 4C overlaps with the Namaqua Fossil Forest MPA. The area has been excluded from the Prospecting Right application and no geophysical surveying and bulk sampling activities will occur there. The Namaqua Fossil Forest Marine Protected Area in the Northern Cape is an offshore Marine Protected Area in the 120 m to 150 m depth range lying approximately 15 nautical miles offshore of the coastal area between Port Nolloth and Kleinsee. The area includes the sea bed, water column and subsoil within these boundaries. The Namaqua Fossil Forest itself is a small (2 km²) seabed outcrop composed of fossilized yellowwood which have been colonized by fragile, habitat-forming scleractinian corals.

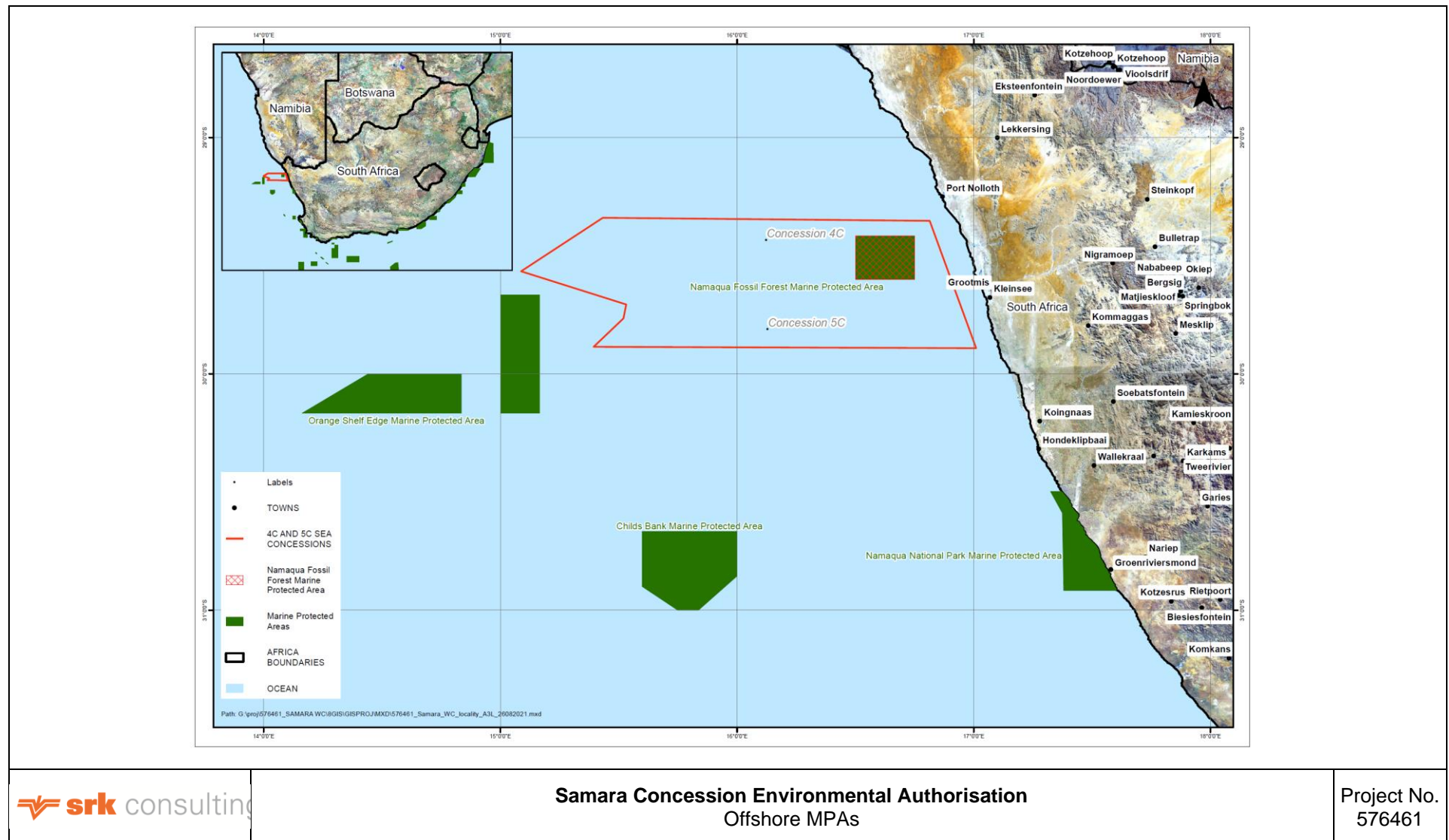


Figure 17: Priority areas for protection of benthic and pelagic habitats

Socio-economic Environment

Fisheries

According to CapMarine (2017), South Africa has a coastline that spans two ecosystems over a distance of 3 623 km, extending from the Orange River in the west on the border with Namibia, to Ponta do Ouro in the east on the Mozambique border. The western coastal shelf has highly productive commercial fisheries similar to other upwelling ecosystems around the world, while the East Coast is considerably less productive but has high species diversity, including both endemic and Indo-Pacific species. South Africa's commercial fisheries are regulated and monitored by the DFFE. All fisheries in South Africa, as well as the processing, sale in and trade of almost all marine resources, are regulated under the MLRA.

Approximately 14 different commercial fishery sectors currently operate within South African waters. Primary fisheries in terms of economic value and overall tonnage of landings are the demersal (bottom) trawl and long-line fisheries targeting the Cape hakes (*Merluccius paradoxus* and *M. capensis*) and the pelagic-directed purse-seine fishery targeting pilchard (*Sardinops ocellatus*), anchovy (*Engraulis encrasicolus*) and red-eye round herring (*Etrumeus whitheadii*). Highly migratory tuna and tuna-like species are caught on the high seas and seasonally within the South African waters by the pelagic long-line and pole fisheries. Targeted species include albacore (*Thunnus alalunga*), bigeye tuna (*T. obesus*), yellowfin tuna (*T. albacares*) and swordfish (*Xiphias gladius*). The traditional line fishery targets a large assemblage of species close to shore including snoek (*Thyrsites atun*), Cape bream (*Pachymetopon blochii*), geelbek (*Atractoscion aequidens*), kob (*Argyrosomus japonicus*), yellowtail (*Seriola lalandi*) and other reef fish. Crustacean fisheries comprise a trap and hoop net fishery targeting West Coast rock lobster (*Jasus lalandii*), a line trap fishery targeting the South Coast rock lobster (*Palinurus gilchristi*) and a trawl fishery based solely on the East Coast targeting penaeid prawns, langoustines (*Metanephrops andamanicus* and *Nephropsis stewarti*), deep-water rock lobster (*Palinurus delagoae*) and red crab (*Chaceon macphersoni*). Other fisheries include a mid-water trawl fishery targeting horse mackerel (*Trachurus trachurus capensis*) predominantly on the Agulhas Bank, South Coast and a hand-jig fishery targeting chokka squid (*Loligo vulgaris reynaudii*) exclusively on the South Coast. In addition to commercial sectors, recreational fishing occurs along the coastline comprising shore angling and small, open boats generally less than 10 m in length. The commercial and recreational fisheries are reported to catch over 250 marine species, although fewer than 5% of these are actively targeted by commercial fisheries, which comprise 90% of the landed catch.

Most commercial fish landings must take place at designated fishing harbours. For the larger industrial vessels targeting hake, only the major ports of Saldanha Bay, Cape Town, Mossel Bay and Port Elizabeth are used. On the West Coast, St. Helena Bay and Saldanha Bay are the main landing sites for the small pelagic fleets. These ports also have significant infrastructure for the processing of anchovy into fishmeal as well as canning of sardine. Smaller fishing harbours on the West / South-West Coast include Port Nolloth, Hondeklipbaai, Lamberts Bay, Laaiplek, Hout Bay and Gansbaai harbours. There are more than 230 small-scale fishing communities on the South African coastline (DAFF, 2016), ranging in size from small villages to towns. Small-scale fisheries commonly use boats but occur mainly close to the shore.

Diamond Prospecting and Mining

Off Namaqualand, marine diamond mining activity is primarily restricted to the surf-zone and (a)-concessions. Nearshore shallow-water mining is conducted by divers using small-scale suction hoses operating either directly from the shore in small bays or from converted fishing vessels out to ~30 m depth. However, over the past few years there has been a substantial

decline in small-scale diamond mining operations due to the global recession and depressed diamond prices, although some vessels do still operate out of Alexander Bay and Port Nolloth.

Oil and Gas Exploration and Production

Exploration for oil and gas is currently undertaken in a number of licence blocks off the West Coast of South Africa. Although now development or production from the South African West Coast offshore, exploration for oil and gas is being undertaken in the area.

Anthropogenic Structures

Human intervention in the marine environment has introduced certain hazards on the seafloor. The Annual Summary of South African Notices to Mariners and charts from the South African Navy or Hydrographic Office provides detailed information on the location of different underwater hazards along the West Coast. These include undersea cables and archaeological sites.

Undersea Cables

There are a number of submarine telecommunications cable systems across the Atlantic and the Indian Ocean as depicted in **Figure 18**: African undersea cables, including the WACS and ACE cables. The SAT3/SAFE cables (SAT-1 [abandoned], SAT-2 and SAT-3) are laid on the seafloor approximately on the 3 000 m isobaths, running up the Cape Canyon to land at Melkbosstrand.

Marine Archaeological Sites

More than 2 000 shipwrecks are present along the South African coastline. The majority of known wrecks along the West Coast are located in relatively shallow water close inshore (within the 100 m isobath). Wrecks older than 60 years old have National Monument status. It is unlikely that any shipwrecks exist beyond the shallow inshore region.

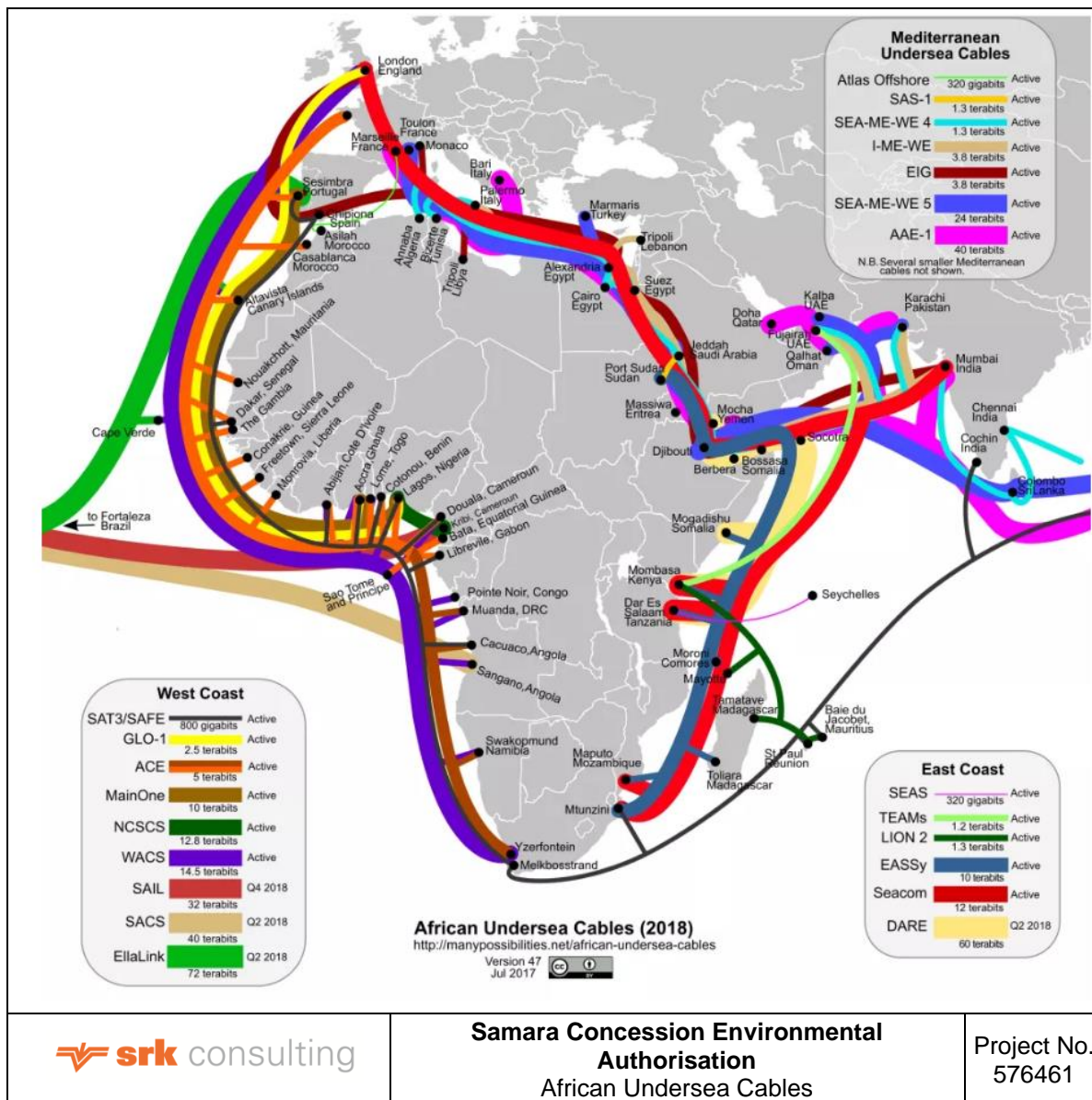


Figure 18: African undersea cables

Source: www.manypossibilities.net, 2017

(b) Description of the current land uses.

Not Applicable as this is an application for an Offshore Sea Concession.

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

Please refer to Section d (ii).

(d) Environmental and current land use map.

(Show all environmental and current land use features)

An environmental map has been attached as Appendix C

v) Impacts identified

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

The impacts of a project are mostly linked to the sensitivity of the receiving environment and proximity of receptors, the extent or footprint and nature of the development, expected discharges and stakeholders' perceptions.

Based on the above considerations as well as the professional experience of the Environmental Assessment Practitioners and input from specialists, the following key environmental issues – potential negative impacts and potential benefits of the project in its proposed setting are summarised below:

- Marine ecology - Potential impact on marine biota and resources, including the seabed;
- Underwater heritage – Potential impacts on sites of archaeological or palaeontological significance;
- Marine transport routes – Potential impact on marine transport routes a result of the statutory safety zone requirements around prospecting vessels;
- Fishing: Potential impact on fishing resulting in economic loss;
- Socio-economic – Benefits of limited employment opportunities and local investment opportunities. Potential impact on other marine prospecting/mining and exploration operations.

Certain impacts, while important, are considered likely to be less significant, including air quality, traffic and visual (or sense of place) aspects.

Table 14: Potential impacts of the proposed project without mitigation

Activities	Aspect	Potential Impact	Significance	Probability	Duration
Bulk sampling activities; and Geophysical sampling	Marine Ecology	Disturbance and/or impact on marine life as a result of normal discharges from survey and support vessels i.e. deck drainage, sewage and galley wastes.	Medium (-ve)	Definite	Medium-Term
		Accidental spillage of oils and other hazardous materials from the survey and support vessels disturbing and/or killing marine fauna.	Medium (-ve)	Possible	Medium-Term
		Physical injury/mortality of marine life during as a result of survey and support vessel operation.	Medium (-ve)	Definite	Medium-Term
		Potential impacts of multi-beam bathymetry and/or sub-bottom profiler pulses, noise and lightning resulting in marine fauna avoiding the area, masking environmental sounds/communication between animals. It may also lead to indirect impacts due to marine fauna being unaware of predators.	Low (-ve)	Definite	Medium-Term
		Physical damage to the seabed, sediment structure alteration, alteration/reduction in benthic faunal community composition as a result of bulk sampling activities.	Med (-ve)	Definite	Medium-Term
		Increased turbidity in the water during the re-deposition of tailings back to the seabed.	Medium (-ve)	Definite	Medium-Term
	Fisheries	Disruption of fishing activities/loss of access to fishing areas/loss of catch.	Low (-ve)	Possible	Medium-Term
	Archaeology/Palaeontology	Areas of archaeological/palaeontological importance may be disturbed, including shipwrecks.	Low (-ve)	Possible	Medium-Term
	Marine Prospecting/Mining/Exploration	The presence of survey and support vessels may have an impact due to the legislative requirement of a 500 m safety zone around these vessels.	Low (-ve)	Possible	Medium-Term
	Marine Transport Routes	The presence of survey and support vessels may have an impact due to the legislative requirement of a 500 m safety zone around these vessels.	Low (-ve)	Possible	Medium-Term
	Socio-Economic	Creation of limited employment opportunities and limited revenues in local areas.	Low (+ve)	Definite	Medium-Term

vi) Methodology used in determining the significance of environmental impacts;

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

Impacts will be rated according to SRK's prescribed impact assessment methodology presented below.

The **significance** of an impact is defined as a combination of the **consequence** of the impact occurring, including possible irreversibility of impacts and/or loss of irreplaceable resources, and the **probability** that the impact will occur.

The criteria used to determine impact consequence are presented in the **Table 15**.

Table 15: Criteria used to determine the consequence of the impact

Rating	Definition of Rating	Score
A. Extent – the area (distance) over which the impact will be experienced		
Local	Confined to project or study area or part thereof (e.g. the development site and immediate surrounds)	1
Regional	The region (e.g. Municipality or Quaternary catchment)	2
(Inter) national	Nationally or beyond	3
B. Intensity – the magnitude of the impact in relation to the sensitivity of the receiving environment, taking into account the degree to which the impact may cause irreplaceable loss of resources		
Low	Site-specific and wider natural and/or social functions and processes are negligibly altered	1
Medium	Site-specific and wider natural and/or social functions and processes continue albeit in a modified way	2
High	Site-specific and wider natural and/or social functions or processes are severely altered and/or irreplaceable resources ¹⁵ are lost	3
C. Duration – the timeframe over which the impact will be experienced and its reversibility		
Short-term	Up to 2 years (i.e. reversible impact)	1
Medium-term	2 to 15 years (i.e. reversible impact)	2
Long-term	More than 15 years (state whether impact is irreversible)	3

The combined score of these three criteria corresponds to a **Consequence Rating**, as follows:

Table 16: Method used to determine the consequence score

Combined Score (A+B+C)	3 – 4	5	6	7	8 – 9
Consequence Rating	Very low	Low	Medium	High	Very high

Once the consequence was derived, the probability of the impact occurring was considered, using the probability classifications presented in the table below.

Table 17: Probability classification

Probability – the likelihood of the impact occurring	
Improbable	< 40% chance of occurring
Possible	40% - 70% chance of occurring
Probable	> 70% - 90% chance of occurring

¹⁵ Defined as important cultural or biological resource which occur nowhere else, and for which there are no substitutes.

Definite	> 90% chance of occurring
----------	---------------------------

The overall **significance** of impacts will be determined by considering consequence and probability using the rating system prescribed in **Table 18**.

Table 18: Impact significance ratings

		Probability			
		Improbable	Possible	Probable	Definite
Consequence	Very Low	INSIGNIFICANT	INSIGNIFICANT	VERY LOW	VERY LOW
	Low	VERY LOW	VERY LOW	LOW	LOW
	Medium	LOW	LOW	MEDIUM	MEDIUM
	High	MEDIUM	MEDIUM	HIGH	HIGH
	Very High	HIGH	HIGH	VERY HIGH	VERY HIGH

Finally the impacts will also be considered in terms of their status (positive or negative impact) and the confidence in the ascribed impact significance rating. The prescribed system for considering impacts status and confidence (in assessment) is laid out in **Table 19**.

Table 19: Impact status and confidence classification

Status of impact	
Indication whether the impact is adverse (negative) or beneficial (positive).	+ ve (positive – a 'benefit')
	– ve (negative – a 'cost')
Confidence of assessment	
The degree of confidence in predictions based on available information, SRK's judgment and/or specialist knowledge.	Low
	Medium
	High

The impact significance rating should be considered by authorities in their decision-making process based on the implications of ratings ascribed below:

- **INSIGNIFICANT:** the potential impact is negligible and **will not** have an influence on the decision regarding the proposed activity/development.
- **VERY LOW:** the potential impact is very small and **should not** have any meaningful influence on the decision regarding the proposed activity/development.
- **LOW:** the potential impact **may not** have any meaningful influence on the decision regarding the proposed activity/development.
- **MEDIUM:** the potential impact **should** influence the decision regarding the proposed activity/development.
- **HIGH:** the potential impact **will** affect the decision regarding the proposed activity/development.
- **VERY HIGH:** The proposed activity should only be approved under special circumstances.

Practicable mitigation and optimisation measures are recommended and impacts are rated in the prescribed way both without and with the assumed effective implementation of mitigation and optimisation measures. Mitigation and optimisation measures are either:

- **Essential:** measures that must be implemented and are non-negotiable; and
- **Best Practice:** recommended to comply with best practice, with adoption dependent on the proponent's risk profile and commitment to adhere to best practice, and which must be shown to have been considered and sound reasons provided by the applicant if not implemented.

vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

Site layout alternatives will not be considered in the Impact Assessment Phase, but specific technologies and affected footprints within the Offshore concession areas will take account of environmental constraints identified during the Impact Assessment Phase. **Table 14** therefore provides the potential positive and negative impacts of the project as described in Section (2)(d)(ii). Please refer to (2)(d)(viii) for the management and mitigation measures.

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

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

Input from specialists and experienced SRK/NDI EAPs, have informed the high level mitigation measures outlined in **Table 20**. Detailed mitigation measures will be further developed as part of the Impact Assessment Phase.

Table 20: High level mitigation measures for potential impacts identified for the project

Activities	Aspect	Potential Impact	High Level Mitigation
Bulk sampling activities; and Geophysical sampling	Marine Ecology	Disturbance and/or impact on marine life as a result of normal discharges from survey and support vessels i.e. deck drainage and galley wastes.	Compliance with the EMP and Marpol 73/78 standards. Inform all staff about sensitive marine species and the responsible disposal of wastes. Suitable waste handling and disposal protocols must be clearly explained and sign boarded.
		Accidental spillage of oils and other hazardous materials from the survey and support vessels disturbing and/or killing marine fauna.	Compliance with the EMP and Marpol 73/78 standards. Inform all staff about sensitive marine species and the responsible disposal of wastes. Compile Emergency Response Plan.
		Physical injury/mortality of marine life during as a result of survey and support vessel operation.	Constrain the spatial extent of impacts to the minimum required to minimise disturbance within the seabed. Limit duration of dredging activities. Inform all staff about sensitive marine species and the responsible disposal of wastes.
		Potential impacts of multi-beam bathymetry and/or sub-bottom profiler pulses, noise and lightning resulting in marine fauna avoiding the area, masking environmental sounds/communication between animals. It may also lead to indirect impacts due to marine fauna being unaware of predators.	Constrain the spatial extent of impacts to the minimum required to minimise disturbance within the seabed. Limit duration of dredging activities. Inform all staff about sensitive marine species and the responsible disposal of wastes.
		Physical damage to the seabed, sediment structure alteration, alteration/reduction in benthic faunal community composition as a result of bulk sampling activities.	Constrain the spatial extent of impacts to the minimum required to minimise disturbance within the seabed. Limit duration of dredging activities. Preference should be given to dynamically positioned sampling vessels versus vessels requiring anchorage. Inform all staff about sensitive marine species and the responsible disposal of wastes.
		Increased turbidity in the water during the re-deposition of tailings back to the seabed.	Tailings and fine sediments to be replaced back to the seabed as soon as possible.
	Fisheries	Disruption of fishing activities/loss of access to fishing areas/loss of catch.	Establish a communication and notification procedure.
	Archaeology/Palaeontology	Areas of archaeological/palaeontological importance may be disturbed, including shipwrecks.	Exclude areas where shipwreck sites have been identified from bulk sampling programmes.

Activities	Aspect	Potential Impact	High Level Mitigation
	Marine Prospecting/Mining/Exploration	The presence of survey and support vessels may have an impact due to the legislative requirement of a 500 m safety zone around these vessels.	Establish a communication and notification procedure.
	Marine Transport Routes	The presence of survey and support vessels may have an impact due to the legislative requirement of a 500 m safety zone around these vessels.	Establish a communication and notification procedure.
	Socio-Economic	Creation of limited employment opportunities and limited revenues in local areas.	Where possible employ people from the local communities.

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

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

A final site layout plan is shown in **Appendix C**.

ix) Motivation where no alternative sites were considered.

Alternatives have been considered for this project, as listed above in Section 2 (h)(i) above.

Where alternatives will not be considered in the Impact Assessment Phase, reasons have been provided in Section 2 (h)(i) above.

x) Statement motivating the preferred site.

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

The location and extent of the prospecting activities will be based on the information derived from the desktop and geophysical surveys as well as the specialist studies. Where practicable, the bulk sampling sites will be selected to avoid sensitive environments such as marine biodiversity of conservation importance and heritage features.

j) Plan of study for the Environmental Impact Assessment process**(i) Description of alternatives to be considered including the option of not going ahead with the activity**

Refer to Section 2 (h)(i).

(ii) Description of the aspects to be assess as part of the environmental assessment process

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

The aspects to be assessed are included in **Table 14** and **Table 20**.

(iii) Description of aspects to be assessed by specialists

A number of specialist studies will be undertaken in the Impact Assessment Phase to investigate the key potential direct, indirect and cumulative impacts (negative and positive) identified during Scoping. These specialist impact studies are as follows:

- Underwater heritage impact assessment;
- Marine ecology assessment; and
- Fisheries impact assessment.

The Terms of Reference (ToR) for each of the specialist studies is provided in **Table 21**. The ToR are subject to review on conclusion of the Scoping Study, taking into account issues raised by stakeholders and authorities through the Scoping Phase.

The specialist studies shall be based on the procedure outlined below.

Approach to the Study

Provide an outline of the approach used in the study. Assumptions, limitations and sources of information must be clearly identified. The knowledge of local people should, where possible, be incorporated in the study. The description of the approach shall include a short discussion of the appropriateness of the methods used in the specialist study. The assessment of the data shall, where possible, be based on accepted scientific techniques, failing which the specialist is to make judgments based on professional expertise and experience.

Description of the Affected Environment or Baseline

A description of the affected environment must be provided, both at a site-specific level and for the wider region, the latter to provide an appropriate context and cumulative impact analysis. The focus of this description shall be relevant to the specialists' field of expertise.

It is essential that the relative uniqueness or irreplaceability of the area be understood in the context of the surrounding region at a local, regional (and, if necessary, national) scale. This will largely be based on a comparison to existing data sources, where available.

The baseline should provide an indication of the sensitivity of the affected environment. Sensitivity, in this instance, refers to the 'ability' of an affected environment to tolerate disturbance (given existing and expected cumulative impacts).

Lastly, the baseline should provide a sufficiently comprehensive description of the existing environment in the study area to ensure that a detailed assessment of the potential impacts of the proposed development can be made. The baseline should include data collected through a thorough literature review as well as field surveys (where applicable).

Impact Identification and Assessment

Clear statements identifying the potential environmental impacts of the proposed project must be presented. This includes potential impacts of the upgrade and operation of the project. The specialist shall clearly identify the suite of potential direct, indirect and cumulative environmental impacts¹⁶ in his/her study. The assessment of these impacts should take into account any other existing proposals in the surrounding area.

Direct impacts require a quantitative assessment which must follow the impact assessment methodology laid out in **Table 19**. The significance of impacts must be assessed both without and with assumed effective mitigation. Indirect and cumulative impacts should be described qualitatively.

The specialist shall comparatively assess environmental impacts of the development (and each alternative if applicable), and shall indicate any fatal flaws, i.e. very significant adverse environmental impacts which cannot be mitigated and which will jeopardise the project and/or activities in a particular area. All conclusions will need to be thoroughly backed up by scientific evidence.

Mitigation Measures

Specialists must recommend practicable mitigation measures or management actions that effectively minimise or eliminate negative impacts, enhance beneficial impacts, and assist project design. If appropriate, specialists must differentiate between essential mitigation and optimisation measures (i.e. implicit in the 'assuming mitigation' rating), and best practice measures (which reduce impacts, but do not affect the impact rating).

¹⁶ An indirect impact is an effect that is related to but removed from a proposed action by an intermediate step or process. Cumulative impacts occur when: Different impacts of one activity or impacts of different activities on the natural and social environment take place so frequently in time or so densely in space that they cannot be assimilated; or impacts of one activity combine with the impacts of the same or other activities in a synergistic manner.

Specialists are also required to recommend appropriate monitoring and review programmes to track the efficacy of mitigation measures (if appropriate).

Specialists must indicate the environmental acceptability of the proposal (and alternatives if applicable), i.e. whether the impacts are acceptable or not. A comparison between the No-Go alternative and the proposed development alternative(s) must also be included.

Direct impacts require a quantitative assessment which must follow the impact assessment methodology laid out in **Table 19**. The significance of impacts must be assessed both without and with assumed effective mitigation. Indirect and cumulative impacts should be described qualitatively.

The specialist shall comparatively assess environmental impacts of the development (and each alternative if applicable), and shall indicate any fatal flaws, i.e. very significant adverse environmental impacts which cannot be mitigated and which will jeopardise the project and/or activities in a particular area. All conclusions will need to be thoroughly backed up by scientific evidence.

Mitigation Measures

Specialists must recommend practicable mitigation measures or management actions that effectively minimise or eliminate negative impacts, enhance beneficial impacts, and assist project design. If appropriate, specialists must differentiate between essential mitigation and optimisation measures (i.e. implicit in the 'assuming mitigation' rating), and best practice measures (which reduce impacts, but do not affect the impact rating).

Specialists are also required to recommend appropriate monitoring and review programmes to track the efficacy of mitigation measures (if appropriate).

Specialists must indicate the environmental acceptability of the proposal (and alternatives if applicable), i.e. whether the impacts are acceptable or not. A comparison between the No-Go alternative and the proposed development alternative(s) must also be included.

Table 21: Specialist Terms of Reference

Study	Terms of Reference for Specialist Studies
Underwater heritage impact assessment (ACO Associates)	<ul style="list-style-type: none"> Undertake a desktop study of the database of known and suspected wrecks in the area ascertained through the study of available written and oral resources; Identify potential Maritime and Underwater Cultural Heritage (MUCH) sites within the designated area; and Recommend management measures for sites before and during development.
Marine ecology assessment (Anchor)	<ul style="list-style-type: none"> Provide a general description of the local marine fauna (including cetaceans, seals, turtles, seabirds, fish, invertebrates and plankton species) within the Offshore concession areas and greater West Coast. The description to be based on, inter alia, a review of existing information and data from the international scientific literature, the Generic EMP prepared for marine diamond mining off the West Coast of South Africa and information sourced from the internet; Identify, describe and assess the significance of potential impacts of the proposed operations on the local marine fauna, including but not limited to: <ul style="list-style-type: none"> physiological injury; physical damage to the seabed, alteration of sediment structure, alteration in benthic fauna community composition and potential reduction in benthic biodiversity due to prospecting activities; impacts on benthic fauna due to the discharge of processed sediments, including direct mortality, smothering of relatively immobile or sedentary species and biochemical effects (e.g. direct toxicity and bioaccumulation); behavioural avoidance of the prospecting area; masking of environmental sounds and communication; and

	<ul style="list-style-type: none"> ○ indirect impacts due to effects on prey. • Identify practicable mitigation measures to avoid/reduce any negative impacts and indicate how these could be implemented in the start-up and management of the proposed project.
Fisheries impact assessment (CapFish)	<ul style="list-style-type: none"> • Provide a general description of the fishing activities expected in the Offshore concession areas and along the greater West Coast; • Undertake a spatial and temporal assessment of expected fishing effort and catch in the Offshore concession areas for each sector identified; • Assess the impact of the operations on the different fishing sectors; • Assess the impact of the proposed exclusion zones around the prospecting vessels and potential disturbance of fish on the fishing activities based on the estimated percentage loss of catch and effort; and • Make recommendations for mitigation measures that could be implemented to minimise or eliminate negative impacts on and enhance any benefits to the fishing industry.

(iv) Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

The impact assessment method SRK and the specialists will use during the Impact Assessment Phase is described in Section 2 (h)(vi).

(v) The proposed method of assessing duration significance

Refer to Section 2 (h)(vi)

(vi) The stages at which the competent authority will be consulted

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

- Pre-application;
- Scoping Phase; and
- Impact Assessment Phase.

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

1. Steps to be taken to notify interested and affected parties.

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

The stakeholder engagement process initiated during the Scoping Phase (see Section 2(h)(ii)) will continue in the Impact Assessment Phase of the EIA. The key activities planned during the Impact Assessment Phase are outlined in **Table 22**.

Table 22: Stakeholder engagement activities planned during the Impact Assessment Phase

Task	Objectives	Dates
Update stakeholder database	To register additional stakeholders identified throughout the S&EIR process	Throughout S&EIR process
Compile and release EIA Report for public comment period	To assess the impacts of the project and formulate mitigation measures and management plans.	Impact Assessment Phase

Public comment period	To provide stakeholders with the opportunity to review and comment on the results of the Impact Assessment Phase.	Impact Assessment Phase
Public open day/focus group meetings with key stakeholder groups	To discuss potential impacts of the project and findings of the studies. Key stakeholder groups will be identified based on findings of specialist studies and interest from stakeholders and include groups that might be significantly affected by the project as well as local and regional authorities.	Before and/or after the release of the EIA Report for public comment
Finalise EIA Report	To present the findings of the EIA process and incorporate stakeholder comment in the final report which provides DMR with information for decision-making.	Impact Assessment Phase

2. Details of the engagement process to be followed.

(Describe the process to be undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings and records of such consultation will be required in the EIA at a later stage).

Refer to **Appendix D**.

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

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

Refer to **Appendix D**.

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

The Impact Assessment Phase can be divided into key steps, namely:

- Consultation with relevant authorities;
- Specialist studies;
- Compilation of an EIA Report and an EMPr;
- Stakeholder engagement; and
- Submission of the Final EIA Report and EMPr to the competent authority, in this case DMR.

These are outlined in more detail below.

Consultation with the Relevant Authorities

Consultation will be conducted with DMR (Northern Cape) and other relevant authorities to clarify their requirements for the Impact Assessment Phase of the proposed development, other permit and licence applications for the project and to ensure that comments from the key authorities can be received in time to allow for them to be addressed in the EIA. The authorities (and other organs of state) that will be consulted include:

- DAFF: Marine Resources Management: Offshore and High Seas Fisheries
- Department of Environment and Nature Conservation_Northern Cape
- Department of Environmental Affairs and Development Planning (DEADP)
- Department of Environmental Affairs and Nature Conservation
- Department of Environmental Affairs and Nature Conservation_Kimberley
- Department of Forestry, Fisheries and the Environment (DFFE): Oceans & Coast
- Department of Forestry, Fisheries and the Environment (DFFE)_National
- Department of Forestry, Fisheries and the Environment (DFFE)_National_Forestry Management
- Department of Forestry, Fisheries and the Environment (DFFE)_Upington_Forestry Management
- Department of Public Works_Northern Cape
- Department of Rural Development and Land Reform
- Northern Cape Heritage Resources Agency
- South Africa Navy Hydrographic Office
- South African Heritage Resources Information System (SAHRIS)_National
- South African Maritime Safety Authority (SAMSA)
- South African National Biodiversity Institute (SANBI)
- Transnet National Ports Authority

Specialist Studies

Specialist assessments will be undertaken as part of the Impact Assessment Phase to investigate the key potential environmental issues and impacts identified during Scoping. These key issues and impacts have been identified based on:

- The legal requirements;
- The nature of the proposed activity;
- The nature of the receiving environment; and
- The professional experience of the EIA team.

The specialist studies are discussed in Section 2(i)(iii).

Compilation of the Environmental Impact Assessment Report

The compilation of the EIA Report and EMPr will include the following tasks:

- Assimilation of the specialist studies / input into the EIA Report and EMPr;
- Identification and assessment of environmental impacts based on the results of the specialist studies / input and professional judgment of the EIA team. This will entail an assessment of the duration, extent, probability and intensity of the impacts to determine their significance;
- Identification of mitigation measures and recommendations for the management of the proposed project to avoid and minimise environmental impacts and maximise benefits; and
- Collation of the above information into an EIA Report and EMPr for the design, construction and operational phases of the project.

Stakeholder Engagement

The key stakeholder engagement activities planned during the Impact Assessment Phase are outlined in **Appendix D**.

Submission of the Final EIA Report and EMPr to DMR

All comments received will be incorporated into the Issues and Responses Summary. The Final EIA Report (including the EMP) will then be submitted to DMR to inform their decision regarding environmental authorisation of the proposed development.

- (ix) **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 potential residual risks post-mitigation are presented in **Table 23**.

Table 23: Potential residual risk post-mitigation

Activities	Aspect	Potential Impact	Significance Without Mitigation	Significance Post Mitigation
Bulk sampling activities; and Geophysical sampling	Marine Ecology	Disturbance and/or impact on marine life as a result of normal discharges from survey and support vessels i.e. deck drainage, sewage and galley wastes.	<i>Medium (-ve)</i>	<i>Very Low (-ve)</i>
		Accidental spillage of oils and other hazardous materials from the survey and support vessels disturbing and/or killing marine fauna.	<i>Medium (-ve)</i>	<i>Medium-Term</i>
		Physical injury/mortality of marine life during as a result of survey and support vessel operation.	<i>Medium (-ve)</i>	<i>Low (-ve)</i>
		Potential impacts of multi-beam bathymetry and/or sub-bottom profiler pulses, noise and lightning resulting in marine fauna avoiding the area, masking environmental sounds/communication between animals. It may also lead to indirect impacts due to marine fauna being unaware of predators.	<i>Low (-ve)</i>	<i>Low (-ve)</i>
		Physical damage to the seabed, sediment structure alteration, alteration/reduction in benthic faunal community composition as a result of bulk sampling activities.	<i>Med (-ve)</i>	<i>Low (-ve)</i>
		Increased turbidity in the water during the re-deposition of tailings back to the seabed.	<i>Medium (-ve)</i>	<i>Insignificant (-ve)</i>
	Fisheries	Disruption of fishing activities/loss of access to fishing areas/loss of catch.	<i>Low (-ve)</i>	<i>Insignificant (-ve)</i>
	Archaeology/Palaeontology	Areas of archaeological/palaeontological importance may be disturbed, including shipwrecks.	<i>Low (-ve)</i>	<i>Low (-ve)</i>
	Marine Prospecting/Mining/Exploration	The presence of survey and support vessels may have an impact due to the legislative requirement of a 500 m safety zone around these vessels.	<i>Low (-ve)</i>	<i>Insignificant (-ve)</i>
	Marine Transport Routes	The presence of survey and support vessels may have an impact due to the legislative requirement of a 500 m safety zone around these vessels.	<i>Low (-ve)</i>	<i>Insignificant (-ve)</i>
	Socio-Economic	Creation of limited employment opportunities and limited revenues in local areas.	<i>Low (+ve)</i>	<i>Low (+ve)</i>

k) Other Information required by the competent Authority

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

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

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an Appendix (Not applicable).

Potential socio-economic impacts will be assessed by SRK specialists in the Impact Assessment Phase. High level socio-economic impacts and mitigation measures are included in **Table 14**.

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

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

A Marine Heritage Impact Assessment will be undertaken in the Impact Assessment Phase.

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

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as Appendix (Not applicable).

Section 2 of NEMA sets out a number of principles that are relevant to the:

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

This EIA process complies with the principles set out in section 2 of NEMA through its adherence to the EIA Regulations, 2014, and associated guidelines, which set out clear requirements for, inter alia, impact assessment and stakeholder involvement, and through the assessment of impacts and identification of mitigation measures during the Impact.

Assessment Phase.

Alternative will be considered in the Impact Assessment Phase (see Section 2 (h)(i)). The potential social and environmental impacts of the project will be identified, assessed and evaluated using SRK's standard impact assessment methodology (Section 2 (h)(vi)) to understand the significance of each positive and negative impact.

An EMPr will be compiled to ensure that potential environmental impacts are prevented or minimised.

Mitigation measures will be recommended in the Impact Assessment Phase to allow for unavoidable impacts on the environment and people's environmental rights to be minimised and remedied.

Multiple opportunities for public participation are allowed for in the EIA process.

The needs and interests of IAPs will be taken into account, with comments made by potentially affected property owners guiding the EIA process.

All relevant information will be made available for public comment before submission to DMR, as part of the public participation process.

Intergovernmental coordination for the purposes of this project will be facilitated by consultation with various government departments. Comments made by these departments will inform the decisions taken by DMR regarding Environmental Authorisation of the project.

m) UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I Ndivhudzannyi Mofokeng 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 environmental assessment practitioner:

NDI Geological Consulting Services-Sole Proprietary

Name of company:

27 August 2021

Date:

n) UNDERTAKING REGARDING LEVEL OF AGREEMENT

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



Signature of the environmental assessment practitioner:

NDI Geological Consulting Services-Sole Proprietary

Name of company:

27 August 2021

Date:

-END-

Appendices

Appendix A: The Qualifications of the Environmental Assessment Practitioner

**Appendix B: List of farm names on which proposed prospecting will occur
and 21 digit Surveyor General Code**

Appendix C: Location Map indicating Proposed Area

Appendix D: Public Participation Process