

EXECUTIVE SUMMARY: ENVIRONMENTAL IMPACT ASSESSMENT REPORT

DIAMOND MINING ACTIVITIES IN MARINE CONCESSIONS 11B AND 13B, WEST COAST, SOUTH AFRICA

DMPR REFERENCE 11B: WC30/5/1/2/3/2/1/10185MR

DMPR REFERENCE 13B: WC30/5/1/2/2/10186MR

SRK PROJECT NUMBER: 602978

AUGUST 2025

Note: All changes to the executive summary following public comment are italicised and underlined for ease of reference

1. INTRODUCTION

Trans Hex Operations (Pty) Ltd (THO) is applying for Diamond Mining Rights in terms of the Mineral and Petroleum Resource Development Act 28 of 2002 (MPRDA) in Marine Concessions 11B and 13B off the coast of the Western Cape, South Africa (the 'project' – see Figure 3).

THO has undertaken prospecting for diamonds in Marine Concessions 11B and 13B and has identified geological features expected to be favourable for diamond concentration. Offshore mining of marine diamond resources is proposed to extract and process these valuable minerals, for commercial sale. Diamonds are utilised in various industries, including jewellery, cutting and grinding tools, electronics, and high-performance bearings.

Marine Concession 11B is approximately 9 710 hectares (97.1 km²) extending from ~7 km south of Western Cape provincial boundary (near Lepelsfontein), southwards for ~30 km. Marine Concession 13B is approximately 3 980 hectares (39.8 km²), extending along the coast for ~12 km with the southern boundary at approximately the same latitude as Doringbaai. Both (B) concessions extend from 1 km seaward of the High Water Mark (HWM) to approximately 5 km offshore.

The Mining Right Application will be lodged in terms of the Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA), as amended. In terms of the Environmental Impact Assessment (EIA) Regulations, 2014, an application for a Mining Right requires Environmental Authorisation (EA) in terms of the National Environmental Management Act 107 of 1998 (NEMA).

SRK Consulting (South Africa) Pty Ltd (SRK) has been appointed by THO to undertake a Scoping and Environmental Impact Reporting (S&EIR, also referred to as EIA process). The EIA process, which is being undertaken in accordance with the EIA Regulations, 2014, is required to inform the application for EA in terms of NEMA and the Mining Right Application in terms of the MPRDA.

2. PROJECT DESCRIPTION

The proposed mining activities, which would extend over 35 years, include geophysical surveys, drill sampling and the deployment of seabed crawlers to systematically recover and process diamond-bearing sediments.

Geophysical surveying will be undertaken by the *MV Good Wind* (Figure 1) or similar vessel.



Figure 1: MV Good Wind

Ongoing surveys conducted during mining operations will include remote sensing and direct seabed sampling techniques such as echo-sounding, side-scan sonar, seismic profiling, drilling, and grabs. These methods generate data to produce detailed maps of seabed geomorphology, sediment and bedrock distribution, bathymetry, and sediment type and thickness.

Drill sampling activities will be undertaken using the *MV The Explorer* sampling vessel (Figure 2) or similar vessel, which can be operated in water depths up to 200 m. The sampling tool comprises a 2.5 m diameter drill bit operated from a drill frame structure, which is launched from the support vessel and positioned on the seabed.



Figure 2: MV Explorer

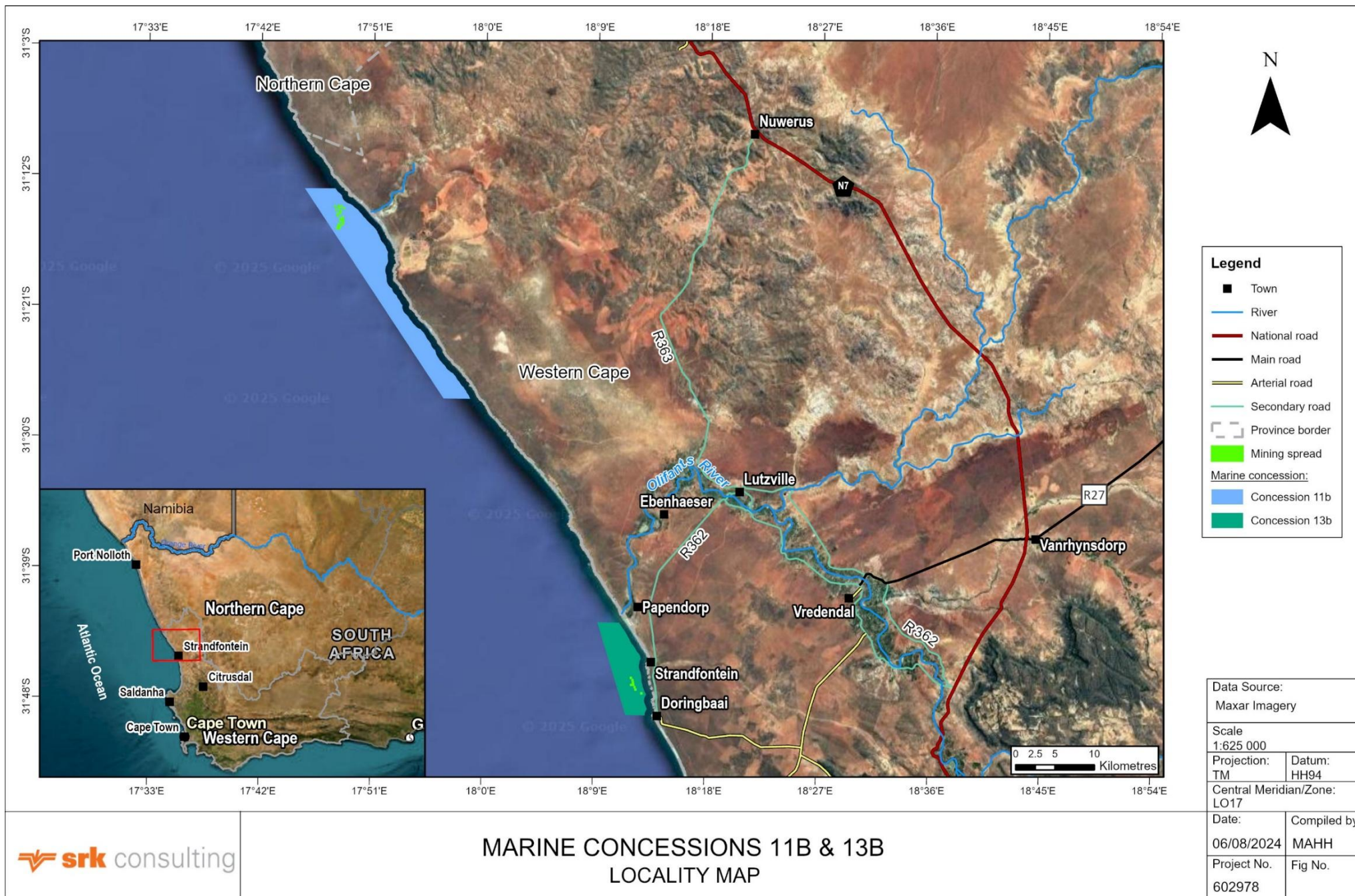


Figure 3: Locality map

The drill bit can penetrate sediments up to 12 m deep. The sediments are fluidised with water jets and airlifted to the support vessel where they are treated in the onboard mineral recovery plant. All oversized and undersized tailings are discharged back to the sea *in situ*. Up to 40 samples (spaced 50 m to 500 m apart) can be taken per day.

Mining will be undertaken by a track-mounted seabed crawler (Figure 4), capable of reaching depths of up to 200 m, deployed from the *MV Ya Toivo* mining vessel or similar vessel. Mining locations will be derived from the drill sampling results. The crawler is lowered to the seabed and is controlled remotely from the surface support vessel through power and signal cables. Water jets in the crawler's suction system loosen seabed sediments, and sorting bars filter out oversize boulders. The sampled sediments are pumped to the surface for shipboard processing.

The estimated area of seabed disturbance through mining will be 665 000 m² in Marine Concession 11B and 534 000 m² in Marine Concession 13B. Maximum annual seabed disturbance through mining will be approximately 67 000 m² per concession.



Figure 4: Seabed Crawler

Dredged sediment-slurry which is pumped to the surface, will be directed to a scalping and sizing screening module to divide the vessel feed into three sized fractions - *oversize fraction* (>22 mm), *plant feed fraction* (1.4 - 22 mm) and *undersize fraction* (<1.4 mm).

The *oversize fraction* is immediately discharged back to the sea through a special tailings moonpool system.

The *plant feed fraction* undergoes further processing, initially through a ball mill to break down shell and clay components. Following a de-sliming screening stage, this material is mixed with a ferrosilicon dense medium and pumped to a Dense Media Separation (DMS) plant. Here, low-density materials are separated and discarded, whilst the ferrosilicon is recovered and re-used. The high-density fraction, discharging from the DMS cyclone/s, is washed, then undergoes further cleaning, drying, and X-ray sorting to extract diamonds. Non-fluorescent material is recycled into the processing circuit, while the fluorescent fraction is

hand-sorted for diamonds onboard the mining vessel within fully protected glove boxes.

Under normal diamonds processing operations, the *undersize fraction* is discharged immediately overboard, via the tailings moonpool system. For bulk sampling this stream would first be diverted to a gravity concentration module, for the collection of higher density sediment samples (which would be exported and analysed ashore). The low-density stream from this module would be discharged immediately overboard.

Support vessels will provide spares, consumables, and bunkers while the mining vessel is operational. Crew changes, food supplies, and emergency equipment, including medical evacuations, are facilitated by helicopter.

The International Convention for the Prevention of Pollution from Ships (MARPOL) prescribes acceptable limits for the discharge of effluents and waste and emissions from vessels. Relevant limits would be adhered to for:

- Discharge of oily water and sewage (which would be treated onboard prior to discharge);
- Discharge of food waste at sea; and
- Emissions from vessel engines and onboard waste incinerators.

Other types of wastes generated during the bulk sampling activities will be transported onshore and recycled or disposed at an appropriately licensed disposal facility.

3. GOVERNANCE FRAMEWORK

MPRDA

THO requires Mining Rights in terms of the MPRDA. In support of the Mining Right Applications, THO is required to undertake an EIA process and to obtain an EA in compliance with the requirements of NEMA and the EIA Regulations, 2014.

NEMA and EIA Regulations

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, in this case, the National Department Mineral and Petroleum Resources (DMPR).

Listing Notice (LN) 1 and LN 3 list activities requiring a Basic Assessment (BA) process to be followed, and LN 2 lists activities requiring S&EIR.

The proposed project triggers activities listed in terms of LN 1 and LN 2 as described in Table 1. Consequently, THO is obliged to apply to DMPR for EA for the project.

Table 1: Listed activities triggered by the project

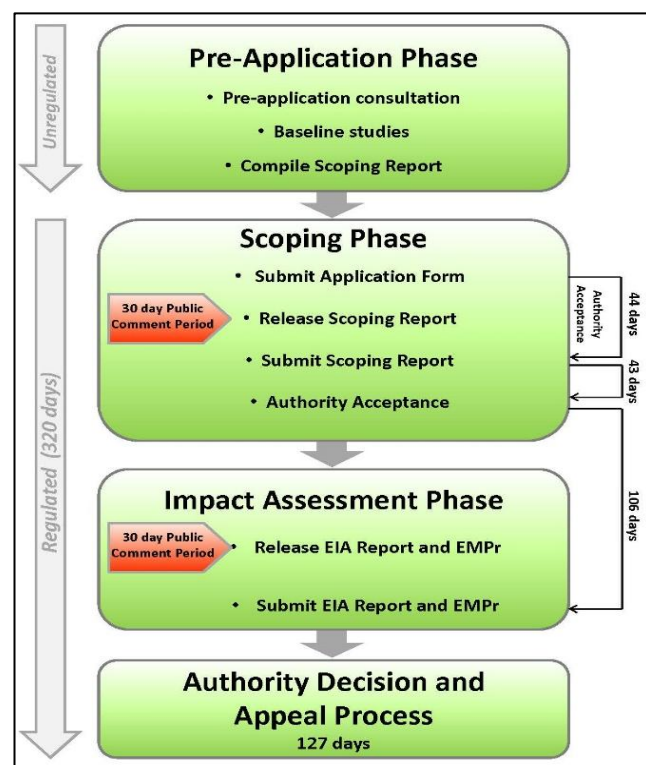
No	Description
LN 1 (requiring BA)	
19A	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from the sea.
LN 2 (requiring S&EIR)	
17	Any activity including the operation of that activity which requires a mining right in terms of section 22 of the MPRDA as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the mining right.

National Heritage Resources Act 25 of 1999 (NHRA)

The proponent is required to notify the South African Heritage Resources Agency (SAHRA) via the South African Heritage Resources Information System (SAHRIS) database of the proposed activities and then undertake any assessments deemed necessary by SAHRA. The assessment of heritage, archaeological and paleontological impacts will be undertaken as part of the EIA process.

4. ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The EIA Regulations, 2014 define the detailed approach to the S&EIR process, which consists of two phases: Scoping Phase and the Impact Assessment Phase (see Figure 5).

**Figure 5: S&EIR process**

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

The Scoping Phase was completed on 24 October 2024 and the Final Scoping Reports were accepted by the DMPR on 10 and 11 December 2024. The Impact Assessment Phase is

being undertaken in accordance with the Plan of Study for EIA, included in the Scoping Report accepted by the DMPR.

The key objectives of the EIA are to:

- Inform Interested and Affected Parties (IAPs) about the proposed Project and the EIA process followed;
- Obtain comments from IAPs (including the relevant authorities and the public) and ensure that all issues, concerns and queries raised are fully documented and addressed in the EIA Report;
- Identify and assess potential significant impacts associated with the proposed development;
- Formulate mitigation measures to avoid and/or minimise impacts and enhance benefits of the Project; and
- Produce the Final EIA Report which will provide all the necessary information for the DMPR to decide whether (and under what conditions) to authorise the proposed Project.

5. DESCRIPTION OF THE RECEIVING ENVIRONMENT

The continental shelf along the West Coast is generally wide and deep, although large variations in both depth and width occur. Concession 11B is characterized by an outcropping rocky seabed intersected by large and deep, drainage gullies and channels filled with unconsolidated sediments. Portions of Concession 13B share similar characteristics. The isolated rocky clusters in the northern quarter of Marine Concession 13B are either of low profile or partially covered by sediment, while the central reef is a prominent feature with high-profile reefs forming pinnacles and hollows. Two distinct sediment-filled palaeo channels dissect the concession: the northern Olifants palaeo-river valley off the current river mouth and the Sandlaagte palaeo-channel off Strandfontein. The morphology and orientation of these drainage gullies and channels, as well as the five sediment basins, are considered favourable environments for potential diamond concentration.

The concessions predominantly comprise Southern Benguela Sandy Shelves seabed type, with the deeper portions of Concession 13B comprising Southern Benguela Muddy Shelves. Coastal ecosystems inshore of Marine Concessions 11B and 13B are largely considered *Near Threatened* or *Vulnerable*.

The Benguela Current flows northwest along the coast, which contributes, together with upwelling of nutrient-rich waters, to high biological productivity.

The benthic habitats are rich in polychaetes, crustaceans, and molluscs, which are vital for ecological processes and serve as food for commercially valuable fish. Demersal fish species, including Cape hake and various sharks, inhabit the continental shelf.

Pelagic species, including plankton, cephalopods, marine mammals, and small pelagic fish like sardine and anchovy, thrive in the nutrient-rich waters. Larger migratory species, such as tunas and sharks, are also present.

Marine Concessions 11B and 13B do not overlap with any Marine Protected Areas, but fall within the transboundary Benguela Upwelling System Ecologically or Biologically Significant Area (EBSA), with the northern extent of Marine Concession 11B overlapping with the southern portion of the Namaqua Coastal Area EBSA.

Marine Concessions 11B and 13B overlap with proposed Marine Critical Biodiversity Areas (CBA) and Ecological Support Areas (ESA) proposed by the National Coastal and Marine Spatial Biodiversity Plan (NCMSBP). While there are several Important Bird Areas (IBA) in the region, none coincide with the Concessions.

The coastal area has a rich archaeological history, with evidence of human occupation dating back thousands of years. Several shipwrecks from the 18th and 19th centuries are located near the precinct, adding to its maritime heritage.

The project area is located along the coast of the Matzikama Local Municipality, within the West Coast District Municipality (WCDM). WCDM relies heavily on agriculture, mining, and tourism. The population is diverse, mostly living in formal dwellings. The agricultural sector is the primary sector for employment, with high unemployment rates among the youth. Approximately 5 700 individuals were employed in the fishing sector in WCDM in 2022.

Active fisheries within or near the precinct include:

- Small pelagic purse-seine vessels;
- Snoek, hottentot and yellowtail caught by the traditional/commercial linefishery;
- Snoek caught under tuna pole-and-line rights;
- Gillnet and beach-seine net fisheries;
- Rock lobster; and
- Kelp harvesting

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.

Mining Location Alternatives

THO has undertaken prospecting for diamonds and has identified geological features expected to be favourable for diamond concentration within Marine Concessions 11B and 13B. As the intention is to extract and process marine diamond resources within these concessions, no location alternatives are considered.

The exact locations of mining will be informed by the results of the historic as well as ongoing geophysical surveys and

drill sampling. Where practicable, the mining sites will be selected to avoid sensitive environments.

Technology Alternatives

Mining methods have been refined over many years of research and development by the mining industry and are the best methods for extraction of alluvial diamonds and are not readily substituted by other methods. Mining will be undertaken with existing vessels and equipment and as such technology alternatives are not considered.

No-Go Alternative

The No-Go alternative is considered in the EIA in accordance with the requirements of the EIA Regulations, 2014. The No-Go alternative implies no change to the status quo and thus no adverse marine ecology, socio-economic, and marine heritage impacts relative to the current situation. However, it precludes the potential socio-economic benefits of increased employment, income, skills development and economic stimulation, which are desired in terms of national policy and regional planning objectives.

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 National Appeal Regulations, 2014 and the Protection of Personal Information Act 4 of 2013 (POPIA).

The EIA Regulations, 2014, provides for, inter alia, transparent disclosure of the name and contact details of registered stakeholders and their comments, the opening and maintenance of a Registered Stakeholder (IAP) Database, and the compilation of an Issues and Responses Summary which must contain personal information (names and / or contact details). As of 1 July 2021, sections of POPIA which aims to promote protection of personal information, came into effect.

Therefore, registered stakeholders are deemed to give their consent for their name and contact details to be processed and disclosed, in fulfilment of the requirements of the EIA Regulations, 2014 and the National Appeal Regulations, 2014.

The key stakeholder engagement activities undertaken during the Impact Assessment Phase are summarised in Table 2 below.

Table 2: Stakeholder Engagement during Impact Assessment Phase

Activity	Date
Release EIA Report to the Public	12 June 2025
Comment period	12 June 2025 – 14 July 2025
Public open days	1 & 2 July 2025
Compile Issues and Responses Summary and Final EIA Report	By 25 July 2025

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

Key comments and concerns raised by stakeholders predominantly relate to:

- **Marine ecosystems:** *Potential damage to sensitive marine ecosystems, and the adverse effect of seabed disturbance, turbidity, pollution and noise on marine biodiversity;*
- **Olifants River Estuary:** *Concerns about the proximity of mining activities to the Olifants River Estuary, which serves as a vital breeding and nursery ground for marine species, including potential impacts on estuarine dynamics and sediment transport;*
- **Socio-economic impacts:** *Negative effects on local communities, particularly small-scale fishers who rely on the marine environment for their livelihoods, and potential harm to tourism, mariculture operations, and local industries such as fishing and aquaculture;*
- **Local fisher knowledge:** *Failure to obtain and integrate local fisher knowledge into the Fisheries Impact Assessment;*
- **Culture and heritage:** *Adverse effects on cultural heritage, traditional fishing practices, and the spiritual connection of local communities to the ocean;*
- **Public participation and consultation:** *Alleged inadequate notification, accessibility, and involvement of local communities, particularly disadvantaged groups, in the public participation process, raising concerns about transparency and inclusivity;*
- **Cumulative Impact Assessment:** *Alleged inadequate consideration of cumulative impacts from multiple mining and prospecting activities in the region; and.*
- **Rehabilitation and financial provision:** *Criticism of the lack of an annual rehabilitation plan, and inadequate financial provision for rehabilitation.*

8. ASSESSMENT OF POTENTIAL IMPACTS

Specialist studies were undertaken to investigate key potential direct, indirect and cumulative impacts, as follows:

- Marine Ecology Impact Assessment;
- Fisheries Impact Assessment;
- Socio-economic Impact Assessment; and
- Marine Heritage Impact Assessment.

For all potentially significant impacts, the significance of the anticipated impact was rated without and with recommended mitigation measures. These impacts are presented in Table 3.

The significance of potential impacts of the Project was determined in order to assist decision-makers. Relevant observations with regard to the overall impact ratings, assuming mitigation measures are effectively implemented, are:

- The predicted *marine ecology* impacts, mainly associated with the disturbance and/or mortality of marine fauna by noise, increased turbidity, discharge of ferrosilicon and crushing during sampling, as well as the alteration of benthic habitats by re-deposition of tailings during drill sampling are rated as *low* to *insignificant*.
- The predicted *fisheries* impacts, associated with temporary exclusion from fishing grounds or mariculture operations, noise effects on catch rates and sediment plumes adversely affecting fish stock recruitment or mariculture operations, are rated as *very low* or *insignificant*. Potential impacts will be temporary and reversible. Fisheries which may experience impacts include the small pelagic purse-seine, pole-and-line, traditional linefish, west coast rock lobster, beach-seine, gillnet fisheries, small-scale fisheries and fisheries research activities.
- The predicted *socio-economic* benefits (increased employment, income, skills development and economic stimulation) are rated as *high*. The predicted adverse *socio-economic* impacts (on fisheries, tourism, aquaculture and sense of place) are rated as *low* or *very low*.
- The predicted *marine heritage* impacts, associated with the disturbance or recovery/discovery, recording and conservation of fossils and submerged prehistoric archaeology, are rated as *high* or *medium positive* impacts. If mitigation measures are implemented to identify, recover and safeguard any palaeontological or archaeological material found, the gain in knowledge can be considered a positive outcome.

Cumulative impacts in the region may derive from existing and future prospecting and mining activities, fishing and vessel traffic. The incidence and frequency of prospecting and mining activity along the South African coast are still relatively low, and significant cumulative impacts are only expected if simultaneous prospecting and/or mining take place in relatively close proximity to each other and/or shortly after each other, which is deemed unlikely at present.

Table 3 below summarises:

- The impacts assessed in the EIA; and
- Their significance before and following the implementation of essential mitigation measures, on which the significance rating is based;

Impact Significance Ratings Legend:

Rating	+ve	-ve
Insignificant	I	I
Very Low	VL	VL
Low	L	L
Medium	M	M
High	H	H
Very High	VH	VH

Table 3: Summary of Impacts

Impact	Significance rating	
	Without mitigation	With mitigation
OPERATION PHASE IMPACTS		
Disturbance of marine fauna by the noise generated from survey equipment	VL	I
Marine pollution affecting marine fauna	VL	VL
Disturbance and mortality of benthic fauna during mining	L	L
Disturbance of marine fauna due to increased turbidity and reduced light penetration	I	N/A
Alteration of benthic habitats by re-deposition of tailings during mining	L	N/A
Marine pollution from discharge of ferrosilicon affecting marine fauna	VL	I
Disturbance and damage to seabed habitats and fauna due to equipment lost to the seabed.	VL	I
Accidental spillage of fuel and/or hydraulic oils affecting marine fauna and flora	L	I
Temporary exclusion from fishing grounds	VL	I
Noise effects on catch rates	VL	I
Sediment plumes adversely affecting fish stock recruitment	VL	N/A
Impacts on mariculture operations	VL	I
Increased employment, income and skills development	L	H
Reduced catch by small-scale fishing sector	L	VL
Altered sense of place and visual intrusion from mining activities	L	N/A
Disruption of tourism activities due to impact on marine fauna, altered sense of place and reduced fishing catch rates	L	N/A
Loss of income due to disruption of aquaculture operations by increased turbidity	VL	N/A
Stimulation of the economy	H	H
Disturbance of fossils	H	H
Disturbance of submerged prehistoric archaeology	M	M

Key recommendations, which are considered essential, are:

- Implement the EMPr to guide operations and to provide a framework for the ongoing assessment of environmental performance.
- Appoint a trained Marine Mammal Observer (MMO) to ensure compliance with mitigation measures during acoustic geophysical surveying.
- Ensure implementation of onboard waste management plans and compliance with MARPOL standards.
- Avoid mining in the immediate vicinity of outcropping and sub-cropping reef areas or other identified sensitive habitats.
- Ensure that vessels operate in accordance with South African Maritime Safety Authority (SAMSA) safety regulations to minimise risks of accidents.
- Conduct offshore refuelling operations in accordance with the applicable SAMSA requirements and permit conditions.
- Ensure that the vessel operator has prepared and implemented a Shipboard Oil Pollution Emergency Plan and an Oil Spill Contingency Plan.
- Notify and engage with key identified fishing industry associations and stakeholders, including local small-scale fishing cooperatives prior to mining.
- Ensure that THO's Corporate Social Responsibility (CSR) programme, includes initiatives for skills development relevant to prospecting and mining;
- Implement measures to identify, recover, and safeguard any palaeontological or archaeological material found.

9. CONCLUSIONS AND WAY FORWARD

This *Final* EIA Report has identified and assessed the potential biophysical and socio-economic impacts associated with the proposed Diamond Mining in Marine Concessions 11B and 13B off the Western Cape Coast of South Africa.

SRK believes that sufficient information is available for the DMPr to take a decision regarding the authorisation of the mining activities.

The proposed mining will result in unavoidable adverse environmental impacts, although these are of relatively limited extent given the limited footprint of the disturbed area (665 000 m² in Marine Concession 11B [0.7% of the concession] and 534 000 m² in Marine Concession 13B [1.3% of the concession]) and are transient in nature (no physical infrastructure will be installed). Consequently, none of these adverse impacts are considered unacceptably significant and all can be managed to tolerable levels through the effective implementation of the recommended mitigation measures.

Working on the assumption that THO is committed to ensuring that the mining is undertaken to high standards, achieved through the implementation of the recommended mitigation measures and ongoing monitoring of

performance, SRK believes and the EIA Report demonstrates that through effective implementation of the stipulated mitigation measures, the adverse impacts can be reduced to levels compliant with national (and international) standards or guidelines.

SRK believes that the specialist studies have shown that the proposed mining is generally acceptable. The EIA has also assisted in the identification of essential mitigation measures that will mitigate the impacts associated with these components to within tolerable limits.

In conclusion SRK is of the opinion that on purely 'environmental' grounds (i.e. the project's potential socio-economic and biophysical implications) **non-destructive prospecting should be approved for the whole of Marine Concession 11B and 13B, and destructive prospecting and mining should be approved for the sections of the concessions that are not proposed as CBAs**, provided the essential mitigation measures are implemented. **Furthermore, DMPR will need to decide whether destructive prospecting and mining should be authorised within the sections of the concessions that are proposed as CBAs**, taking account of the draft (non-binding) status of NCMSBP sea-use guidelines as well as the predicted *insignificant* or *low* significance of impacts of mining on marine ecology.

Ultimately, DMPR will need to consider whether the project benefits outweigh the potential impacts. If approved, it is SRK's opinion that the authorisation should be valid for a period of 10 years.

WAY FORWARD

This Final EIA Report is now being submitted to DMPR for decision making. Stakeholders will be informed when the Final EIA Report is submitted to DMPR, and the Final EIA Report, including the Issues and Response Summary will be uploaded onto SRK's website for information. Once a decision is taken by authorities, this decision *and the associated appeal procedure* will be communicated to all registered IAPs.