



**MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA**

Reference: LSA 254441

CONSOLIDATED APPEAL DECISION

**APPEALS AGAINST THE ENVIRONMENTAL AUTHORISATION GRANTED TO SEARCHER
GEODATA UK LIMITED FOR THE PROPOSED THREE-DIMENSIONAL SEISMIC SURVEY OFF THE
WEST COAST OF SOUTH AFRICA**

Danne Joubert	1st Appellant
Michele Rivarola	2nd Appellant
Kate Teesdale	3rd Appellant
Lisa Cloete	4th Appellant
WildTrust	5th Appellant
Environmental Traits Association	6th Appellant
Spirit of Endeavour Fisherfolk Women	7th Appellant
Aukotowa Fisheries Primary Cooperative Ltd	8th Appellant
Oceans Not Oil Coalition	9th Appellant
Natural Justice and The Green Connection	10th Appellant

Searcher Geodata UK Limited	Applicant
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Department of Mineral and Petroleum Resources	Competent Authority
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APPEALS AGAINST THE ENVIRONMENTAL AUTHORISATION GRANTED TO SEARCHER GEODATA UK LIMITED FOR THE PROPOSED THREE-DIMENSIONAL SEISMIC SURVEY OFF THE WEST COAST OF SOUTH AFRICA

Appeal: These appeals are lodged against the decision taken by the Acting Director-General (DG) of the Department of Mineral and Petroleum Resources (DMPR) (previously the Department of Mineral Resources and Energy), on 21 October 2024, to grant an environmental authorisation (EA) to Searcher Geodata UK Limited (the applicant) for listed activities pertaining to the proposed three-dimensional (3D) seismic survey over a number of petroleum licence blocks located approximately 256km offshore of St. Helena Bay and extending north to approximately 220km offshore of Hondeklip Bay, off the West Coast of South Africa.

1 BACKGROUND AND APPEAL

Introduction

- 1.1 At the outset, it is necessary to outline the relevant historical and regulatory background to the application for environmental authorisation that forms the subject matter of this appeal. The background summary that follows is drawn from the application documentation and supporting information submitted by Searcher Geodata UK Limited (the applicant) to the Department of Mineral and Petroleum Resources (DMPR) (competent authority) as part of the application for environmental authorisation and that forms part of the appeal record.

Historical Background

- 1.2 In or during 2021, the applicant undertook a seismic survey project and submitted an Environmental Management Programme (EMPr) to the DMPR (competent authority) in support of its Reconnaissance Permit with reference number 12/1/038. The Orange Basin 2D and 3D Seismic Survey constituted a multi-client 2D and 3D programme off the West Coast of South Africa, covering an area of approximately 297 089 km². The survey was purportedly terminated prior to completion following a legal challenge concerning the validity of the exploration permit. Consequently, the Reconnaissance Permit expired before the survey could be completed, with only a limited portion of the survey having been undertaken. Survey operations ceased following an interim court interdict against the survey vessel.

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- 1.3 Following the expiration of Reconnaissance Permit No. 12/1/038, the applicant pursued a further seismic survey programme. In or during 2022, the applicant proposed undertaking a 3D seismic survey over a smaller area, located further offshore off the West Coast of South Africa, extending from approximately 256km offshore of St Helena Bay to 220 km offshore of Hondeklip Bay. The closest point of the survey area was approximately 218 km offshore of the coast of the Western Cape and Northern Cape Provinces. The applicant applied for an environmental authorisation (EA) to undertake the proposed seismic activity as part of its Reconnaissance Permit with reference number 12/1/043. On 20 December 2022, the competent authority (CA) granted the applicant an environmental authorisation to undertake the proposed activity under reference number 12/1/043. The decision to grant the environmental authorisation was subsequently appealed against and my predecessor, Minister Barbara Dallas Creecy, dismissed the appeals on 23 September 2023 under reference number LSA 226116.
- 1.4 Although the application area encompassed approximately 30 000km², the applicant committed to acquiring up to 10 000 km² 3D seismic data, of which approximately 9 000 km² was ultimately surveyed. The full survey of 10 000km² could not be completed due to constraints relating to vessel availability, viable acquisition windows, and seasonal survey window limitations restricting the operations to the period between January to April).
- 1.5 A reconnaissance permit is valid for a period of one (1) year. Reconnaissance Permit Number 12/1/043 was therefore due to expire on 10 November 2024. In anticipation of its expiry, the applicant submitted a fresh application in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) for a new reconnaissance permit in respect of substantially the same activity and survey area previously authorised under Reconnaissance Permit Number 12/1/043.

The Application for Environmental Authorisation

- 1.6 On 28 May 2024, the applicant lodged an application for an environmental authorisation with the CA for listed activities associated with the proposed seismic survey activity. The

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application for environmental authorisation was submitted and processed in terms of the Environmental Impact Assessment Regulations, 2014, as amended (EIA Regulations), promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended (NEMA).

1.7 In terms of the application:

- 1.7.1 The area of interest for the proposed 3D seismic survey entails approximately 30 000 km² in extent. However, approximately 9 000 km² of the survey area, predominantly within the northern section, was surveyed during the 2024 survey season and will accordingly be excluded from full Power-Sourced data acquisition during the proposed survey period.
- 1.7.2 The survey method remains unchanged from that previously assessed and authorised and will involve a single survey vessel equipped with seismic sources and streamers, supported by one escort vessel.
- 1.7.3 Survey lines are anticipated to follow either a north-east to south-west or south-east to north-west orientation.
- 1.7.4 The 3D survey will take approximately 127 days to complete, inclusive of operational downtime.
- 1.7.5 Survey activities are proposed to be undertaken during the revised survey period of late December to May.
- 1.7.6 Any acquisition undertaken in late December must be supported by Passive Acoustic Monitoring (PAM) and should commence in the northern portion of the survey area and proceed southwards in accordance with specialist recommendations.

1.8 The applicant commissioned Environmental Impact Management Services (Pty) Ltd (EIMS) as the Environmental Assessment Practitioner (EAP) to conduct the Basic Assessment (BA) process for the abovementioned application.

1.9 On 08 August 2024, the EAP submitted the final Basic Assessment Report (BAR) and Environmental Management Programme (EMPr), prepared in support of the environmental authorisation application, to the CA for their consideration and decision-making.

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The Environmental Authorisation Decision

- 1.10 On 21 October 2024, after evaluating the final BAR and all relevant information submitted in support of the above application, the CA granted the environmental authorisation to the applicant under reference number 12/1/048.
- 1.11 On 24 October 2024, the applicant informed the registered interested and affected parties (I&APs) of the granted environmental authorisation, provided them with a copy of the environmental authorisation and informed them of their right to appeal against the granted environmental authorisation.

The Appeal Process

- 1.12 Section 43(1A) of NEMA provides:
“Any person may appeal to the Minister against a decision made in terms of this Act or any specific environmental management Act by the Minister responsible for mineral resources or any person acting under his or her delegated authority”.
- 1.13 Regulation 4(1) of the National Appeal Regulations, 2014 (2014 Appeal Regulations) provides that an appellant must submit an appeal within 20 calendar days from the date that the notification of the decision for an application for environmental authorisation was sent to registered interested and affected parties by the applicant.
- 1.14 Accordingly, the prescribed 20-day timeframe for submission of an appeal against the environmental authorisation was due to lapse on 13 November 2024.

The Submitted Appeals

- 1.15 The Directorate: Appeals and Legal Review (Appeals Directorate) in the Department of Forestry, Fisheries and the Environment (the Department/ DFFE) received the following

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appeals in opposition to the grant of the environmental authorisation to the applicant:

- 1.15.1 On 25 October 2024, from Danne Joubert from the Cederberg Municipality (first appellant);
 - 1.15.2 On 31 October 2024, from Michele Rivarola (second appellant);
 - 1.15.3 On 13 November 2024, from Kate Teesdale (third appellant);
 - 1.15.4 On 13 November 2024, from Lisa Cloete (fourth appellant);
 - 1.15.5 On 13 November 2024, from WildTrust (fifth appellant);
 - 1.15.6 On 13 November 2024, from Environmental Traits Association (sixth appellant);
 - 1.15.7 On 13 November 2024, from Spirit of Endeavour Fisherfolk Women (seventh appellant);
 - 1.15.8 On 13 November 2024, from Aukotowa Fisheries Primary Cooperative Ltd (eighth appellant);
 - 1.15.9 On 13 November 2024, from Oceans Not Oil Coalition (ninth appellant); and
 - 1.15.10 On 13 November 2024, from Natural Justice and The Green Connection (and endorsed by Project 90 by 2030 ("Project 90") (tenth appellant).
- 1.16 The above appeals were lodged in accordance with the provisions of section 43(1A) of NEMA, read together with regulation 4 of the National Appeal Regulations, 2014 (2014 Appeal Regulations).
- 1.17 On 11 November 2024, the Appeals Directorate received an appeal from Michele Jankelow. The appeal was not submitted on the prescribed form and can therefore not be considered. In this regard, section 43(4) of NEMA prescribes that an appeal submitted under subsection (1), (1A) or (2) of the Act must be noted and must be dealt with in the manner prescribed and upon payment of a prescribed fee.
- 1.18 Section 43(4) of NEMA prescribes:
"An appeal under subsection (1), (1A) or (2) must be noted and must be dealt with in the manner prescribed and upon payment of a prescribed fee."

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- 1.19 The 2014 Appeal Regulations regulates the procedure contemplated in section 43(4) of NEMA relating to the submission, processing and consideration of, a decision on an appeal submitted prior to 13 March 2025.
- 1.20 Regulation 4 of the 2014 Appeal Regulations regulates the submission of appeals. Regulation 4(2)(a) materially prescribes that an appeal submission must, among others, be submitted in writing in the form obtainable from the appeal administrator.
- 1.21 Compliance with the prescribed form is not a mere procedural formality. It constitutes a mandatory requirement prescribed by the Appeal Regulations for the valid noting of an appeal. The prescribed form serves to ensure that appeals are submitted in a consistent manner and contain the information necessary for their proper administration and consideration.
- 1.22 As Ms. Jankelow did not submit her appeal on the prescribed appeal form, the purported appeal does not comply with the requirements of section 43(4) of NEMA read with regulation 4(2)(a) of the Appeal Regulations. In the circumstances, the submission cannot be regarded as a valid appeal contemplated in section 43 of NEMA and is accordingly not capable of consideration by me as Appeal Authority.
- 1.23 The appeals are premised on the following grounds:
- 1.23.1 Climate change, full life cycle assessment, need and desirability, and the no-go alternative;
 - 1.23.2 Marine ecology and underwater noise;
 - 1.23.3 Socio-economic impacts and fisheries;
 - 1.23.4 Cultural heritage;
 - 1.23.5 Inadequate public participation process;
 - 1.23.6 Competent authority conflict of interest, inadequate environmental assessment procedures, and failure to comply with mandatory procedural requirements;
 - 1.23.7 Petroleum Agency South Africa's (PASA's) acceptance of reconnaissance permit application was unlawful, no statutory basis for speculative multi-client seismic

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survey; and

1.23.8 Decision made in policy vacuum.

The Responding Statement

- 1.24 On 15 November 2024, the competent authority, Petroleum Agency SA (PASA), and applicant were notified of the appeals, provided with copies thereof and requested to provide a responding statement.
- 1.25 In terms of regulation 5 of the 2014 Appeal Regulations, the applicant, the decision maker, interested and affected parties and organs of state must submit their responding statement, if any, within 20 calendar days from the date of receipt of the appeal submission.
- 1.26 Accordingly, the regulated 20-day timeframe for the submission of a responding statement was due to lapse on 05 December 2024.
- 1.27 On 5 December 2024, the applicant submitted its consolidated responding statement to the Appeals Directorate.
- 1.28 On 14 January 2025, the Appeals Directorate received a consolidated responding statement from PASA in respect of the appeals. The responding statement was submitted outside of the prescribed 20-day timeline under regulation 5 of the Appeal Regulations. Accordingly, on 20 January 2025, PASA submitted a request for condonation for the late filing of its responding statements.
- 1.29 While I am aware that PASA is not the competent authority responsible for the decision under appeal, it performs a technical and advisory role within the petroleum regulatory framework and provides recommendations to the competent authority regarding applications for petroleum rights and related environmental approvals. The competent authority is nevertheless required to exercise its own discretion and remains responsible for the final decision. PASA's submission in the present appeal is therefore considered as a responding

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statement submitted by an organ of state with responsibilities relevant to the subject matter of the appeal, and not as a submission made on behalf of the competent authority.

- 1.30 Given that condonation for the late submission of the PASA's responding statement is a procedural pre-requisite to its consideration, it is appropriate that I first adjudicate PASA's request for condonation before adjudicating the grounds of appeal. I proceed to do so.

PASA'S APPLICATION FOR CONDONATION

Legislative Framework Governing Condonation of timeframes applicable to appeals on mining and mining related matters

- 1.31 Section 47CB of NEMA provides for the condonation of time periods applicable to appeals relating to prospecting, exploration, mining or production. It states:
- (1) *The Minister may only in exceptional circumstances extend or condone a failure by a person to comply with a time period applicable to an appeal contemplated in section 43(1A), except for a time period which binds the Minister.*
 - (2) *The Minister may not accept an application for condonation to submit an appeal contemplated in section 43(1A) after 30 days has lapsed from the date of the decision by the Minister responsible for mineral resources or any person acting under his or her delegated authority.*
 - (3) *When considering an extension or condonation the Minister must consider the following factors:*
 - (a) *The degree of lateness;*
 - (b) *A detailed explanation of the reasons for the lateness;*
 - (c) *Whether and to what extent that person or the Minister responsible for mineral resources will suffer prejudice if the time period is extended or failure to comply with a time period is condoned; and*
 - (d) *A detailed explanation of the merits of the application for extension or condonation.*
 - (4) ***The time period may only be condoned for a maximum period equal to the time period allowed for the action for which condonation is sought in terms of this Act.***

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- 1.32 PASA submitted as follows: it was required to respond to multiple appeals lodged against granted environmental authorisations. As the timeframes for these appeals was running concurrently, it was unable to submit responding statements in respect of all the appeals within the prescribed statutory timeframe.
- 1.33 On 22 January 2025, the applicant and the appellants were furnished with a copy of the condonation application for their responses thereto.
- 1.34 On 22 January 2025, the second appellant objected to the application, stating that:
- 1.34.1 It does not matter what they say, as the Department never listens to their concerns. The only time the Department listens is when they are taken to court.
- 1.34.2 It is suggested that the Department and I familiarise ourselves with what the Constitution and the Bill of Rights states about environmental rights as it is our duty to protect the environment for this and future generations. Instead all we do is glibly approve one oil and gas exploration application after the other protecting commercial interests ahead of any other right and only balk once we are in court wasting taxpayers' money attempting to defend the indefensible.
- 1.34.3 Interested and affected parties (I&APs) are never given the benefit of any condonation when submitting appeals outside the prescribed timeframe, but are instead disqualified for filing late appeals. Fairness requires the consistent application of the same standard to all parties.
- 1.35 On 23 January 2025, the applicant indicated that they do not object to the request.
- 1.36 On 27 January 2025, Natural Justice and The Green Connection (the tenth appellant) indicated that they did not intend to oppose PASA's application for condonation.
- 1.37 No responses were received from the remaining appellants.

Evaluation of Condonation Application

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- 1.38 I considered the applicant's request for condonation for the late submission of its responding statement, against the abovementioned statutory framework.

Exceptional Circumstances- section 47CB(1) of NEMA

- 1.39 Section 47CB(1) of NEMA permits condonation only in exceptional circumstances. PASA has attributed the late submission of its responding statement to the multiple appeals lodged against oil and gas environmental authorisations, with overlapping appeal timeframes, which it states prevented it from submitting responding statements in respect of all the appeals within the prescribed timeframe.
- 1.40 In assessing whether the circumstances advanced by PASA constitute exceptional circumstances, I have had regard to the number, volume and technical complexity of the appeals, as well as the extent to which these factors affected PASA's ability to prepare and submit its responding statement within the prescribed timeframe.
- 1.41 I have considered the second appellant's objection that fairness requires the same standard to be applied to all parties seeking condonation. That principle is accepted. However, section 47CB expressly empowers the Appeal Authority to grant condonation where the statutory requirements are satisfied. Whether condonation is granted in any particular matter depends on the circumstances of that matter and the application of the prescribed statutory criteria. The question before me is therefore not whether PASA should be treated differently from other parties, but whether PASA has established grounds for condonation in accordance with section 47CB of NEMA.
- 1.42 Although PASA's explanation is brief, it indicates that the delay arose from concurrent obligations to prepare responses in several appeals concerning oil and gas authorisations. In assessing the explanation, I have also had regard to the appeal record in this matter, which reflects that ten (10) appellants lodged extensive and technically complex submissions requiring a detailed response. The delay therefore appears to have arisen from the practical

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demands associated with preparing substantive responses to multiple complex appeal processes rather than from neglect or disregard of the prescribed procedures.

- 1.43 I am satisfied that the delay arose from the practical demands associated with preparing substantive responses to multiple appeal processes concerning oil and gas authorisations, rather than from neglect or indifference to the statutory timeframes. Having regard to the volume and complexity of the appeal submissions in this matter and the explanation provided by PASA, I am satisfied that exceptional circumstances, as contemplated in section 47CB(1) of NEMA, have been established.

Degree of Lateness

- 1.44 The duration of the delay in submitting the responding statement was 18 days, calculated from 05 December 2024 until 14 January 2025 (excluding the period from 15 December to 5 January, in accordance with regulation 1(2) of the 2014 Appeal Regulations).
- 1.45 Section 47CB(4) of NEMA limits the time period which may be condoned, in the circumstances contemplated by that provision, to a maximum period of 20 days. PASA's delay of 18 days falls within this period.

Explanation for the delay

- 1.46 PASA attributes the delay in submitting its responding statement to the multiple appeals lodged against oil and gas environmental authorisations, with overlapping appeal timeframes, which it avers prevented it from submitting responding statements in respect of all the appeals within the prescribed timeframe. I have already found that PASA had to prepare substantive responses to multiple appeal submissions within a limited period. I am accordingly satisfied with the explanation for the duration of the delay.

Prejudice

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- 1.47 There is no indication on the information before me that either the appellants, the applicant or the competent authority would suffer material prejudice if condonation were granted. The condonation application concerns the procedural admissibility of PASA's responding statement and does not alter the substantive grounds of appeal or deprive any party of rights already exercised in the appeal process. The appellants' appeals will still be considered on their merits. Conversely, PASA may suffer prejudice if its responding statement is not considered, as it would be deprived of an opportunity to address the submissions raised in the appeal and to fully present its case to the Appeal Authority.
- 1.48 I have considered the second appellant's objection to PASA's application for condonation. The objection is based primarily on the contention that interested and affected parties are not ordinarily afforded condonation when appeals are submitted outside the prescribed timeframes and that fairness requires the same standard to be applied to all parties. I agree that condonation applications must be considered consistently and in accordance with the applicable legal framework. However, fairness does not require that condonation be refused merely because a different applicant may previously have failed to satisfy the statutory requirements for condonation. Section 47CB requires each application to be determined on its own merits with reference to the factors prescribed therein, namely exceptional circumstances, the degree of lateness, the explanation for the delay, prejudice and the merits of the application. The fact that condonation may have been refused or granted in other matters does not relieve the Appeal Authority of its obligation to assess the present application against those criteria.
- 1.49 I have also considered the second appellant's broader concerns regarding environmental governance and the protection of environmental rights. While those concerns are noted, they relate primarily to the merits of the appeals and the lawfulness of decisions concerning oil and gas activities. They do not establish prejudice arising from the late filing of PASA's responding statement, nor do they provide a basis for refusing condonation under section 47CB. The question before me at this stage is a procedural one, namely whether the late filing of PASA's responding statement should be condoned having regard to the statutory criteria.

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- 1.50 Beyond the second appellant's objection in principle to the granting of condonation, no party identified any specific prejudice that would arise if the late filing were condoned. The condonation application was circulated to all parties for comment and interested parties were afforded an opportunity to object. The granting of condonation will not deprive any party of an opportunity already exercised, nor will it prevent the appeals from being considered on their merits. By contrast, PASA may suffer prejudice if its responding statement is excluded from consideration.

Merits of the condonation application

- 1.51 Under this criterion, I am required to consider whether the responding statement provides information that will materially influence the outcome of the decision. The responding statement addresses substantive issues raised in the appeals and may assist in assessing the factual and technical matters in dispute. The consideration of those submissions is therefore capable of contributing meaningfully to a fully informed determination of the appeals. This weighs in favour of granting condonation.

Conclusion

- 1.52 Having duly considered the reasons advanced by PASA in its condonation application, the responses thereto by the applicant and the appellants, and the criteria prescribed in section 47CB of NEMA, namely, exceptional circumstances, the degree of lateness, the explanation for the delay, the issue of prejudice, and the merits of the condonation application, I am of the view that it would not be in the interests of justice to refuse condonation in this matter. My reasons are as follows:

1.52.1 PASA has furnished a reasonable explanation for the late submission of its responding statement.

1.52.2 The delay of 18 days falls within the maximum period capable of being condoned in terms of section 47CB(4) of NEMA.

1.52.3 I am satisfied that exceptional circumstances, as contemplated in section 47CB(1) of

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NEMA, have been established.

1.52.4 I have considered the second appellant's objection that fairness requires the same approach to condonation applications irrespective of the identity of the applicant. However, fairness is achieved through the consistent application of the statutory criteria contained in section 47CB of NEMA. Having applied those criteria to the circumstances of this matter, I am satisfied that the objection does not provide a basis for refusing condonation.

1.52.5 There is no indication that any party will suffer material prejudice should condonation be granted, whereas PASA may suffer prejudice if its responding statement is excluded from consideration.

1.52.6 The responding statement addresses substantive issues raised in the appeals and may assist in reaching a fully informed determination of the issues in dispute.

1.53 In light of the above, PASA's request for condonation for the late filing of its responding statement is granted. PASA's responding statement will thus be considered in the determination of this appeal.

1.54 Having condoned the late filing of the PASA's responding statement, I now proceed to consider the appellants' appeals.

Preliminary Issue: Mandate to Act on Behalf of Other Persons

1.55 In its appeal, the ninth appellant, Oceans Not Oil Coalition, states that it represents a number of communities and organisations situated along South Africa's coastline, including communities and organisations on the north-east, east and west coasts. In the cover letter accompanying its appeal, the ninth appellant further states that it comprises a coalition of forty (40) organisations and individuals whose stated objective is to oppose seismic exploration and oil and gas exploitation off South Africa's coastline.

1.56 In its appeal, the tenth appellant, Natural Justice and The Green Connection, contends that it is entitled to lodge the appeal in terms of section 43 of NEMA, and further asserts that it acts

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in the interests of, or on behalf of, persons who are unable, for practical reasons, to institute such proceedings themselves, including members of affected coastal communities who lack the capacity or resources to do so; in the interests of coastal communities whose rights or interests may be affected by the proposed seismic survey; in the public interest; and in the interest of protecting the environment, thereby giving effect to section 24 of the Constitution.

- 1.57 In response to these assertions, the applicant contends that, to the extent the ninth and tenth appellants purport to act on behalf of communities, organisations, or other persons, they have not provided documentary proof demonstrating their authority to do so. The applicant refers me to the judgment of the Supreme Court of Appeal in *Khoin and Others v Jenkins and Others; In re: Observatory Civic Association and Another v Trustees for the time being of the Liesbeek Leisure Properties Trust and Seven Others*¹ (the *River Club* judgment), which it avers dealt with misrepresentations of authority to represent communities and/or certain groups within communities. The applicant accordingly contends that any claim to represent such persons or entities should not be accepted in the absence of an appropriate mandate.
- 1.58 It is not necessary for me to determine whether the ninth and tenth appellants have established authority to act in a representative capacity on behalf of every person, organisation or community referred to in their appeals. Section 43(1A) of NEMA provides that: *"Any person may appeal to the Minister against a decision made in terms of this Act or any specific environmental management Act by the Minister responsible for mineral resources or any person acting under his or her delegated authority."*
- 1.59 Accordingly, irrespective of any representative capacity claimed by the ninth and tenth appellants, I am satisfied that the ninth and tenth appellants are entitled to lodge appeals in their own names in terms of section 43(1A) of NEMA.
- 1.60 Accordingly, I have considered the appeals as having been submitted by Oceans Not Oil Coalition and Natural Justice and The Green Connection in their own right, and not in a representative capacity on behalf of unidentified individuals or communities. To the extent that

¹ [2022] ZAWCHC 227.

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either appellant purports to act on behalf of additional persons, organisations or communities, it is unnecessary for me to make any finding regarding the existence or scope of such authority for purposes of determining these appeals

The Approach to the Appeals

- 1.61 At the outset, I note that a significant number of the grounds of appeal raised in the present appeals substantially replicate issues that were raised by the appellants in the appeals lodged against the CA's decision of 20 December 2022, to grant an environmental authorisation to the applicant under reference number: 12/1/043, in respect of substantially the same seismic survey activity and survey area. Those appeals were determined under Appeal Decision reference number: LSA 226116. Consequently, portions of the evaluation set out below reflect considerations similar to those relied upon by my predecessor in determining the earlier appeals. It may appear that I repeat many of the issues that guided my predecessor's assessment of the grounds of appeal in the previous appeal, and in certain instances adopt, aspects of the reasoning that informed my predecessor's determination of the earlier appeals. This must not be construed as an indication that I have failed to consider each and every ground of appeal raised in the present appeal. Rather, each ground has been assessed afresh in light of the information before me, the applicable legal framework, and the particular circumstances of this appeal. I have independently considered each ground of appeal raised in this matter on its own merits, having regard to the record before me, the submissions of the parties, and the applicable legal and factual context. The fact that similar reasoning is adopted in certain respects reflects the similarity of the issues raised, rather than any failure to undertake an independent assessment.
- 1.62 I must also stress that I was guided in this appeal by the principles set out in section 2 of the National Environmental Management Act No. 107 of 1998 (NEMA). Those principles apply alongside all of the other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of persons disadvantaged by unfair discrimination. My decision has therefore been guided after a careful consideration of all of the

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principles set out in section 2 of NEMA, including section 2(2) which provides that “environmental management must place people and their needs at the forefront of its concern and serve their physical, psychological, developmental, cultural and social interests equitably”; also section 2(3) which provides that “development must be socially, environmentally and economically sustainable”. Moreover, when I considered the issue of sustainable development, I did so with section 2(3) in mind and I considered the proper application of the factors articulated in section 2(4)(a) to (r).

1.63 I am also guided by the judgement in *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* [2017] 2 All SA 519 (GP) at para 80, Murphy J explained that:

“NEMA, like all legislation, must be interpreted purposively and in a manner that is consistent with the Constitution, paying due regard to the text and context of the legislation. Section 2 of NEMA sets out binding directive principles that must inform all decisions taken under the Act, including decisions on environmental authorisations. The directive principles serve as guidelines (by reference) to which any organ of state must exercise any function when taking any decision in terms of NEMA or any statutory provision concerning the protection of the environment. They guide the interpretation, administration and implementation of NEMA and any other law concerned with the protection or management of the environment. Competent authorities must take into account the directive principles when considering applications for environmental authorisation. The directive principles promote sustainable development and the mitigating principle that environmental damage must be avoided, minimised and remedied. The environmental impact assessment process is a key means of promoting sustainable development, by ensuring that the need for development is sufficiently balanced with full consideration of the potential environmental impacts of a project. The directive principles caution decision-makers to adopt a risk-averse and a careful approach, especially in the face of incomplete information.”

1.64 I have also had regard to the guidance provided by the Constitutional Court in *Sustaining the Wild Coast NPC and Others v Minister of Mineral Resources and Energy and Others*; *Natural*

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Justice and Another v Minister of Mineral Resources and Energy and Others [2026] ZACC 33, the Western Cape High Court in *The Green Connection NPC and Natural Justice v Minister of Forestry, Fisheries and the Environment and Others* (Case No. 5676/2024), and the Western Cape High Court in *Aukotowa Fisheries Primary Co-operative Ltd and Others v Director-General: Department of Mineral and Petroleum Resources and Others* (Case No. 24492/2024). While each matter was decided on its own facts, the principles articulated in these judgments have informed my assessment of the grounds of appeal and the applicable legal framework.

- 1.65 Considering the overlapping and substantially similar nature of the grounds of appeal advanced by the appellants, I shall address their submissions in a consolidated manner under each respective ground of appeal set out below. Save where it becomes necessary to distinguish a submission or issue raised uniquely by a particular appellant, references shall generally be made collectively to “*the appellants*.”
- 1.66 Where specific reference is made to an individual appellant, such reference shall be construed as relating only to submissions, facts, or issues uniquely attributable to that appellant. Conversely, where the issues, arguments, or submissions are common to two or more appellants, they shall be dealt with collectively and referred to in this appeal decision as submissions of “*the appellants*” for purposes of convenience, coherence, and avoidance of unnecessary repetition.

The Interim Appeal and Revocation Decisions

- 1.67 On 13 August 2023, while the Appeals Directorate within the Department was processing and administering the appeals, the Western Cape Division of the High Court, in a separate but parallel process, handed down judgment in the matter of *The Green Connection NPC and Natural Justice V The Minister of Forestry, Fisheries and the Environment and Others*, Case No. 5676/2024. In that matter, the Court reviewed and set aside the environmental authorisation issued to TotalEnergies for offshore exploration drilling off South Africa’s south-west coast, on the basis of material defects in the Environmental Impact Assessment process,

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including, among others, that:

- the EIAr failed to assess, and the State Respondents failed to properly consider, the need and desirability of the proposed project because no consideration was given to climate change impacts which will be caused by burning any gas discovered by the proposed project; and
- the final EIAr failed to assess, and the State Respondents failed to consider, the transboundary impact of the proposed project both on Namibia and on international waters.

1.68 Several parties, including Total Energies and Shell Exploration Africa B.V., have applied for leave to appeal this judgment and order to the Supreme Court of Appeal.

1.69 On 29 September 2025, former Minister George, issued an interim decision deferring finalisation of the appeals lodged against the applicant's environmental authorisation pending the outcome of the Supreme Court of Appeal proceedings.

1.70 On 10 March 2026, my predecessor, Minister Aucamp revoked the deferral decision after seeking external legal advice and considering the interim appeal decision against the statutory and regulatory framework governing appeals under section 43 of NEMA, the provisions of the Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000) (PAJA) and the obligations derived from the Constitution of the Republic of South Africa, 1996 (the Constitution). The appeal administrator was accordingly instructed to proceed with the administration and processing of the appeals, and to appoint an appeal panel to provide recommendations on the adjudication and determination of the appeals in accordance with Regulation 6 of the 2014 Appeal Regulations.

Consideration of the Interim Decisions and the Appointment of an Appeal Panel.

1.71 I have considered the interim decisions issued by my predecessors, including the determination by Minister Aucamp to revoke the earlier deferral decisions taken by former Minister George and proceed with the adjudication of the appeals. I concur with Minister

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Aucamp's reasoning that these appeals should be finalised without further delay and that prolonged deferral would be inconsistent with the effective administration of the appeal process contemplated in section 43 of NEMA and the National Appeal Regulations.

- 1.72 I have also considered whether it remains necessary to appoint an appeal panel in terms of section 43(5) of NEMA. In exercising this discretion, I have had regard to developments in the legal framework since the interim decisions were issued. In particular, the subsequent judgment in *Aukotowa Fisheries Primary Co-operative Limited and Others v Director-General: Department of Mineral and Petroleum Resources and Others* (24492/2024) [2026] ZAWCHC 408 (13 August 2026) has provided substantial judicial guidance on a number of the issues that arise in these appeals, including the assessment of exploration activities, cumulative impacts, climate considerations, oil-spill contingency planning and the distinction between exploration and production phases. The legal position is therefore considerably clearer than it was when the earlier interim decisions were made.
- 1.73 I further note that the Appeal Administrator responsible for these appeals possesses the requisite qualifications, expertise and experience in environmental assessment and has provided a detailed recommendation addressing the factual, technical and legal issues raised by the parties. I am accordingly satisfied that the record before me, together with the Appeal Administrator's recommendation, provides a sufficient basis upon which to determine the appeals.
- 1.74 In these circumstances, I do not consider the appointment of an appeal panel to be necessary. The appointment of an appeal panel would inevitably result in additional procedural steps and further delay in the finalisation of appeals that have already been pending for an extended period. Having regard to section 237 of the Constitution, which requires constitutional obligations to be performed diligently and without delay, and the need for finality in administrative decision-making, I am satisfied that the appeals can properly be determined on the basis of the record and the recommendation before me without appointing an appeal panel.

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- 1.75 With this in mind, I now deal with the grounds of appeal submitted by each of the appellants and where I deem it appropriate, I address those grounds of appeal that are overlapping in nature under a single ground of appeal.

2 GROUNDS OF APPEAL, RESPONSES AND EVALUATION

2.1 FIRST GROUND OF APPEAL: NEED AND DESIRABILITY, CLIMATE CHANGE, LIFE CYCLE ASSESSMENT, AND THE NO-GO ALTERNATIVE

This ground of appeal was raised by the second, third, fourth, ninth and tenth appellants.

- 2.1.1 The second appellant submits that the project as a whole is undesirable. South Africa has made commitments to reduce its carbon footprint and therefore exploration for hydrocarbons, the use of which SA has undertaken to reduce, is completely contradictory to such an undertaking. There is no desirability for seismic surveys, given that fossil fuels are in a short term phase out process.
- 2.1.2 The International Energy Association and the United Nations have made a plea to stop further exploration of hydrocarbons, as the current deposits and production are more than adequate to see through the world's energy needs well past 2050. Permitting exploration is contrary to the pleas and unnecessary, and additionally likely to result in stranded assets in the medium to long term.
- 2.1.3 The third and fourth appellants submit that pursuing new oil and gas developments is in direct opposition to the recommendations of the Intergovernmental Panel on Climate Change (IPCC) and Environmental Impact Assessments (EIA). Such activities contribute to global warming, undermining efforts to mitigate climate change.
- 2.1.4 South Africa is a signatory to various international climate agreements. Proceeding with this project would be in contravention of these commitments, particularly in the context of global efforts to reduce reliance on fossil fuels and promote sustainable practices.

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- 2.1.5 Scientific consensus underscores the urgent need to reduce dependency on fossil fuels to mitigate the effects of climate change. Expanding oil and gas exploration contradicts this imperative.
- 2.1.6 The ninth appellant contends that if the primary objective of the EMPr process is to *"give effect to precautionary measures"* and support *"ongoing proactive mitigation and the duty of care to the environment"* (EMPr, page 2), then information critical to decision-making is largely missing from the EMPr. The limited scope of the EMPr reflects a significant oversight that compromises informed, proactive, and precautionary decision-making. By failing to adequately address the direct connection between the project's objective of facilitating further fossil fuel extraction and the severe, long-term consequences of this continued exploitation, it neglects the broader 'poly-crisis' of intensifying global warming, including the rising, irreversible acidity (Poloczanska et al., 2018), (Feely et al., 2009), (Zeebe & Wolf-Gladrow, 2001), and accelerated increased in the temperature of the oceans, the potential collapse of global ocean circulation system (Armstrong McKay et al., 2023), extreme weather events, and widespread species migration and extinction (Doney et al 2012), ultimately destroying the fisheries and marine tourism industries of all countries, including South Africa, resulting in devastating job losses, food insecurity, and other adverse socioeconomic consequences (Pörtner et al 2022).
- 2.1.7 The report therefore does not equip the competent authority with a comprehensive understanding of the potentially irreversible and escalating environmental and social impacts of global warming, nor the associated legal consequences of continued operation. This omission undermines the obligation to apply the precautionary principle in safeguarding against future harm.
- 2.1.8 The competent authority has not applied his mind to the temporal bias in information. The lack of parity in time-frame application for the EMPr impacts assessments renders them unreliable. Environmental and social impacts are measured only during the reconnaissance operations, whereas the justification for the survey project impacts into the future beyond the project. This creates inconsistency for any rational comparison of effects and makes the impact

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significance ratings therefore irrational and skewed.

- 2.1.9 The competent authority (in its key finding in paragraph 3.6 of the EA) agrees that although no-go alternatives were identified, no in-depth assessments were carried out, despite the fact that this impinges directly on the decision to either proceed with the project, or not to do so.
- 2.1.10 The competent authority did not properly assess the alternative of no surveys, based on international gas phase-out pressure; reduced funding, increased cost of capital, carbon tax, trade taxes, etc and that gas functions in the electricity sector are already outcompeted, or expected, based on trends (Halsey et al., 2022). There are strategic and economic reasons to re-evaluate identifying oil and gas resources to further exploration and production (International Institute for Sustainable Development, 2022).
- 2.1.11 The competent authority did not apply his mind, given the existential issues of lasting harm to the biodiversity and climate systems by the ongoing development of fossil fuels, which of necessity, require ongoing reconnaissance for the same. It is trite that the long-term benefits of eliminating greenhouse gas (GHG) emission generation should be considered via the No Go alternative. The link between the proposed project, whose sole purpose is reconnaissance for the expansion, and sustained use, of fossil fuels, and these existential threats, has not been made with the effect of producing a comprehensive 'no-go' option. On this basis alone, the environmental authorisation should be reconsidered and set aside.
- 2.1.12 The competent authority has failed to consider the three court cases related to offshore oil and gas to date, taking the ministers (DMRE and DFFE) and developers to court to demand the minister engage the 'No-Go' option to stop development before it starts:
- 2.1.12.1 *South Durban Community Environmental Alliance et al. V Minister of Environment, Forestry and Fisheries & Others*, (2021, June 14) Case No. 29433/21 in the High Court of South Africa Gauteng Division, Pretoria;
<https://drive.google.com/file/d/12loY5RLGd0CGRoMrc2pn7kt4yohkCWxS/view>.

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2.1.12.2 *Sustaining the Wild Coast NPC and Others vs. Minister of Mineral Resources and Energy and Others. (2021, December 28) Case No. 3491/2021 in the High Court of South Africa Eastern Cape Division, Makhanda/Grahamstown.*

<https://cer.org.za/wp-content/uploads/2021/12/SWC-v-Shell-Wild-Coast-Seismic-Blasting-Interdict-28.12.2021.pdf>.

2.1.12.3 *Christian John Adams & Others v Minister of Mineral Resources and Energy & Others. (2022, March 1) Case No. 1306/22 in the High Court of South Africa Western Cape Division, Cape Town.*

<https://cer.org.za/wp-content/uploads/2022/03/Adams-and-Others-v-Minister-of-Mineral-Resources-and-Energy-and-Others-ZAWCHC-24.pdf>

- 2.1.13 If the purpose of the project is in establishing the location of gas reserves and producing exploratory wells once found, the No-Go alternative should have included greater consideration of renewable energy alternatives to generate energy and provide energy feedstocks for industrial applications.
- 2.1.14 The EMPr has inadequately considered the no-go option, in that it has only dealt with the potentially negative economic impacts thereof. This is a biased and one-sided approach, particularly when the no-go alternative will ensure no pollution, no catastrophic spill, no climate impact, no impact on fisheries, no socio-economic impact, no increased violent conflict and militarization, no human rights abuses and no harm to the marine environment associated with offshore oil and gas exploitation.
- 2.1.15 The EMPr is inherently flawed and the competent authority contravened section 6(2)(e)(iii) of PAJA by failing to adequately consider the “no-go” option.
- 2.1.16 The competent authority has failed to justify the necessity of the project in light of the substantial risk of exacerbating social tensions highlighted in the original Social Impact Assessment. The needs and desirability of this project appear unduly influenced by vested interests, such as Sasol, without due consideration of the broader social implications. The

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competent authority has not adequately addressed or mitigated the potential negative consequences nor provided a clear, evidence-based rationale for proceeding with the project despite the significant risks of societal unrest.

2.1.17 Since the projected benefits of this project are to be conflated with the anticipated outcomes of eventual gas production, because the renewable sector could rely on the less intrusive multibeam bathymetry instead, it is incumbent upon the competent authority to also critically assess the associated harms arising from its exploitation:

2.1.17.1 South Africa has international commitments to the United Nations Framework Convention on Climate Change (UNFCCC) 1997, the Kyoto Protocol 2002, the Paris Agreement on Climate Change 2016, Global Biodiversity Framework adopted at COP15 in Montreal 2022, that are incompatible with the long term purpose of this reconnaissance activity.

2.1.17.2 The competent authority has failed to adequately interrogate the assertion that the identified gas will serve as a "transition fuel for the country up to 2030" (page 35 of the BAR). Given that the survey is expected to conclude by 2026, the competent authority must be fully aware of the extended timeframes required for offshore exploration and production. At present, Total's Brulpadda exploration right is the only one advancing toward a production right (DFFE, 2023). The assertion that gas will be available for commercial production before 2030 is based on a flawed assumption, which undermines the legitimacy of the project's need and desirability.

2.1.17.3 This flawed assumption poses a substantial risk of inconsistency with South Africa's binding carbon budget and the peak-plateau-decline emissions trajectory, potentially delaying the nation's transition to Net Zero beyond the 2050 target and is, therefore, liable to further review.

2.1.18 The competent authority has failed to adequately assess unequivocal scientific conclusions regarding the effects of oil and gas production on global warming:

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- 2.1.18.1 Developing new oil and gas fields is 'incompatible' with limiting temperature rises to 1.5°C, as evident in the IPCC's 2022 report (Pörtner et al 2022), which is resolute that global oil and gas production and consumption must decrease by 29% by 2030 and that new oil and gas development and exploration must end immediately. These findings are supported by the IEA's Net-Zero by 2050 report, which states that emissions from oil and gas must decline by 65% by 2050.
- 2.1.18.2 The competent authority has failed to critically assess the economic viability of the discovered gas in relation to its competitiveness within the energy market. Affordable gas is not secure (Halsey et al., 2022).
- 2.1.18.3 Nor has the competent authority interrogated how the gas will facilitate the projected shift from the current growth rate of 1.6% in 2023 to a projected rate of between 6% and 8% (page 36 of the BAR), despite the absence of the necessary infrastructure, conversion of gas turbine power stations and a functioning gas market to support such a transformation. This lack of analysis undermines the robustness of the claims made in the BAR and constitutes a failure to fully evaluate the feasibility of the proposed project.
- 2.1.19 The competent authority has failed to carefully interrogate the claims that "*gas will assist in reducing the emissions of greenhouse gases (by reducing the country's reliance on coal for electricity generation*" (page 35 of the BAR):
- 2.1.19.1 Recent findings on the extent of methane leakage from gas infrastructure undermine claims of environmental benefits over other fossil fuels. A Natural Resources Defense Council (NRDC) study (Swanson et al., 2020) found that the climate benefit of LNG compared to coal is only modest at best, and because of the leakage inherent in producing the gas and the energy required to cool it and ship it, it ultimately presents a significant threat to the climate. The CA has accepted assumptions of well-run that have yet to be converted, a national gas infrastructure that has yet to be built, and does not assess greenhouse gas emissions or health

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impacts that would arise from developing a gas economy.

2.1.19.2 Cumulative emissions of nitrogen oxides, carbon monoxide, and volatile organic compounds from new fossil gas plants in South Africa will add to the existing emissions from the coal sector.

2.1.19.3 Methane is a significant greenhouse gas, driving climate change. It is only a low-carbon fuel at ignition. It is the primary contributor to the formation of ground-level ozone, a hazardous air pollutant and greenhouse gas, exposure to which causes 1 million premature deaths globally every year.² Over a 20-year period, it is 80 times more potent at warming than carbon dioxide.

2.1.20 The tenth appellant submits that the final BAR asserts that potential negative impacts that may result from production of oil and gas cannot be assessed at this stage (surveying phase). The relevant passage of the report reads as follows: *"it is not currently possible to assess the risks associated with oil and gas activities, given that the specific details of these potential future activities (production) are unknown and therefore climate change impacts would need to be assessed during any subsequent Scoping and EIA processes for any potential subsequent oil and gas production projects."*³

2.1.21 The applicant's claim that it is impossible to accurately assess the risks of oil and gas activities at this stage, is flawed and incorrect. It is a globally accepted scientific fact that fossil fuels (oil, coal, and natural gas) are the biggest contributors of greenhouse gas emissions which result in climate change.⁴ In acknowledging the risks associated with climate change, the South African government made several commitments to reduce greenhouse gas emissions. It set a fixed target for greenhouse gas emissions levels⁵ and developed an investment plan to transition the country's energy sources away from non-renewables to renewables.⁶

² <https://www.ccacoalition.org/short-lived-climate-pollutants/tropospheric-ozone>.

³ Par 5.2. of the final BAR.

⁴ Paris Agreement 2015.

⁵ Nationally Determined Contributions 2015 updated in 2021.

⁶ South Africa's Just Energy Transition Investment Plan 2023-2027 (JETIP).

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Furthermore, the impacts of climate change have already been factually established⁷ and a comprehensive assessment that looks at the need and desirability of a project is, according to two high court judgements, pivotal for decision-makers.⁸

2.1.22 In the same vein, and contrary to its position on the possibility of assessing climate change risks, the final BAR argues future economic benefits to justify the need and desirability of the project, despite its finding that production activities, which may take place in the future, are subject to a separate environmental assessment.⁹ On one hand, the final BAR finds the proposed project desirable because of its future economic benefits and on the other hand, it argues that future climate change impacts are impossible to assess during the surveying phase of the project. This is an unnecessary inconsistency. This contradiction can be avoided by conducting a comprehensive assessment that assesses, *inter alia*, climate change impacts.

2.1.23 In refusing to assess the project's impact on climate change, the EAP missed an opportunity to assess the impact of climate change, environmental degradation, and food insecurity on children and their environmental rights. There is consensus amongst scholars and researchers that climate change affects children in different parts of the globe differently.¹⁰ The difference in how climate change affects children is thought to be largely influenced by the preexisting social and economic disparities and geographical variabilities. Notably, the project will require highly skilled personnel and thus jobs for interested and affected communities will be limited. This makes it difficult to even argue in favour of the economic development part of the project. The impacts are uniquely different for children compared to adults because of the vulnerability of their developing bodies. The warm spells and heat waves caused by climate change exposes children to heat stress, respiratory and vector-borne diseases, and malnutrition with long term implications. Heavy precipitation events and intense tropical cyclones put children at higher risk of death than adults, exposes them to water-borne /water

⁷ IPCC Special Report on global warming, amongst others.

⁸ *Sustaining the Wild Coast NPC and Others v Minister of Mineral Resources and Energy and Others* 2022 (6) SA 589 (ECMk) paragraph 125; *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* 2017 2 All SA 519 (GP) paragraph 115.

⁹ Par 5.2 of the final BAR.

¹⁰ Sheridan Bartlett "Understanding the impacts for children of factors related to climate Change" 2008; Sheffield P E and Landigan P J "Global Climate Change and Children's Health: Threats and Strategies for Prevention" 2011; Currie J and Deschênes O "Children and Climate Change: Introducing the Issue" 2016; Akresh R "Climate Change, Conflict and Children" 2016.

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washed illnesses and malaria, reduces their options for play and social interaction. Furthermore, extreme high sea levels may increase the risk of death and bad health for children.

- 2.1.24 The objective of engaging in the proposed seismic survey is to discover oil and gas reserves to explore. However, the broader objective is the production of oil and gas. The final BAR argues that it is impossible to assess negative impacts of production activities during the seismic survey phase.¹¹ The Eastern Cape High Court judgment in *Sustaining the Wild Coast and Others*, held that seismic surveys are stages leading to oil and gas production, which contribute to greenhouse gas emissions, worsening climate change and affecting people's livelihood and food security. The court underscored the fact that a comprehensive assessment of the impact of new oil and gas reserves is required for proper assessment of the need and desirability of the project. The final BAR fails to evaluate the negative long-term effects of oil and gas production, and totally ignores risks to coastal communities' livelihoods.
- 2.1.25 There are currently multiple applications and/or approvals for exploration in and around the survey area. Additionally, a production right is already held for the nearby block, whilst an environmental impact assessment report has already been produced for TEEPSA's 11B/12B production right application. The impacts associated with exploration and production activities, in a general sense, are readily ascertainable from these projects, as well as experience across the continent and the world. It is a misnomer to say that it is not possible to predict the future impacts from the lifecycle of the project.
- 2.1.26 The final BAR highlights future benefits of exploiting oil and gas to justify need and desirability of the proposed activities.¹² However, it deliberately avoids dealing with the negative impacts of such exploitation. While acknowledging the importance of understanding the full scope of seismic data, the final BAR focusses on the perceived advantages, including using natural gas as a transition fuel, reducing greenhouse gas emissions, supporting renewable energy initiatives and creating jobs. It does not adequately assess the long-term risks associated with

¹¹ Par 5.2 of the final BAR.

¹² Par 5.2 of the final BAR.

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oil and gas exploration and production.

- 2.1.27 The final BAR argues that natural gas can act as a transition fuel to help South Africa meet its climate goals, citing its lower carbon dioxide emissions compared to coal and oil. It argues that natural gas emits significantly less carbon dioxide than coal and oil, especially when using Combined Cycle Gas Turbines. However, these claims are unsubstantiated. The final BAR overlooks the lifecycle impacts of natural gas, which includes potential methane leaks during extraction and transportation which makes natural gas more harmful than coal.
- 2.1.28 It is worth noting that the impending global carbon border adjustment mechanisms will restrict the exportation of products with high carbon footprints. This will make South Africa's economy vulnerable if it relies on gas for electricity generation instead of cleaner renewable options. In sum, investing in fossil fuels is not a sustainable approach for South Africa to balance its climate commitments with economic development.
- 2.1.29 The final BAR also fails to explain the need and desirability of three seismic surveys over the same project area, beyond commercial profit for each permit holder. The risk of harm cannot be justified to achieve the same result two or three times over.
- 2.1.30 The final BAR states that in the previous survey, it committed to acquiring up to 10 000 km², which was largely achieved as ~9 000 km² was surveyed. This leaves only 10% of its intended survey incomplete. Despite the claim that the applicant met almost 90% of its intended work plan, the final BAR gives several reasons for not completing the full survey.
- 2.1.31 It is not clear in the final BAR, but it appears that the applicants intends to survey approximately 21 000 km² in terms of the new reconnaissance permit and authorisation. It is also not clear a) how the applicant now intends to achieve more than double the survey area in the same window, and over the same time period of 127 days and b) how the applicant intends to overcome the difficulties it faced previously – the appeal phase, viable acquisition windows, vessel availability and survey window limitations.

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- 2.1.32 These are all factors relevant to determine the need and desirability of the project for a second, or third, time, which were not considered.
- 2.1.33 In its Comment to the BAR,¹³ the tenth appellant fully argued that the BAR failed to consider alternatives, however the final BAR still does not adequately consider it. The Guideline on Need and Feasibility in terms of the EIA Regulations requires specific evaluation of the need and feasibility of the proposed activity during EIA process. Reasonable and feasible alternatives include the option of not implementing the activity.
- 2.1.34 The final BAR asserts that not implementing the proposed activity would result in a missed opportunity to identify oil and gas resources within the survey area.
- 2.1.35 A proper consideration of a “no go” alternative entails consideration of the potential economic and social costs of future oil and gas development, including greenhouse gas emissions and the risks of oil spills. Additionally, the assessment should evaluate the ecological and socio-economic benefits of the no go option for small-scale fishers and communities, and explore alternative energy sources, such as renewable energy, that carry less long-term ecological and socio-economic risks.
- 2.1.36 The final BAR has not considered the cumulative climate impacts associated with the discovery of additional oil and gas reserves.
- 2.1.37 Having regard to the global Climate Emergency and South Africa’s international commitment in the NDC to ‘working with others to ensure temperature increases are kept well below 2°C above pre-industrial levels, which could include a further revision of the temperature goal to below 1.5°C in light of emerging science’ by reducing greenhouse gas (GHG) emissions, the seismic survey would, if additional commercially viable resources are identified and developed through to production phase, inevitably add to South Africa’s overall GHG emissions.
- 2.1.38 As a reasonably foreseeable future impact that may become more significant, especially in

¹³ Pars 51-55 of the Comment to the BAR.

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combination with impacts arising from similar offshore oil and gas exploration and production activities, it is submitted that the cumulative impacts of such GHG emissions need to be identified and assessed. It is further submitted that an evaluation of future emissions is entirely possible.

- 2.1.39 By approving each project in isolation, the government cannot know whether the major push to develop South Africa's oil and gas resources is consistent with the country's climate change obligations. Where effectively no oil and gas is being produced, the introduction of these many projects could have an outstanding influence on South Africa's carbon budget, potentially far exceeding its NDC targets. There is no adequate reason for why this type of cumulative GHG assessment was not done, and approving each project without this cumulative impact assessment is unreasonable and contrary to the requirements of NEMA.

APPLICANT'S RESPONSE

In response to this ground of appeal, the applicant submits as follows:

- 2.1.40 The need and desirability of the proposed activities has been comprehensively assessed in section 5 of the BAR. It complies with the requirements of the 2014 EIA Regulations as well as the associated Guideline on Need and Desirability; and the exploration for oil and gas resources is supported through the legislative framework and various government policy and plans as outlined in the BAR. It is the responsibility of the South African government to determine its national energy strategy and development of South Africa's oil and gas resources is aligned with national policy documents.
- 2.1.41 South Africa is preparing for the release of open acreage both offshore and onshore under license rounds to be scheduled following the enactment of the Upstream Petroleum Resources Development Bill (UPRDB), 2021, which was passed on 25 April 2024 and is with the President for assent to become law. While committed to achieve carbon neutrality by 2050, it remains the Government of South Africa's stated policy and desire to develop the country's indigenous natural gas and oil resources to ensure national energy security, stability,

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and economic development. South Africa is on a clear path to respond to national developmental imperatives by exploring, discovering, quantifying and developing its indigenous petroleum resources in an environmentally sustainable and responsible manner. The DMPR has invited proposals from seismic acquisition, seismic processing or any other companies involved in exploration data acquisition or enhancement, to enter into an agreement with the Petroleum Agency South Africa (PASA) for data acquisition and/or enhancement over various areas offshore and onshore.¹⁴

- 2.1.42 It should also be noted that while South Africa is committed to reducing GHG emissions, it is recognised that the process of transition must be carefully managed, and the social and economic cost of the transition for vulnerable groups must be factored into the planning process, while the economic opportunities of the transition should be fairly distributed. Specifically, and in summary, the exploration of South Africa's oil and gas resources is permitted by the MPRDA (and will soon be governed by the Upstream Petroleum Resources Development Act 23 of 2024⁹). It is also specifically provided for in NEMA through Listed Activity 21(b) of Listing Notice 1, Activity 18 of Listing Notice 2 and Activity 20 of Listing Notice 2 to the 2014 EIA Regulations. In addition, the Integrated Resource Plan (IRP) 2018 re-affirms that *"South Africa continues to pursue a diversified energy mix that reduces reliance on a single or a few primary energy sources."* This sentiment was reaffirmed in the IRP 2019 as well as the IRP 2023.
- 2.1.43 The 2021 Nationally Determined Contributions (NDCs), which represent South Africa's fair contributions to the decarbonisation commitments of the Paris Agreement, are in turn aligned with the IRP 2019, which is the country's electricity planning strategy. According to IRP 2019, there is a need for gas in South Africa's energy mix in the future. This need is driven in part by the expectation that natural gas may act as a transition fuel, whilst other greener technologies mature. Furthermore, the National Development Plan 2030 (NDP) states that *"the country will explore the use of natural gas as a less carbon intensive transitional fuel."* The proposed activities aid in the determination of whether gas or oil resources might be present in the

¹⁴ <https://www.petroleumagency.co.za/srfp-overview/> and <https://www.herbertsmithfreehills.com/notes/africa/2024-05/the-upstream-petroleum-resources-development-bill-has-been-sent-to-the-president-for-assent>.

survey area.

- 2.1.44 Furthermore, the South African White Paper on the Energy Policy (1998) ("Energy Policy") is the overarching policy document which has guided and continues to guide future policy and planning in the energy sector in South Africa. The Energy Policy states that "*Government will ensure the optimal and environmentally sustainable exploration and development of the country's natural oil and gas resources to the benefit of all*" and undertakes to "*ensure private sector investment and expertise in the exploitation and development of the country's oil and gas resources.*" The successful exploitation of these natural resources would contribute to the growth of the economy and relieve pressure on the balance of payments. Fossil fuels (including oil and gas) play an important role in the socio-economic development of South Africa, while simultaneously providing the necessary infrastructural economic base for the country to become an attractive host for foreign investments in the energy sector. Thus, the energy mix contemplated by the South African government, and consequently all the relevant government departments comprises both non-renewable and alternative energy sources for South Africa's future energy security.
- 2.1.45 To facilitate economic growth and reduce dependency on imported fuel products, there is a critical need to ensure that there is sufficient, stable capacity in the country's energy supply by diversifying the primary energy sources within South Africa. In this regard, the legislative landscape and government policies supports exploration for indigenous oil and gas resources as oil and gas remains part of the energy mix in the short-to medium- term and domestic production is preferable to imports. This is also in line with international policy documents, which recognises the need for natural gas and remaining oil demand in the energy mix in the pathway to net-zero emissions by 2050. This is reflected in a number of national policy documents, including the 2021 NDC, Just Energy Transition Plan, as well as the IRP 2019 and IRP 2021. The Guideline on Need and Desirability requires consideration of the financial viability of a project in terms of "*justifiable economic development, measured against the broader societal short-term and long-term needs*". The Guideline on Need and Desirability also refers to the NDP and acknowledges that the threat to the "*environment and the challenge of poverty alleviation are closely intertwined*" and as such environmental policies

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should not be framed as a choice between the environment and economic growth. The Guideline on Need and Desirability accordingly requires that decision-makers to "ensure that the development will be socially, economically and environmentally sustainable". The IRP 2019 supports an energy mix. The 2021 NDCs, which represent South Africa's fair contributions to the decarbonisation commitments of the Paris Agreement, are in turn aligned with the IRP 2019. Section 4.9.8. of the final EIAr deals extensively with the NDCs.

2.1.46 In further support of the above:

2.1.46.1 The NDP provides that "[t]he following infrastructure investments should be prioritised...Constructing infrastructure to import liquefied natural gas and increasing exploration to find domestic gas feedstock (including investigating shale and coal bed methane reserves) to diversify the energy mix and reduce carbon emissions."

2.1.46.2 The National Climate Change Response Strategy and the National Climate Change Response White Paper further state that "South Africa is committed to making a fair contribution to the global effort to reduce GHG emissions. At the same time, the country must ensure that the necessary climate change-related investments contribute to building South Africa's future economic competitiveness and economic growth and contribute to its over-riding national priorities for sustainable development, job creation, improving public and environmental health and poverty eradication".

2.1.47 There is therefore no uncertainty that the proposed activities, as well as the exploration for and production of oil and gas resources, is supported not only by the prevailing legislative framework but also the various government policy and plans which aim to give effect to not only the Paris Agreement but also the need for a just energy transition for South Africa and its people. The need and desirability section of the BAR presents the current policy and strategy information, which underpins the needs and desire to explore for oil and gas resources in South Africa. The preferences of appellants regarding the need and desirability of oil and gas projects cannot override the powers of the legislature, government policy or the laws of the

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country.

- 2.1.48 According to the DFFE, targets have been determined to achieve South Africa's national GHG emissions commitments. These targets consider the likely GHG emissions outcome of the implementation of current South African policies including the IRP.
- 2.1.49 The proposed activities may be used to determine whether a viable gas or oil resource is present. The outcomes of this could provide insight into potential alternative supply options to inform the future energy planning and policy for South Africa. Considering this, and other new information on supply options, as well as the rapid technological advancements in the energy sector (and specifically in the low carbon alternatives), it is crucial that the energy planning for South Africa is continually reassessed and revised to ensure that the most suitable and sustainable strategy is defined. It is agreed that pending the outcome of an appraisal on the viability of extracting any oil or gas resource, which this exploration activity is likely to inform, due caution will need to be taken to ensure that South Africa complies with its international commitments and ensure a safe environment in line with our constitution and the prevailing environmental legislation that gives effect to thereto.
- 2.1.50 The tenth appellant's concluding view that "investing in fossil fuels is not a sustainable approach for South Africa to balance its climate commitments with economic development" is noted. This amounts to a personal view.
- 2.1.51 The summary for Policy-makers of the IPCC Working Group III Report, Climate Change 2022: Mitigation of Climate Change was approved on April 4, 2022, by 195 member governments of the IPCC. The Report indicates that limiting global warming will require major transitions in the energy sector. Considering that of the three fossil fuels used for electric power generation (coal, oil and natural gas), natural gas emits the least carbon dioxide per unit of energy produced. The increased use of natural gas can also, in the short term, serve as a transition fuel on the path to the carbon-neutral goal of the Paris Agreement and align with the IPCC Report. In addition, the National Development Plan (NDP) identifies the need to diversify the current energy mix and to reduce carbon emissions. Gas will play a more significant role in the

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energy mix and the exploration of gas as an alternative to coal for energy production has been recognised as a planning priority. The plan indicates that projected demand for natural gas between 2010 and 2050 would be second only to petroleum products, primarily due to increased growth in the industrial sector. It also identifies significant potential for natural gas in terms of power generation and direct thermal uses.

- 2.1.52 The position of the NDP is reiterated in the Draft Integrated Energy Plan (IEP), which seeks to determine how current and future energy needs can be addressed efficiently. Main objectives outlined in the plan include security of supply, increased access to energy, diversity in supply sources and primary sources of energy and minimising emissions. The plan indicates that projected demand for natural gas between 2010 and 2050 would be second only to petroleum products, primarily due to increased growth in the industrial sector. It also identifies significant potential for natural gas in terms of power generation and direct thermal uses. Furthermore, an increase in domestic natural gas reserves would also contribute to security of supply in the gas to liquids industry, which currently relies on feedstock from coal, oil and gas reserves. The Draft IEP points out the vulnerability of the liquid fuels industry and its economy to fluctuations in the global oil market, given that South Africa is a net importer of oil.
- 2.1.53 In addition, as indicated in Sections 4.8 and 4.9 of the BAR, several pieces of international legislations are applicable to the project, including but not limited to, the United Nations Convention on the Law of the Sea, The Paris Agreement, and The United Nations Framework Convention on Climate Change (UNFCCC). As a signatory to the Paris Agreement, South Africa is required to investigate alternatives to existing industries, which have high carbon-emissions. A shift away from coal-based energy production in South Africa within the energy sector and increased reliance on alternative energy sources is therefore anticipated and thus the natural gas explorations in line with the Paris Agreement.
- 2.1.54 South Africa's updated mitigation targets represent a significant progression from the first Nationally determined contributions (NDC): the country commits to a fixed target for greenhouse gas emissions levels of 398-510 MtCO₂e by 2025, and 350-420 MtCO₂e by 2030, compared to 398 and 614 Mt CO₂e between 2025 and 2030 as communicated in the

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first NDC. Considering that of the three fossil fuels used for electric power generation (coal, oil and natural gas), natural gas emits the least carbon dioxide per unit of energy produced. The increased use of natural gas can, in the short term, serve as a transition fuel in line with the Country's NDC and the South Africa's UNDP Climate Change Promise as well as aligning with the Paris Agreement and the IPCC Report. The interrogation and amendment of National Energy Policy and Strategy is not a legal requirement falls beyond the scope of the Basic Assessment for the reconnaissance activities.

2.1.55 In addition, the World Health Organization (WHO) defines fuels and technologies that are clean for health at the point of use as solar, electricity, biogas, liquefied petroleum gas (LPG), natural gas, alcohol fuels, as well as biomass stoves that meet the emission targets in the WHO Guidelines. Without strong policy action, 2.1 billion people are estimated to still lack access to clean fuels and technologies in 2030. There is a particularly critical need for action in sub-Saharan Africa, where population growth has outpaced access to clean cooking, and 923 million people lacked access in 2020. Strategies to increase the adoption of clean household energy include policies that provide financial support to purchase cleaner technologies and fuels, improved ventilation or housing design, and communication campaigns to encourage clean energy use. <https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>.

2.1.56 It denies the assertion by the third and fourth appellants that the climate change impact of the proposed activities compromises South Africa's climate change commitments. The applicable legislation on National Policy and Planning Context relating to the country's energy guidelines and Climate Change is highlighted in Section 4.8 of the BAR. The third and fourth appellants have not described any specific aspects relevant to the proposed activities which the applicant can interrogate and analyse in order to respond meaningfully, and accordingly the applicant is left to imply meaning into the ground of appeal in order to respond to the appellant. All relevant potential impacts of the proposed activities have been thoroughly assessed in the BAR.

2.1.57 The appellants' personal preferences regarding South Africa's climate change commitments

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combined with personal views regarding the Government's carefully chartered and documented path to a net zero transition, does not constitute legitimate grounds of appeal nor the basis of which the granting of the environmental authorisation can be set aside.

2.1.58 The mitigation measures contained in the EMPr (Appendix E to the BAR) have been designed in respect of all potential impacts of the proposed activities and that all relevant considerations have been taken into account. The potential impacts associated with the proposed survey have been identified and assessed in Section 9.3 of the BAR.

2.1.59 The impact of the proposed activities in respect of GHG emissions and climate change are appropriately considered in the BAR:

2.1.59.1 The relevant national planning and policy context is presented in Section 4.8 of the BAR. This includes the relevant documents related to energy planning as well as documentation related to South Africa's Climate Change commitments.

2.1.59.2 Section 5.1 of the BAR presents the need and desirability for the proposed activities as required by the Needs and Desirability Guideline. It is clear from Table 6 of the BAR that the needs and desirability assessment focuses on the proposed activities only and does not argue and present future economic benefits associated with any potential production phase. Therefore, while the BAR acknowledges potential long-term advantages, it emphasises the necessity of understanding the full scope of seismic data acquisition to validate the current activities. This approach allows for a more focused assessment of the immediate impacts and benefits, ensuring that the decision-making process is grounded in the present context and specific activities, rather than speculative future activities and outcomes.

2.1.59.3 As stated in Section 5.2 of the BAR: *the feasibility of using natural gas for domestic power generation is dependent on the extent of available domestic reserves of natural gas, as well as the financial cost of importing natural gas should those reserves be insufficient. The acquisition of seismic survey data is therefore*

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considered important with respect to understanding the potential for future oil and gas production as part of the energy mix of the country going forward and the need and desirability of the project is therefore supported from an energy security perspective.

2.1.59.4 This does not represent an inconsistency in the assessment of impacts relating to the seismic survey. There are no significant GHG emissions directly related to the proposed activities nor are there significant climate change vulnerability risks. Therefore the climate change impacts associated with the proposed activities would be negligible. Should the applicant or other applicants wish to undertake any additional exploration, production, or combustion activities which are not addressed in the current environmental authorisation application, there would be a need to apply for the relevant permissions. These would include a formal application for new environmental authorisation and where relevant an exploration and production right, informed by a comprehensive Environmental Impact Assessment and stakeholder consultation assessing the merits of these specific activities. Any subsequent/resulting authorisation would be restricted to these specifically assessed activities. Although the Need and Desirability of the project may be linked to the potential future use of the seismic data to discover oil and gas reserves, future impacts associated with potential oil and gas production would need to be assessed separately as part of the EIA for those activities. Given that this project seeks to undertake reconnaissance only, and would not provide authorisation for potential future exploration or production activities, it is premature to assess the likely impacts (including climate change) of further future speculative invasive exploration activities or production activities or future utilisation of any resource, as the extent, duration, location, and magnitude of potential impacts, all of which are crucial to be able to assess the likely environmental impact, are unknown at this stage. Any such assessment is unlikely to be realistic and would consequently be subject to challenge.

2.1.59.5 Seismic surveying is not only used for petroleum and natural gas exploration and

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development, it can in certain instances also be used for development of offshore wind, geothermal energy, and low-carbon solutions such as carbon capture and storage and also more generally for providing more insight and understanding into the regional geology of the area for scientific purposes.

2.1.59.6 Section 8 and Section 9 of the BAR does identify relevant potential impacts and cumulative pressures on the receiving environment from climate change.

2.1.60 The term cumulative impacts is defined in the 2014 EIA Regulations as follows:

"cumulative impact", in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities."

2.1.61 The definition of cumulative impacts clearly confines the assessment of cumulative impacts to those associated with the activity that is being applied for and not potential future activities. Accordingly, the EAP must consider the reasonably foreseeable future impacts of the activity for which the environmental authorisation is sought. It does not state that the EAP must consider "the reasonably foreseeable impacts of future activities" such as exploration or production, which may or may not occur. Furthermore, the 2014 EIA Regulations and the Listing Notices do not lend themselves to the broad, all-encompassing treatment of reconnaissance operations, exploration operations and production operations nor does the MPRDA; in fact they do the opposite by requiring distinct and separate permitting and regulatory processes. If the Minister intended for the EAP to consider the environmental impacts of exploration or production during the reconnaissance EIA process, the Minister would not have created separate listed activities but would have combined them into one consolidated listed activity. The appellant's grounds of appeal relating to its views on the assessment of cumulative impacts finds no support in the legal prescripts and is incorrect in law.

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2.1.62 Notably, the ninth and tenth appellants do not rely on any legal prescripts in formulating their argument that the climate change impacts which may result from production of oil and gas, or the impacts of exploration drilling or production must be assessed as part of the impacts or as relevant factors to the impacts of the proposed activities. This is because the appellants views and arguments find no support under any of the legal prescripts, in fact the opposite is true with due regard to the following:

2.1.62.1 The environmental authorisation authorises the applicant to undertake the proposed activities only, such activities being reconnaissance activities and not exploration or production activities. The applicant has applied for a reconnaissance permit in terms of the MPRDA, which authorises the search for a mineral or petroleum by geological, geophysical and photogeological surveys and includes any remote sensing techniques but does not include any exploration or production operations.

2.1.62.2 NEMA, the 2014 EIA Regulations and MPRDA prescribe distinct and separate regulatory and environmental permitting processes for reconnaissance operations and distinct and separate regulatory and environmental permitting processes for exploration operations and distinct and separate regulatory and environmental permitting processes for production operations. To undertake reconnaissance operations, a party requires a reconnaissance permit to be issued in accordance with section 75 of the MPRDA and an environmental authorisation to be issued pursuant to Listed Activity 21(b) of Listing Notice 1, to the 2014 EIA Regulations. To undertake exploration operations, a party requires an exploration right to be issued in accordance with section 80 of the MPRDA and an environmental authorisation to be issued pursuant to Activity 18 of Listing Notice 2 to the 2014 EIA Regulations. To undertake production operations a party requires a production right to be issued in accordance with section 84 of the MPRDA and an environmental authorisation to be issued pursuant to Activity 20 of Listing Notice 2 to the 2014 EIA Regulations. This is because the technical processes for identification and extraction are not the same, the environmental impact assessment (EIA) processes are not the same and

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therefore the regulatory and environmental permitting processes under NEMA, the 2014 EIA Regulations and MPRDA treat reconnaissance operations, exploration operations and production operations as distinct and separate processes. Furthermore, potential impacts related to exploration activities and production activities cannot be reliably assessed during reconnaissance operations because there is a range of technical processes which may be conducted during these activities and the outcomes are so vast that the findings would be speculative at best and of little value at this stage. For this reason, NEMA, the 2014 EIA Regulations and the Listing Notices expressly and sensibly require separate EAs and separate and specific EIA processes. If the Minister intended for the EAP to consider the climate change environmental impacts or any other impact of exploration or production during the reconnaissance phase, then the Minister would not have created separate listed activities but would have combined them into one consolidated listed activity.

- 2.1.62.3 Impacts related to exploration activities or production activities which are required to be assessed as separate EIA processes under NEMA, the 2014 EIA Regulations, the Listing Notices and under the MPRDA, can only be so assessed specific to those activities if conducted and if the separate and distinct permits and rights are issued under NEMA, the 2014 EIA Regulations and the MPRDA. The applicant is not seeking such permits nor is the applicant seeking a right to explore or a right to produce fossil fuels as provided for in the MPRDA. Furthermore, the range of possible exploration or production activities or scenarios is not reasonably foreseeable as a result of the proposed activities and engaging in unsupported predictions regarding impacts of possible exploration or production operations, as is being advocated for by the appellants, does not serve in the best interest of environmental protections, which is why the provisions of NEMA, the 2014 EIA Regulations, the Listing Notices and the MPDRA do not provide any support to the appellants' assertions. The appellant's assertions are simply incorrect and unsupported in law.

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2.1.63 The tenth appellant also attempts to raise two court cases to bolster their argument that the climate change impacts, which may result from production of oil and gas, or the impacts of exploration drilling or production must be assessed as part of the impacts or as relevant factors to the impacts of the proposed activities namely the *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others*¹⁵ (Earthlife case) and *Sustaining the Wild Coast NPC & Others v Minister of Mineral Resources and Energy & Others*¹⁶ (Sustaining the Wild Coast / Wild Coast Judgment). In this regard it is important to note the following:

2.1.63.1 The facts in the Earthlife case are vastly distinguishable from the proposed activities. In the Earthlife case, Earthlife asserted that the climate change impacts of a proposed coal-fired power station were relevant factors and contended that, at the time the decision was taken, the climate change impact of the power station had not been completely investigated or considered in any detail. In the present case, the impact of GHG emissions of the proposed activities has been assessed in accordance with the NEMA, the 2014 EIA Regulations, the Listing Notices and the MPDRA and have presented to the CA prior to the decision on the environmental authorisation having been taken.

2.1.63.2 Secondly, reliance on the Judgment of the Eastern Cape High Court, Makhanda in the matter *Sustaining the Wild Coast* in support of the argument that exploration and production activities, specifically the GHG emissions associated with production activities must be assessed in Basic Assessment process in respect of reconnaissance operations is equally misplaced for the following reasons:

- Sustaining the Wild Coast relied on the decision in *Director: Mineral Development, Gauteng Region and Another v Save the Vaal Environment and Others*¹⁷ ("Save the Vaal").

¹⁵ *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* (65662/16) [2017] ZAGPPHC 58; [2017] 2 All SA 519 (GP) (8 March 2017).

¹⁶ *Sustaining the Wild Coast NPC and Others v Minister of Mineral Resources and Energy and Others* (3491/2021) [2022] ZAECKHC 55; 2022 (6) SA 589 (ECMk) (1 September 2022).

¹⁷ *Director: Mineral Development, Gauteng Region and another v Save the Vaal Environment and Others* (133/98) [1999] ZASCA 9; [1999] 2 All SA 381 (A) (12 March 1999).

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- In *Save the Vaal*, the court was concerned with whether the applicant has the right to be heard before the CA approved an Environmental Management Programme required by the respondent to undertake mining in terms of a mining licence granted under section 9 of the Minerals Act. In *Save the Vaal*, Olivier JA held that:

"The issue of a licence in terms of sec 9 enables the holder to proceed with the preparation of an environmental management programme, which, if approved, will enable him to commence mining operations. Without the sec 9 licence he cannot seek such approval. The granting of the sec 9 licence opens the door to the licensee and sets in motion a chain of events which can, and in the ordinary course of events might well, lead to the commencement of mining operations. It is settled law that a mere preliminary decision can have serious consequences in particular cases, inter alia where it lays "the necessary foundation for a possible decision ..." which may have grave results. In such a case, the audi-rule applies to the consideration of the preliminary decision...In my view this is such a case."

2.1.63.3 It is clear from Olivier JA's judgment in *Save the Vaal* that firstly, the granting of the mining licence and the environmental management plan are inextricably linked. Specifically, to undertake mining activities it requires both a mining licence and an associated environmental management plan. The same applies in the present matter namely:

- for the applicant to undertake reconnaissance operations, it requires a reconnaissance permit to be issued in accordance with section 75 of the MPRDA and an environmental authorisation to be issued pursuant to Listed Activity 21(b) of Listing Notice 1, to the 2014 EIA Regulations;
- If the applicant were undertaking exploration operations (which it is not), it would

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require an exploration right in terms of section 80 of the MPRDA plus an environmental authorisation under the NEMA, the 2014 EIA Regulations and Activity 18 of Listing Notice 2 of the 2014 EIA Regulations; and

- If the applicant were undertaking production operations (which it is not), it would be required to apply for a production right in terms of section 83 of the MPRDA and obtain an environmental authorisation under the NEMA, the 2014 EIA Regulations and Activity 20 of Listing Notice 2.

2.1.63.4 Accordingly, the Save the Vaal case is not precedent that reconnaissance operations, exploration rights and production rights are inextricably linked as part of the same process as the appellant seeks to infer. It is precedent for a mining licence and the associated environmental management plan being inextricably linked. It therefore follows that the Makhanda High Court decision in Sustaining the Wild Coast, which relies on the Save Vaal judgment, is equally not precedent for the appellant's argument that there has been a failure to consider climate change because the impacts of fossil fuel production operations are inextricably linked to reconnaissance operations. It should also be noted that the Makhanda High Court decision was appealed to the Supreme Court of Appeal (SCA) and this case is currently before the Constitutional Court. The precedent value of the Sustaining the Wild Coast has therefore not fully crystallised.

2.1.64 In summary, relative to the various inferences made by the ninth and tenth appellant, that the applicant and/or the EAP ought to have considered the climate change impacts which may result from production of oil and gas, or the impacts of exploration drilling or production as part of the impacts or as relevant factors to the impacts of the proposed activities, the applicant and the EAP submit that:

2.1.64.1 such assessment would result in a superficial and unhelpful assessment as the information required to accurately assess the impacts of exploration drilling or production are not reasonably foreseeable or known;

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- 2.1.64.2 assuming that it is possible to consider these future impacts (which it is not), it would render the subsequent EIA process for Activity 18 of Listing Notice 2 and Activity 20 of Listing Notice 2 to the EIA Regulations redundant, as all the environmental impacts would have already been assessed; and
- 2.1.64.3 such assessment would go against the intention of the drafters of the 2014 EIA Regulations and Listed Activities if the Minister intended for the EAP to consider the environmental impacts of exploration or production during the reconnaissance EIA process, the Minister would not have created separate listed activities but would have combined them into one consolidated listed activity.
- 2.1.65 Accordingly, the applicant submits that it is not possible to meaningfully assess the impacts of climate change which may or may not result from production of oil and gas, or the impacts of exploration drilling or production as part of the impacts or as relevant factors to the impacts of the proposed activities, nor is it a legal requirement for the applicant to do so. All relevant factors and potential impacts of the proposed activities on marine ecology which needed to have been taken into account were so considered and thoroughly assessed by the applicant and the EAP in the preparation of the BAR, and by the CA in deciding to grant the environmental authorisation. For this reason, all of the appellants' grounds of appeal which call for such assessments are incorrect in law and unsupported by legal prescripts of the MPRDA and NEMA, the 2014 EIA Regulations and the Listing Notices.
- 2.1.66 With regard to the application of the precautionary principle, the Guideline on Need and Desirability states that "a risk averse and cautious approach (the precautionary principle) in the context of the protection of environmental rights is essentially about the assessment and management of risk." In line with this, the impacts and risks associated with the proposed activities are assessed and detailed in the BAR. It is important to note that the aversion of all risks alone is not the only criteria for EAs, and the competent authority has been mandated to make decisions based on the principles of sustainable development and not isolation of singular potential impacts. The application of the precautionary principle (in terms of a risk-

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averse approach) is triggered by two conditions namely:

2.1.66.1 a threat of serious or irreversible environmental damage; and

2.1.66.2 scientific uncertainty as to the nature and scope of the threat of environmental damage.

2.1.67 The proposed activities were determined not to trigger either of these conditions as demonstrated in the findings in the BAR and the recommended mitigation measures contained in the EMPr. There is therefore no basis upon which the precautionary principle can operate in respect of the proposed activities. Equally important to note within this context is that Section 24(b)(iii) of the Constitution states that *"everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."* Section 24 of the Constitution does not aim to protect a pristine environment. It recognises that there are multiple users of the environment, and these users must conduct their operations in a sustainable and responsible way. Equally, the precautionary principle does not aim to protect a pristine environment. None of the grounds of appeals raised by the appellant impugns the assessments and findings in the BAR or the recommended mitigation measures contained in the EMPr and therefore none of the grounds of appeals raised by the appellant represent a valid challenge to the application of the precautionary principle in relation to the proposed activities.

2.1.68 The impact of the no-go alternative was fully assessed in section 9.3.6 of the BAR to reflect the significance of impacts, should the applicants not proceed with the proposed activities. More detail and motivation is provided in section 6 of the BAR with respect to the alternatives considered. The no-go alternative would imply that no seismic survey activities are undertaken. As detailed in the BAR, the no-go alternative would result in the loss of potential opportunity to identify potential oil and gas resources within the project area including potential future contribution to the economy and energy security of South Africa, although the drilling

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sites would remain in their current environmental state. This will negate the potential negative and positive impacts associated with the proposed survey activities. The absence of the seismic survey results would also reduce the accuracy and success rate of potential future exploration activities (including drilling), which could lead to further unnecessary environmental degradation. The only way to mitigate the negative impacts associated with the no-go alternative, from an economic opportunity perspective, is to proceed with the proposed activities and implement appropriate mitigation and management measures to minimise any potential impacts associated with carrying out exploration drilling. The no-go alternative may also result in the following negative impacts:

2.1.68.1 the failure to identify potential oil and gas resources within the project area including potential future contribution to the economy and energy security of South Africa;

2.1.68.2 the missed opportunity to conduct further independent research on the deep-water environments of the West Coast; and

2.1.68.3 loss of limited economic benefits to the local, regional and national economy from the proposed activities

2.1.69 The “no-go” option is regarded as a baseline against which all other alternatives are measured. It is the opinion of the EAP that the no-go alternative has been properly assessed. An EIA cannot and is not a tool for assessing the National Energy Planning and policy.

2.1.70 The ninth appellant's ground of appeal regarding alleged inadequate assessment of the no-go alternative is vague and unsubstantiated. The appellant has not described any specific aspects of the cases referenced relevant to the proposed activities, which the applicant can interrogate and analyse in order to respond meaningfully. Further, the ninth appellant has not challenged any of the findings in the BAR or the mitigation measures contained in the EMPr.

2.1.71 The tenth appellant's allegations are based on a deliberately subjective perspective shaped by personal opinions and biases, as opposed to an objective assessment of the facts presented by the independent EAP and specialists in the BAR and the applicable legal framework and

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processes. have been thoroughly assessed in the BAR.

- 2.1.72 The tenth appellant's submission as to its views of "a proper consideration of the no go alternative" does not accord with the prevailing legal prescripts and is, for reasons fully explained above, incorrect in law. NEMA, the 2014 EIA Regulations and the Listing Notices expressly and sensibly require separate EAs and separate and specific EIA processes for reconnaissance operations, exploration operations and production/development operations. If the Minister intended for the EAP to consider the no go alternative or any other impacts of exploration or production during the reconnaissance phase, then the Minister would not have created separate listed activities but would have combined them into one consolidated listed activity. In addition, the appellant's preference for renewable energy alternatives is noted. The appellants personal preferences and views cannot override the powers of the legislature, government policy or the laws of the country, all of which support and enable the proposed activities and support and enable an energy mix for South Africa so as to ensure its energy security.
- 2.1.73 All reasonable and feasible alternatives and all relevant potential impacts have been thoroughly assessed by the applicant and the EAP in the preparation of the BAR and by the CA in deciding to grant the environmental authorisation.
- 2.1.74 As stated in section 2 of the BAR, the area of interest for the proposed 3D seismic survey is approximately 30 000 km² in extent. The survey exclusion zone represents an area of ~9 000 km² which was surveyed during the 2023-2024 window and will not form part of the new 2025/26 survey area as indicated in Figure 2 of the BAR.
- 2.1.75 The need to apply for a new environmental authorisation for the remaining area is discussed upfront in section 1 of the BAR. As stated in the BAR: In 2022 the applicant required an environmental authorisation to meet with the new legislation under the amended NEMA 2014 EIA Regulations, including the required stakeholder consultation to undertake the seismic surveys as part of Reconnaissance Permit 12/1/043 which covered an area of approximately 30 000km². An environmental authorisation was issued to the applicant by the DMPP on the

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20th of December 2022 under reference number: 12/1/043. It must be noted that although the Reconnaissance Permit 12/1/043 covered ~30 000km², the work programme for reconnaissance permit bearing reference 12/1/043, Searcher committed to acquire up to 10 000 km² 3D seismic survey which was largely achieved, as ~9000 km² was surveyed. Due to the prolonged appeal phase, viable acquisition windows and vessel availability as well as survey window limitations (January – April), Searcher was not able to complete the full 10 000km² intended survey as part of the 12/1/043 Reconnaissance Permit. The ground of appeal is unsubstantiated; nothing raised by the tenth appellant has impugned the transparent, comprehensive and inclusive nature of the need and desirability of the project, which is fully detailed in the relevant sections of the BAR and secondly nothing prevents the applicant from applying for a new environmental authorisation and as fully explained in Section 1 of the BAR. The tenth appellant has therefore not raised a valid ground of appeal.

PASA'S RESPONSE

In their comments to this ground of appeal, PASA submits that:

- 2.1.76 The activities authorised by the environmental authorisation are aligned with the Integrated Resources Plan (IRP) gazetted in 2019, which recognises the need for South Africa to employ a diversified energy mix to reduce South Africa's reliance on a single or a few primary energy sources. Natural gas is considered to meet this objective, to provide the flexibility required to complement renewable energy sources. The IRP specifically states the following:

"Exploration to assess the magnitude of local recoverable shale and coastal gas are being pursued and must be accelerated."

- 2.1.77 Therefore, the project is desirable from the perspective of the IRP, 2019. Furthermore, the exploration of gas as an alternative to coal for energy production has also been recognised as a planning priority; in order to move towards a low carbon economy. The need and motivation for the seismic surveys as described in the EIA report emphasise the point that natural gas is considered as a lower carbon transition fuel to reduce reliance on coal, which is one of the

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major polluters. Use of gas as a transition fuel therefore supports the commitments made by South African government to reduce the carbon footprint.

- 2.1.78 In response to the ninth appellant, the PASA submits that the purpose of the EMPr is to provide mitigation, monitoring and institutional measures to be implemented during operations in order to mitigate impacts of the authorised activity. The submitted EMPr provides mitigation, monitoring and institutional measures that were recommended by specialists who undertook impact assessments for the authorised activity. It is believed that implementation of recommended mitigation measures gives effect to precautionary principle, which seeks to prevent occurrence of adverse impacts. The decision was made to approve the EMPr, because it provides for mitigation and management of identified impacts.
- 2.1.79 The current South African guiding legislation (NEMA), requires environmental authorisation applicants to assess impacts of the activities applied for and not future activities. This is because details of future activities are not known and therefore it is impossible to assess impacts when the detailed of the activity are not known. Furthermore, the current project is for early exploration to determine the existence of the petroleum resources over the selected area. It is therefore not known if the project might end in a production phase. Hence it is impossible to assess impacts of further exploration and production. If the applicant is happy with the outcome of this early exploration, further exploration and production activities can be applied for and be assessed for impacts. The impacts of the current applications for exploration and production are assessed on the individual applications as required in terms of the guiding legislation NEMA. If the outcomes of the authorised activity are positive and encourage further exploration, then a new application for environmental authorisation will be lodged. The assessment process to be undertaken will be determined by the activities applied for.
- 2.1.80 According to NEMA 2014 EIA Regulations, an alternative is a different means of meeting the general purpose and requirements of the proposed activity. It further requires that a motivation should be provided if there is no alternative considered. In this case, the alternative to proceed with the proposed activity was assessed; the entire BAR is based on assessing this

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alternative. An alternative to proceeding with the proposed activity is the no go option. According to section 6.4 of the BAR, the no-go alternative is an alternative to implementation of the authorised activity. Proceeding with the no-go alternative means that all the positive and negative impacts associated with implementation of the authorised activity will not occur. This therefore means that the impacts of the no-go alternative are assessed.

- 2.1.81 The motivation for that was that the benefits of proceeding with the survey (i.e., acquiring data on existing reserves over the area, contributing to the energy mix in the future, energy security, future job opportunities) will not be enjoyed by South Africa. It is the PASA's view that the BAR provided adequate motivation for the no go alternative.
- 2.1.82 The CA is not required to justify the need of the project, but to check if the need and the desirability of the activities applied for is provided and if it is line with the Guideline on Need and Desirability, 2017. Table 6 of the BAR provides an analysis of the need and desirability of the seismic survey in terms of the livelihood and ecosystem services and the ecological and socio-economic aspects. While section 5.2 of the BAR provides the need and desirability analysis in terms of energy provision and data collection. The acquisition of seismic survey data is considered a need in order to understand the potential for future oil and gas production as part of the energy mix of the country going forward. This need is supported from an energy security perspective for the benefit of the country. This project can also provide an opportunity to conduct independent research to overcome potential knowledge gaps. The impacts of the seismic survey on climate change and global warming are difficult to assess due to the nature of the authorised activity, which is of short duration and transient nature. The impacts of the future exploration and production were not assessed, as they are not part of the scope of the current project. If and when application for further exploration or production is lodged to the Department, a detailed assessment of the all potential impacts will be done.
- 2.1.83 In response to the tenth appellant, PASA avers that the claims about the natural gas emitting less carbon dioxide is substantiated by various peer reviewed research articles such as Zárante and Sodré, 2009; Lòpez et al., 2009; Balcombe et al., 2017; Kinnon et al., 2018 to name a few. The statement is also supported in various national policies such as the White

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Paper on Energy Policy, 1998; the National Development Plan, 2012; Integrated Energy Plan, 2013 and Integrated Resources Plan 2019.

- 2.1.84 The area of interest for the previous and the current permit is 30 000 km², however, the holder committed to acquire data over an area of 10 000km², due to limited time provided during the survey window. Further complications experienced during the acquisition period, led to the holder completing 90% of the committed area. The holder is authorised to survey the remaining area and it is believed that more area can be covered since the plan is to commence with the survey in late December. Starting the survey in late December will not cause impacts on the species of interest, because the survey will start on the opposite direction of the migration and spawning paths. These factors were therefore considered in making the decision, as they indicate that there is still a big area that was not surveyed , meaning there is still data that is needed to understand the availability of oil and gas reserves.
- 2.1.85 The impact assessment methodology used in the BAR considered the past and current activities impacts. Which is in line with the currently most reliable gauge for cumulative pressure as provided by Sink et al.,(2009). The cumulative impact for the authorised activity was assessed and was found to be very low.

EVALUATION (Reasons for Decision)

Issue for determination

- 2.1.86 The fundamental issue for determination under this ground of appeal is whether the need and desirability of the proposed reconnaissance survey was adequately assessed and considered, including climate change considerations, South Africa's international and domestic climate commitments, the no-go alternative, cumulative impacts and whether the environmental assessment was required to consider the broader impacts associated with future exploration, production and utilisation of any hydrocarbon resource that may potentially be identified.

Climate Change Consideration

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- 2.1.87 I accept that climate change is a relevant consideration in environmental decision-making. South Africa is a party to the United Nations Framework Convention on Climate Change, the Paris Agreement and other international environmental instruments aimed at reducing greenhouse gas emissions and mitigating the adverse impacts of climate change.
- 2.1.88 I also accept that the 1.5°C temperature goal reflected in the Paris Agreement and subsequent scientific assessments of the Intergovernmental Panel on Climate Change (IPCC) constitutes an important international benchmark in efforts to limit severe and potentially irreversible climate change impacts.
- 2.1.89 The appellants are therefore correct that climate change considerations, greenhouse gas emissions and South Africa's climate commitments are relevant matters that must be taken into account when assessing activities associated with the exploration and potential development of hydrocarbon resources.
- 2.1.90 However, the fact that climate change is a relevant consideration does not, in itself, determine the scope of the environmental assessment required for every proposed activity. The nature and extent of the required assessment must remain informed by the activity for which authorisation is sought and by the information reasonably available at the time of decision-making.
- 2.1.91 I have considered the appellants' submission that the proposed reconnaissance activity is inconsistent with South Africa's obligations under the Paris Agreement, the UNFCCC, the Kyoto Protocol, the Nationally Determined Contribution and related climate commitments.
- 2.1.92 While these commitments are relevant considerations, I am not persuaded that they prohibit the undertaking of reconnaissance activities as a matter of law. They must be considered together with South Africa's existing legislative framework and energy policy instruments, which presently recognise a continuing role for oil and gas exploration as part of the country's energy planning framework.

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- 2.1.93 Accordingly, I do not agree that the existence of South Africa's climate commitments, in itself, renders the proposed reconnaissance activity undesirable or unlawful.

The Assessment of Future Production Impacts

- 2.1.94 A central issue raised by the appellants is that the environmental assessment should have evaluated all stages of the petroleum development lifecycle. These phases include reconnaissance, exploration, extraction, production, transportation, processing and eventual utilisation of any hydrocarbon resource that may be identified.
- 2.1.95 In essence, the appellants contend that because the ultimate purpose of reconnaissance is to facilitate petroleum development, the environmental assessment ought to have assessed the consequences of that entire development chain at the present stage. I have carefully considered this submission.
- 2.1.96 It is perhaps apt for me to point out at this stage that the appellants conflate the scope of the environmental authorisation granted to the applicant (which is for the search for a mineral or petroleum by geological, geophysical and photogeological surveys in the area of interest) with exploration activities, which is for the drilling of exploration wells, and extraction activities, for purposes of production and consumption.
- 2.1.97 I deem it necessary to point out that to undertake reconnaissance, an applicant requires a reconnaissance permit under the MPRDA and an environmental authorisation (EA) in terms of listed activity 21B in Listing Notice 1. Exploration activities require an exploration right under the MPRDA and an environmental authorisation (EA) in terms of listed activity 18 in Listing Notice 2. Production activities require a production right and an environmental authorisation under listed activity 20 in Listing Notice 2. Listing Notice 1 and Listing Notice 2 of the 2014 EIA Regulations require separate authorisations for these three activities, which are regarded as distinct from each other
- 2.1.98 I therefore attach particular significance to the fact that the activity before the competent authority was a reconnaissance application only. The activity did not entail exploration drilling;

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petroleum extraction; petroleum production; transportation infrastructure; processing infrastructure; refining facilities; or fossil fuel consumption. The activity therefore remains limited to the acquisition of seismic data for reconnaissance purposes.

- 2.1.99 I am aware that the MPRDA distinguishes between reconnaissance, exploration and production and recognises that each phase of the process is separate and distinct from the other. In this regard, section 1 of the MPRDA defines and distinguishes between each of the phases as follows:

"Reconnaissance operation means any operation carried out for or in connection with the search for a mineral or petroleum by geological, geophysical and photogeological surveys and includes any remote sensing techniques, but does not include any prospecting or exploration operation other than acquisition and processing of new seismic data;

Exploration operation means the re-processing of existing seismic data, acquisition and processing of new seismic data or any other related activity to define a trap to be tested by drilling, logging and testing, including extended well testing, of a well with the intention of locating a discovery; and

Production operation' means any operation, activity or matter that relates to the exploration, appraisal, development and production of petroleum."

- 2.1.100 In addition, the MPRDA distinguishes between applications for each phase of the process as follows:

2.1.100.1 A reconnaissance permit is applied for and issued in terms of section 75(1) of the MPRDA;

2.1.100.2 An exploration right is applied for and granted in terms of section 80 of the MPRDA; and

2.1.100.3 A production right is applied for and granted in terms of section 84 of the MPRDA.

- 2.1.101 The applicant applied for a granted reconnaissance permit under section 75(1) of the

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MPRDA to undertake reconnaissance activities. This process is concerned with the search for, and preliminary identification of, a mineral or petroleum resource, while production is concerned with the extraction of the discovered oil and gas. Reconnaissance does not, in itself, entail exploration or production of that resource. The proposed reconnaissance activities are limited to seismic surveys and associated activities and do not involve drilling, extraction, processing, production or combustion of petroleum.

2.1.102 Similarly, NEMA and the 2014 EIA Regulations distinguish between reconnaissance, exploration and production as separate legal and regulatory processes. Each phase requires separate authorisations and separate environmental assessment processes. The legislative framework therefore does not treat reconnaissance, exploration and production as a single project requiring a single environmental assessment process. This distinction reflects the fact that the environmental implications, technical processes and information available at each stage are fundamentally different.

2.1.103 I have carefully considered the authorities relied upon by the appellants, including Earthlife Africa¹⁸; Sustaining the Wild Coast¹⁹; Adams²⁰; and South Durban Community Environmental Alliance²¹. Since the judgments relied upon by the appellants were decided, further judicial guidance has emerged regarding the scope of environmental assessment obligations in the context of offshore petroleum activities.

2.1.104 In *The Green Connection NPC and Another v Minister of Forestry, Fisheries and the Environment and Others* (Case No. 5676/2024, Western Cape Division, 13 August 2025), the Court accepted that exploration and production are separate phases, although interconnected. Conversely, in *Aukotowa Fisheries Primary Co-operative Limited and Others v Director-General: Department of Mineral and Petroleum Resources and Others* (Case No. 24492/2024,

¹⁸ *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* (65662/16) [2017] ZAGPPHC 58; [2017] 2 All SA 519 (GP) (8 March 2017).

¹⁹ *Sustaining the Wild Coast NPC and Others vs. Minister of Mineral Resources and Energy and Others*. (2021, December 28) Case No. 3491/2021 in the High Court of South Africa Eastern Cape Division, Makhanda/Grahamstown.

²⁰ *Christian John Adams & Others v Minister of Mineral Resources and Energy & Others*. (2022, March 1) Case No. 1306/22 in the High Court of South Africa Western Cape Division, Cape Town.

²¹ *South Durban Community Environmental Alliance et al. V Minister of Environment, Forestry and Fisheries & Others*, (2021, June 14) Case No. 29433/21 in the High Court of South Africa Gauteng Division, Pretoria.

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Western Cape Division, 13 August 2026) (the *Aukotowa Fisheries case*), the Court emphasised that environmental assessment obligations must be applied to the activity for which authorisation is sought and not to future activities whose scope and characteristics remain unknown.

- 2.1.105 I accept that as recognised in *The Green Connection case*, exploration is undertaken to determine whether commercially exploitable petroleum resources exist and therefore forms part of a broader petroleum development continuum. However, as recognised in the *Aukotowa Fisheries case*, it does not follow that an environmental assessment undertaken for an exploration application must necessarily include a detailed assessment of future production activities that have not yet been defined, proposed or applied for. Whether such impacts can meaningfully be assessed depends on the information reasonably available at the time of the decision and the nature of the activity for which authorisation is sought.
- 2.1.106 I respectfully agree with the reasoning of the judgment in *Aukotowa Fisheries case* where the Court rejected the proposition that a seismic survey authorisation required a detailed assessment of future production impacts which may never materialise. To require a detailed assessment of undefined future production activities at the reconnaissance stage would effectively require an applicant to assess impacts relating to activities for which the relevant project parameters do not yet exist.
- 2.1.107 I am therefore not persuaded that the environmental assessment was legally required to undertake a detailed assessment of speculative future production activities.
- 2.1.108 In assessing the appellants' submissions, I also attach particular significance to the fact that no commercially viable hydrocarbon resource has yet been identified. At this stage it is unknown whether any resource exists, whether any discovery would comprise oil, gas or a combination thereof, whether such a discovery would be commercially recoverable, and whether the applicants would ultimately elect to pursue production activities. Similarly, the location, extent, extraction methods, production volumes, supporting infrastructure requirements, transportation arrangements, operational lifespan and technological processes

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that may potentially be associated with future production activities remain unknown.

- 2.1.109 In the absence of such information, I am not persuaded that a meaningful, reliable or scientifically defensible assessment of the impacts associated with hypothetical future production activities could presently be undertaken. Any attempt to do so would necessarily be based on assumptions and speculation regarding matters that remain uncertain and undefined.
- 2.1.110 Having considered the applicable legislative framework, the information before the competent authority, and the relevant jurisprudence, I am not persuaded that the final EIAR was legally required to undertake a detailed assessment of speculative future production activities as part of the present exploration application. I am satisfied that the environmental impacts associated with the exploration activities for which authorisation was sought were assessed in accordance with NEMA and the 2014 EIA Regulations.

Future Benefits versus Future Harms

- 2.1.111 The appellants submit that the BAR relies upon the potential future economic benefits of petroleum development in motivating need and desirability while simultaneously refusing to assess the environmental impacts associated with future production activities. I have considered this submission carefully. In my view, this does not constitute an inconsistency.
- 2.1.112 The BAR does not treat future economic benefits as certain outcomes. Rather, it identifies potential benefits that may arise if commercially viable resources are identified and developed. Similarly, it recognises that the environmental impacts associated with future production activities remain uncertain and cannot presently be assessed with meaningful accuracy. The identification of possible future benefits does not, in my view, require a detailed project-specific assessment of hypothetical future production activities whose nature and scale remain unknown.

Natural Gas as a Transition Fuel

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- 2.1.113 The appellants strongly challenge the proposition that natural gas may function as a transition fuel within South Africa's energy system and contend that the economic and climate assumptions underlying that proposition are flawed. I accept that this remains the subject of substantial international debate. However, the question before me is not whether natural gas should ultimately form part of South Africa's future energy mix. That is fundamentally a policy question. The question before me is whether the competent authority failed to consider relevant information in evaluating the proposed reconnaissance activity. The information before me indicates that the BAR considered: competing views regarding natural gas; South Africa's existing policy framework; climate change considerations; and energy security considerations.
- 2.1.114 In these circumstances, I am not persuaded that the competent authority acted irrationally by taking account of the possibility that gas may continue to play a transitional role within South Africa's evolving energy framework.

Cumulative Impacts

- 2.1.115 The appellants further contend that the environmental assessment failed to evaluate cumulative climate impacts associated with future hydrocarbon development. I have considered this submission. The cumulative impact assessment required under NEMA and the 2014 EIA Regulations must be directed toward impacts that are reasonably foreseeable on the information available at the time of decision-making. While broad observations can be made regarding the contribution of fossil fuel development to climate change generally, I am not persuaded that a meaningful project-specific cumulative assessment of future production-related greenhouse gas emissions can presently be undertaken where no commercially viable resource has yet been identified; the nature of any future production activity remains unknown; the scale of any future production activity remains unknown; and the quantity of any potentially recoverable resource remains unknown.
- 2.1.116 Accordingly, I am not persuaded that the cumulative impact assessment undertaken was

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deficient in this regard.

- 2.1.117 I have reviewed the Basic Assessment Report (BAR) and note that sections 4.8.5 and 4.8.6 thereof consider the country's national planning and policy context in relation to climate change, in particular, the Paris Agreement under the United Nations Framework Convention on Climate Change and the National Climate Change Response White Paper. Page 40 of the BAR concludes as follows:

"From a climate change perspective, it is not currently possible to accurately assess the risks associated with oil and gas activities, given that the specific details of these potential future activities are not known and therefore climate change impacts would need to be assessed in detail during any subsequent Scoping and EIA processes for any potential subsequent oil and gas production projects."

- 2.1.118 I note from the public participation record (Appendix B to the BAR) that the EAP also notified key stakeholders within the Department of Forestry, Fisheries and the Environment of the application for environmental authorisation, including, but not limited to, the following Chief Directorates within the Department: International Climate Change Relations and Negotiations; Climate Change Adaptation; and Climate Change Monitoring and Evaluation.

- 2.1.119 I further take note of the applicant's and PASA's response that, due to the nature of seismic surveys, there are no significant GHG emissions directly associated with the proposed activities and no significant climate change vulnerability risks.

- 2.1.120 I find that the climate change assessment undertaken falls within the scope of the proposed project and is appropriate having regard to the nature and extent of the proposed reconnaissance activities. In the circumstances, I find that the assessment is not required to extend to a full life-cycle assessment of GHG emissions associated with hypothetical future exploration, production or combustion activities that do not form part of the proposed project. Such impacts would appropriately be assessed if and when the relevant activities are proposed and become the subject of the requisite environmental authorisation processes.

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2.1.121 Section 24(4)(b)(i) of NEMA requires assessment procedures to investigate the potential consequences of impacts of the alternatives to the listed activities or specified activities applied for. In other words, to the seismic survey, and not to unrelated future activities that are not planned as yet. Production does not come into play, as it is not yet even known what results, if any, the seismic survey may yield. Section 24O(1)(b)(i) of NEMA similarly requires the competent authority to have regard to any pollution, environmental degradation, likely to be caused if the application is approved or refused. Section 2(4)(a)(vii) of NEMA codifies the precautionary principle that a “risk averse and cautious approach” must be adopted, which takes into account the limits of current knowledge about the consequences of decisions and actions.²² In the *Aukotowa Fisheries* case,²³ the court held further that:

“...if the applicant’s complaint were to be sustained, TGS would be subject to a loop of impossible knowledge requirements: it will not be able to obtain an environmental authorisation for its intended reconnaissance until it conducts an impact assessment in respect of extracting hydrocarbons; it will never be able to conduct such an impact assessment until it has completed its reconnaissance; and it will therefore never be able to get the authorisation for the reconnaissance activities. This is plainly absurd. It is inconsistent with the regulatory framework. It is also pointless because any activity beyond seismic surveying will require its own authorisation and therefore its own updated and separate impact assessment.”

Need and Desirability

2.1.122 I have also noted that section 5 of the BAR considered the need and desirability of the activity, including the long-term benefits of oil and gas discoveries. It confirms that it is not currently possible to accurately assess the risks associated with exploration and production activities, since it cannot be said with absolute certainty that these activities will be undertaken in the

²² *Aukotowa Fisheries Primary Co-operative Limited and Others v Director-General: Department of Mineral and Petroleum Resources and Others* (24492/2024) [2026] ZAWCHC 408 (13 August 2026) at para 69 to 71.

²³ *Aukotowa Fisheries Primary Co-operative Limited and Others v Director-General: Department of Mineral and Petroleum Resources and Others* (24492/2024) [2026] ZAWCHC 408 (13 August 2026) at para 73.

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future. The proposed 3D seismic surveys would allow the applicant to determine if there is an economically viable gas resource (natural gas including Helium) available in the area, and any future intention to undertake production activities would require a separate application for environmental authorisation, environmental assessment, and public consultation process. Section 5.2 of the BAR motivates the need for seismic survey data as follows:

- An opportunity to identify hydrocarbon reserves that could contribute to the South African energy mix in the future and that the Department is compelled to consider all relevant policies when considering the environmental authorisation.
- Natural gas emits 30% and 45% less carbon dioxide than burning oil and coal and can serve as a transition fuel on the path to the carbon-neutral goal of the Paris Agreement. This would secure the country's energy supply through diversification, while reducing greenhouse gases emissions (which drive long-term climate change) by reducing reliance on coal.
- The benefits of oil and gas could also include a significant amount of job creation, especially if local beneficiation takes place.
- Seismic surveying is not only used for petroleum and natural gas exploitation and development, it can in certain instances also be used for development of offshore wind, geothermal energy, and low-carbon solution such as carbon capture and storage, and also more generally for providing more insight and understanding into the regional geology of the area for scientific purposes.
- It can also provide an opportunity to conduct independent research on how fish species on the West Coast such as snoek respond to seismic surveying, which could be useful for similar projects and applications that may take place in the future.

2.1.123 In respect of the tenth appellant's submission that it is unclear how the applicant intends to overcome the difficulties previously experienced in undertaking the seismic survey, particularly given that the proposed survey area is more than twice the size of the area previously applied for and that the survey remains subject to the same acquisition and survey-window limitations, I note that the need to obtain a new environmental authorisation to survey the remaining area is expressly addressed upfront in the Executive Summary and Section 1 of the BAR. The

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applicant's reconnaissance permit was due to expire on the 10 November 2024 and it consequently submitted an application for environmental authorisation afresh for the same previously approved activity over the same area. The area of interest for the proposed 3D seismic survey is approximately 30 000 km² in extent, however, an area of approximately 9 000 km² (largely in the northern section) was surveyed during the 2024 (January – April) survey season and will be excluded from Full Power Source data acquisition during the proposed second survey period. The fact that the applicant's previous permit and associated environmental authorisation lapsed due to practical constraints relating to viable acquisition windows, vessel availability and the January–April survey window does not, in itself, establish that the proposed activity is unnecessary or undesirable. Nor does the lapse of the previous authorisation preclude the applicant from submitting a fresh application for environmental authorisation in respect of the proposed activity.

2.1.124 I further note that, given the nature of seismic surveying, the activity is capable of being undertaken progressively or in discrete survey areas, and an inability to complete the entire survey area within a particular survey window does not necessarily render the activity unfeasible. In the circumstances, I do not consider the previous difficulties experienced by the applicant, without more, to be determinative of the need and desirability of the proposed activity.

2.1.125 In assessing need and desirability, I have considered not only the potential future benefits identified in the BAR, but also the environmental risks associated with the proposed reconnaissance activity itself, the policy context, the no-go alternative, and the fact that future exploration and production activities remain subject to separate applications and assessment processes.

2.1.126 I am accordingly satisfied that the need and desirability of the proposed project was therefore assessed in the BAR and considered by the competent authority when making the decision.

The No-Go Alternative

2.1.127 I am satisfied that the consequences of not proceeding with the activity were considered. The

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no-go alternative would avoid the temporary impacts associated with the proposed reconnaissance activities but would also preclude the acquisition of information regarding the existence of a petroleum resource in the area. I am satisfied that the no-go alternative was identified, assessed and considered by the competent authority.

2.1.128 There is also evidence in Chapter 6 of the BAR that the applicant identified and considered alternatives, including location, layout and technology alternatives. The no-go alternative was considered under paragraph 6.4 and 9.3.6 of the BAR. Moreover, I note from Section 6.1 of the BAR that the survey area is considered an optimal area for such a survey due to its location well offshore, outside the fisheries ring-fence area, and the high likelihood that it contains significant hydrocarbon reserves.

2.1.129 I am also satisfied that the applicant was not required to consider alternatives in regard to alternative energy sources. In the environmental authorisation associated with an application for a reconnaissance permit, it is not relevant to consider alternative energy generating options.

2.1.130 This ground of appeal is without merit and is accordingly dismissed.

2.2 SECOND GROUND OF APPEAL: MARINE ECOLOGY AND UNDERWATER NOISE

Appellant's Submissions

The first, second, third, fourth, fifth, sixth, seventh, eighth, ninth and tenth appellants submit as follows:

2.2.1 The first appellant submits that the environmental authorisation (under Appendix 1: Reasons for Decision, with specific reference to section 3: Key Findings) states that the technology poses potential impacts on fisheries and marine fauna, however, the majority of the potential impacts were assessed to range from low to very low significance with mitigation. The appellant contends that none of the mitigation measures are guaranteed, because they have not been tested and tried. They are just predictions of what can be done for the potential

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impacts. The mitigation measures have not been implemented, just prescribed, so therefore it is uncertain if these mitigation measures will be effective to minimise or limit impacts on fisheries and marine fauna. Seismic surveys can cause hearing loss to marine species, disturb essential behaviours like feeding and breeding and prohibit communication between whales and dolphins. Some fish species display physical damage to hearing organs and signs of stress. Fish behaviour may also change. Some leave the regular feeding and breeding area, that will have an effect on the fishing grounds and negative impacts on important prey species.

2.2.2 The second appellant states that although the proposed 3D seismic survey is a widely used oil and gas exploration technology, it is not regarded as non-intrusive in nature contrary to what is stated. The technology poses serious potential impacts on fisheries and marine fauna, particularly inter alia to cetaceans (who use sound to communicate over very long distances), fish eggs and phytoplankton. Whilst some of the potential impacts were assessed in the reports, not all of them were. They were additionally alleged to range from low to very low significance. The assessment is biased and has been shown to be factually incorrect in many research papers overseas.

2.2.3 Whilst there remains a risk, the outcomes of such a risk materialising are environmentally lasting, irreversible and devastating and cannot be mitigated or reduced through financial compensation, given that restoration of a huge biomass that has been destroyed is impossible. The affected biomass will be lost in perpetuity. In terms of the widely accepted prevention principle and the constitutional rights to a clean and safe environment the permit ought to be withdrawn.

2.2.4 The reliance of observers to detect cetaceans in proximity of the main survey ship is substantively and substantially inadequate and prone to human errors which could result in catastrophic consequences. There are no mitigating measures proposed to prevent human errors. Additionally there is no way of detecting underwater cetaceans swimming in proximity of impacted areas.

2.2.5 The reports deals with large marine life but does not deal in any way with small food sources

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for the impacted marine life such a phytoplankton or with fish eggs or with spawn and has not produced any literature showing that these will not be severely impacted by the seismic survey activities

- 2.2.6 The third and fourth appellants submit that new research shows that seismic blasting affects penguins who are now on the critically endangered list. The International Union for Conservation of Nature (IUCN) has uplisted the African Penguin from Endangered to Critically Endangered, underscoring the species' extremely high risk of extinction in the wild. The bird has already lost 97% of its population and could be extinct in less than 4,000 days if nothing changes.
- 2.2.7 The surveys are planned around 2 Marine Protected Areas (MPAs). This proximity poses a significant risk to these sensitive zones, potentially disrupting key breeding and conservation efforts.
- 2.2.8 Research indicates that seismic survey activities can cause significant disturbance to marine life, including disorientation and injury to marine mammals, which rely heavily on sound for navigation and communication. Studies have shown that such disruptions can have long-term ecological impacts, affecting not just individual species but the entire marine food chain.

Effects of Underwater Noise on Marine Species

- 2.2.9 The fifth appellant submits that globally, seismic surveys' environmental impacts and consequences are better documented, although not uniform in results or widely accepted within all sectors. The primary mitigation measures for seismic surveys in South Africa include soft-starts, which is a gradual and systematic increase in power of the airgun array undertaken to warn and drive mobile marine species, such as cetaceans (whales and dolphins), seals, flightless birds and turtles away from the sound source before the full-power airgun blasts begin, thus attempting to minimise the negative effects of the airgun blasting activity. Various studies contest this assumption (McCauley et al. 2000; Weilgart 2013; Dunlop et al. 2016) and have revealed a growing concern for animals that are unable to avoid or out-swim the airgun

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arrays.

- 2.2.10 Animals use sound critical to their life cycles (Jasny et al. 2005) in three ways, by actively producing sound (Tyack 1981), by listening to sounds emitted by other living organisms (Clark et al. 2009; Van Opzeeland 2010) and taking cues from physical or non-living factors producing sounds, contributing to the ambient background noise, such as wind, waves, swell, bubbles, currents, turbulence, earthquakes, rainfall, ice cracking or breaking (Hildebrand 2005). Many marine animals produce sound for communication, reproduction, aggression, defence mechanisms, antagonistic interactions, courtship, group coordination, orientation, navigation, and prey identification (Hildebrand 2005). They rely on producing a sound that is heard while hearing a sound and interpreting the sound for their survival.
- 2.2.11 Various physical responses to acoustic disturbance have been documented, with physical responses including soft tissue damage (Balcom and Claridge 2001), embolisms (Dolman and Simmonds 2005), damage to organs used in balance (André et al. 2011), concussions in penguins (Cooper 1982), haemorrhaging (Evans et al. 2001) and decompression sickness (Fernández et al. 2005). Hearing impairment in the form of Temporary Threshold Shift (TTS) or Permanent Threshold Shift (PTS) has also been reported (Hildebrand 2005). Threshold shift refers to an increase in the minimum sound level required for an animal to hear a sound. A TTS is followed by successful recovery to normal hearing thresholds after a given period of time in the absence of that sound, while PTS is when the sensory hair cells in the inner ear are permanently damaged and lost making recovery impossible (Weilgart 2013).
- 2.2.12 Stress caused by disturbance is associated with a change in body chemistry (Jasny et al. 2005) and can be equally disruptive as physical damage. Stress has implications on sexual maturation, inhibits growth, reproduction and general survival ability (Pickering 1992; McCormick 1999; Consten et al. 2001). Perceptual effects can occur when there is an interference of sounds of interest to a specific animal but are being drowned out or masked by anthropogenic noise. The impact of this in the long term could have implications on breeding populations, thus on reproduction within a population (Erbe 2001). Many animals may have the ability to counteract this and make minor changes to their vocalisations and behaviour;

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however, these modifications may come at a cost in terms of energy expenditure (Tyack 2008) and are likely to reduce breeding productivity of the population. This is of particular concern for species that are threatened.

- 2.2.13 Behavioural responses to noise are dependent on various factors, such as age, sex, presence of offspring, location and an individual animals' previous encounter with a specific sound or noise. Behavioural responses may include modification of vocal behaviour, displacement from important habitats, and other subtle responses, including increased breathing rates, change in dive duration, time spent at the surface, rapid or erratic movements (Bowles et al. 1994; Lesage et al. 1999; Williams et al. 2002; Hastie et al. 2003; Ng and Leung 2003; Aguilar de Soto et al. 2006). These all with potentially high energetic costs (Williams et al. 2006; Koper and Plön 2012).
- 2.2.14 Most scientific research on the impacts of seismic surveys has been conducted on cetaceans, and as a result, most mitigation measures are to protect these animals. In South Africa, this is no different, despite the lack of regulations or guidelines specific to South African conditions. It is becoming more and more evident that mitigation measures are not adequate (Weilgart 2013). In the Gulf of Mexico, it was recorded that ~250 male fin whales appeared to stop singing for several weeks to months during a seismic survey. These animals resumed singing within hours or days after the survey ended (IWC 2007). The assumption is that male fin whales use vocalisations for reproduction by finding and attracting mates (Croll et al. 2002); it can only be assumed that such an effect would be biologically significant (Weilgart 2013). In addition to this, a blue whale ceased calling in the presence of a seismic survey at 10 km away (Macdonald et al. 1995). Conversely, a different group of blue whales appeared to have the opposite reaction. They changed their vocalisations (De Lorio et al. 2010) by calling consistently more on days when the seismic surveys were actively ongoing, suggesting that seismic survey noise interfered with important signals used in their social interactions and feeding (De Lorio et al. 2010).
- 2.2.15 Other reactions to seismic airguns can be subtle or hard to detect (Weilgart 2013) and it has been found that Sperm whales in the Gulf of Mexico did not appear to avoid a seismic airgun

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survey area but reduced their swimming effort and their tendency to reduce foraging effort (Miller et al. 2009). It has also been documented that as a result of changes in behaviour, the result could be lower reproductive rates and have negative consequences for the population (Miller et al. 2009). In comparison, bowhead whales showed no avoidance or change in vocalisations in the area of seismic surveys; however, their dive duration was shorter (Richardson et al. 1986). In Brazil, a reduction in cetacean species diversity during 2000 and 2001 was noted with the increased occurrence of seismic surveys in the area being implicated in the possible cause of these animals vacating the area (Parente et al. 2007). In other areas, marine mammals have been recorded to avoid seismic noise by leaving an area (Castellote et al. 2012; Weir 2008; Stone and Tasker 2006). The long-term impacts of various changes in behaviour are largely unknown but potentially impact their ability to feed and/or reproduce as in some species, these life-history stages are site or habitat-specific.

- 2.2.16 McEwen and Wingfield (2003) suggested that all organisms must gather energy for growth and reproduction throughout their life cycle and that organisms must retain reserves for predictable changes such as seasons, and challenges that are less predictable such as disturbance, predation pressure, or social conflict. Often colloquially, this is referred to as the "fitness" of the animal. The accumulated cost in the balance between energy intake and demand is called the 'allostatic load', of physiological and behavioural mechanisms that enable allostasis or adaptation to these changes. McEwen and Wingfield (2003) use the word "allostasis" to signify mechanisms that allow an organism to regain equilibrium while dealing with external challenges; if energy demand is more than intake, then animals may activate a survival mode that may increase energy available, reduce energy demand, or both, to regain its energy balance. Implications for individuals and populations of this energy imbalance are unknown.
- 2.2.17 Several studies have reported negative impacts of acoustic signals from airguns on zooplankton (small, aquatic microorganisms living in the water column, including crustaceans, larvae, juvenile fish, juvenile invertebrates, eggs etc.) from more than 10 m away (Kostyuchenko 1972; Kosheleva 1992; Parry et al. 2002) with some laboratory experiments on lobster larvae showing no impact at all (Day et al. 2016). However, Christian et al. (2003),

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showed retardation in some individuals in the development of snow crab eggs after being exposed to certain sound levels.

- 2.2.18 The effects of seismic noise on zooplankton were brought under the spotlight when McCauley et al. (2017) presented evidence from an in-situ study that suggested that seismic surveys cause significant mortality to zooplankton populations. Zooplankton, unlike vertebrates, do not have hearing structures (although they can sense pressure change) and their bodies are generally the same density as the surrounding water, so sudden pressure changes associated with seismic activities were presumed not to cause physical damage (Parry and Gason 2006). McCauley et al. (2017) disputed this and has shown zooplankton mortality at distances of up to 1.2 km from the sound source.
- 2.2.19 Similarly, inconsistent findings occur with fish assemblages. The impacts on fish assemblages are difficult to interpret because of multiple factors at play, including but not limited to the ability of a species to move from an area as well as the receiving habitat. We acknowledge the validity of the results presented by Meekan et al. (2021) which highlights that exposure to an experimental seismic source did not have an impact on the assemblage of tropical demersal fishes found along the northwest shelf of Western Australia. However, it must be noted that the findings have been stated to be applicable only to other habitats with similar physical environments, in particular similar water depths (50 – 70 m), highlighting the need for South African-specific and local research to be undertaken.
- 2.2.20 A global review of the effect of seismic activities on fish and invertebrates by Carroll et al. (2017) acknowledged the limits of the available research due to experimental design, or to the focus on single species, which prevents extrapolation to other regions, other seismic surveys, species, or biological responses. In addition, they highlighted a serious concern, that there was a lack of research focused on confounding effects and multiple stressors, therefore potential impacts of seismic surveys which had previously been identified may be reflective of under-estimation or over-estimation and would depend on the type of interaction (i.e., synergistic, additive, or antagonistic).

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2.2.21 Furthermore, the indirect effects of seismic activity on cetaceans are a concern. It is well known that the productivity and health of the oceans are under-pinned by marine plankton (Raymont 1983; Alcaraz & Calbet 2009). While forming the basis of the food webs, plankton has been implicated in links to climate change via their role in iron fertilisation and carbon sequestration through whales foraging on krill and subsequent defecation (Smetacek and Nicol 2005; Smetacek 2008; Nicol et al. 2010). In 2010, Pershing et al. suggested that over-fishing of large fish and commercial whaling had compromised the ocean's ability to store and sequester carbon, thus contributing to climate change. They indicated that populations of large baleen whales now store 9.1×10^6 tonnes less carbon than before commercial whaling and that protecting whales (and other large over-exploited species), would be a form of a carbon management scheme. The cascading and knock-on effects of seismic survey impacts between the upper (cetaceans) and lower reaches (plankton) of the food web, as each are being impacted are unknown. McCauley et al. (2017) noted that the ramifications of compromised larval recruitment could be massive for higher predators and for ocean health as a whole.

African Penguins, Sea Turtles and Other Species of Conservation Concern

2.2.22 Despite seismic surveys having been undertaken for decades in South African waters, together with the knowledge that some impact to marine fauna does indeed occur, there remains very little scientific research on the effects of seismic surveys, and in addition there are no legislated guidelines for seismic surveys in South African waters (Purdon 2018). Considering this, there are studies that have been done both locally and internationally that can be translated into the South African context. Most research is centred around the behavioural and physiological impacts of seismic surveys on cetaceans. However, in recent years, attention has been given to the impacts of seismic surveys on diving birds and sea turtles, in that, these animals can be directly affected by seismic survey gear and equipment or indirectly by affecting their prey distribution. These impacts of 2-D and 3-D seismic surveys on marine animals in the offshore waters are further discussed below.

2.2.23 In South Africa, only a single focused field study on the impact of seismic surveys has been

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undertaken. This study, off Gqeberha, was within the foraging area of the endangered, endemic African Penguin (*Spheniscus demersus*). Pichegru et al. (2017) demonstrated that penguins avoided their preferred foraging areas during seismic surveys and foraged further from the survey vessel when in operation. Upon termination of seismic surveys, the penguins reverted to their normal behaviour (Pichegru et al. 2017), a behaviour which was also observed in Gray whales (*Eschrichtius robustus*) off Sakhalin Island in Russia (IWC 2005). However, the long-term effects on populations of this temporary retreat of the area are unknown. Given the results of this study by Pichegru et al. (2017), strict management measures and decisions on seismic survey activities should have been established in South Africa. Furthermore, the cumulative effect of multiple, concurrent seismic surveys within the region may cause cumulative impacts.

- 2.2.24 Significant impacts on sea turtle species are a concern. Adult turtles may be less vulnerable to sound damage than cetaceans as the air spaces in their cochlear are smaller than those in cetaceans, making them less sensitive to sound shockwaves (Popper et al. 2014). However, while studies have shown that adult sea turtles have a moderate ability to move from an area being surveyed (Lenhardt 1994; O'Hara and Wilcox 1990), they are prone to TTS after exposure to sound within 1 km of a sound source, with signs of recovery only two weeks after injury (Lenhardt 1994). In a study undertaken on captive turtles, it was found that loggerhead turtles (*Caretta caretta*) responded to sound by swimming to the surface and remaining there or staying slightly submerged (Lenhardt 1994), as this area is regarded as a sound shadow, and is hypothesised as being where sound waves cancel each other out and the noise is at a minimum. Cummings et al. (2004) disputed this saying that although near the surface could be a place where animals take refuge, they are not in a 'zone of silence.'
- 2.2.25 With an increasing exposure of sound levels, the behaviour of caged green (*Chelonia mydas*) and loggerhead (*Caretta caretta*) turtles increased their swimming speed, potentially showing agitation to sound (McCauley et al. 2000). Turtle behaviour is difficult to interpret (DeRuiter and Doukara 2012), given that some studies have reported that turtles do not display any signs of distress (Pendoley 1997).

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- 2.2.26 There are five resident sea turtle species that migrate within South African waters: Endangered green turtles (*Chelonia mydas*); Critically Endangered hawksbills (*Eretmochelys imbricata*); regionally Near Threatened loggerheads (*Caretta caretta*); regionally Critically Endangered leatherbacks (*Dermochelys coriacea*); and vagrant Vulnerable olive ridleys (*Lepidochelys olivacea*) (Le Gouvello et al., 2024). There is cause for concern of harm to these threatened species of sea turtles both at the population as well as the species level.
- 2.2.27 Sea turtles employ nest site fidelity, essentially returning to the beach where they were born to lay eggs. In South Africa, the leatherback and loggerhead nesting trends have been monitored since 1965, within their rookeries in northern KwaZulu-Natal (KZN), giving clear indications of local population levels. Both species are already under significant pressure offshore including being caught as bycatch in fishing gear and having to contend with increasing plastic pollution. Current estimates of loggerhead turtles are low, with an estimated 801 and 615 adults nesting in the KZN rookery during the 2021/2022 and 2022/2023 seasons, respectively (Figure 1; Bachoo, 2022; Bachoo, 2024). Of more concern is the leatherback turtle, in which only 96 identified individual adults nested during the 2021/2022 season and declined to 46 individuals in 2022/2023 (Figure 2; Bachoo, 2022; Bachoo, 2024). Both populations have shown extremely slow recovery since conservation measures in South Africa were implemented, and further anthropogenic loss could, in our opinion, constitute irreparable harm.
- 2.2.28 The migratory lifestyle of sea turtles is mostly attributed to its complex life-cycle and their innate nature to return to their natal areas for nesting (Pendoley, 1997). Nesting of both leatherback and loggerhead turtles, on the beaches of the iSimangaliso Marine Protected Area (KwaZulu-Natal, South Africa) and Ponta do Ouro (southern Mozambique), occurs between October and March, with a peak from December to January (Table 1; Nel et al., 2013; Le Gouvello et al., 2020). Turtle hatchlings are likely to enter the ocean during the first quarter of the year, where they feed off plankton and remain in the open ocean currents until their development is complete (Luschi et al., 2003; Le Gouvello et al., 2024). It is almost impossible to track these 'tennis ball sized' hatchlings, in addition to their high mortality rates and rapid growth, further complicating the attachment of tracking devices. The result, is termed the "lost years", where it remains unclear where sea turtles <10 years old occur before

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returning to their shallow water foraging grounds (Musick and Limpus, 1997; Luschi et al., 2003). The movement of sea turtle hatchlings and early juveniles from coastal waters into the open pelagic ocean is strongly influenced by currents, which aid in moving them away from inshore predatory waters and prevents them from being cast higher ashore (Luschi et al., 2003). The current systems serve as the optimal environment for hatchlings and juveniles where their passive dispersal movement is a consequence of drifting (Luschi et al., 2003).

- 2.2.29 A recent scientific investigation by Le Gouvello et al. (2024) employed modelling techniques to examine the trajectory of neonate (<1 year old) turtles from hatching to one years old, using high-resolution ocean models in conjunction with particle tracking simulations. Juvenile sea turtles, both loggerhead and leatherback, leaving the iSimangaliso Marine Protected Area and Ponta do Ouro, take approximately 200-365 days to reach the west coast region (Figure 3a & 3b; Le Gouvello et al., 2024). Considering the loggerhead and leatherback movements and duration from the east coast to the west coast, raises the question of whether this can be considered a migration behaviour (Luschi et al., 2003). This means that due to the annual introduction of new hatchlings between January and March, and their movement around the coastline from east to west, it is indicative of a high likelihood that juvenile sea turtles will occur throughout the year (Table 1; Figure 3a & 3b; Le Gouvello et al., 2024).
- 2.2.30 Satellite tracking data of stranded, rehabilitated and released sea turtles of various species (loggerhead, green, olive ridley) and sizes (juvenile to sub-adult) further confirms their presence on the west coast year-round (Two Oceans Aquarium Foundation, Bayworld, Port Elizabeth and South African Association for Marine Biological Research, unpublished data; Figure 4a, 4b, 4c). The routes of sea turtles from satellite tracking often show direct paths to their destination, but individual turtles may only arrive at their destination after a long detour, making their movements unpredictable.
- 2.2.31 The presence of sea turtles at different stages in their life history, are present throughout the year along the west coast and likely within the AOL (Table 1; Le Gouvello et al. 2024; Satellite tracking data, Bayworld, Port Elizabeth and South African Association for Marine Biological Research, unpublished data).

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- 2.2.32 These sea turtles live out their early years on and close to the surface, only being able to dive to depths of 2-3 m. These juveniles and hatchlings cannot swim effectively or fast enough away if in close proximity to the sound source. Up to now, there are no effective mitigation measures which can be offered to mitigate the impact of sound/airgun blasts on the smaller turtles, and this is of extreme concern, not only due to their inability to evade the radius of blasts, but also since they will not be readily visible to visual observers due to their small size and behaviour in the water. Given that the success rate of visual observations by MMOs for large species such as humpback whales is only 44% of the time (Wilkinson, 2021), it renders this method of mitigation ineffective for smaller animals such as sea turtles, but especially for post-hatchling (palm-sized) and juvenile (dinner plate-sized) turtles. The difficulty in visually detecting these animals in the offshore environment is further corroborated by turtle researchers (Musick and Limpus 1997).
- 2.2.33 A further potential physical impact for sea turtles from seismic surveys is entanglement and/or entrapment in equipment (Nelms et al., 2016). It was noted by Weir et al. (2007) that off the west coast of Africa prior to the turtle nesting season, an influx of sea turtles are observed during seismic surveys, as well as in the vicinity of seismic vessels and its towed equipment (Ketos Ecology (2009). Turtles tend to bask on the ocean surface to slow down metabolic processes and conserve energy during hot and favourable weather conditions (Ketos Ecology, 2009). Therefore, turtle startle dive responses to seismic vessels and equipment may be delayed and occur only after visual detection of approaching objects at close range (< 1 m) (Ketos Ecology, 2009). This basking behaviour of turtles can leave them vulnerable to collisions with dilt floats and tail buoys, which are usually located several kilometres astern the ship and pose a challenge of observing and monitoring for turtle entrapments (Ketos Ecology, 2009). In addition, loggerhead, olive ridley and Kemp's ridley (*Lepidochelys kempii*) are likely species falling victim to tail buoy entrapments while foraging alongside a seismic cable, inevitably causing the fatality of trapped turtles (Ketos Ecology, 2009).
- 2.2.34 Their presence, coupled with an inability to mitigate the risk of seismic surveys on sea turtles, means that post-hatchling and juvenile sea turtles are at significant risk of harm. Furthermore,

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with their limited ability to swim and avoid obstacles, pelagic loggerhead and leatherback juvenile turtles are highly vulnerable to seismic surveys because of direct injury or mortality from the towed hydrophone streamers (Le Gouvello et al., 2024). In 2020, Le Gouvello et al. reported that female loggerhead turtle size is declining in South Africa, even though their nesting grounds are protected. Therefore, population growth is not always guaranteed if survival is not ensured at other life stages at sea (Crouse et al. 1987; Crowder et al. 1994; Chaloupka and Limpus 2001; Bjørndal et al. 2005; Margaritoulis 2005; Mazaris et al. 2006), and although coastal marine protected areas do work in protecting sea turtles (Nel et al., 2013; Le Gouvello et al., 2020) there is a need for integrated management strategies (Le Gouvello et al., 2020), to protect threatened species.

Cetaceans, Whale Populations and Knowledge Gaps

2.2.35 The BAR highlights that occurrences and encounters with various cetacean species are inevitable, all of which are protected in South African waters. Information supplied on cetaceans is largely based on observational data, i.e. Marine Mammal Observer (MMO) surveys (Figures 31, page 83; Basic Assessment Report). These data are somewhat outdated and do not account for the population dynamics of the cetaceans present in the reconnaissance area or area of interest (AOI). To understand the risk of seismic surveys on cetaceans, the population status of species of concern needs to be established. This requires many years of research and depends on the temporal trends for each marine mammal species (Nowacek et al., 2015) specific to the AOI. Considering this, developing other metrics for cetacean population status, such as current distribution, ranging patterns, population structure, and body condition, should be a priority (Nowacek et al., 2015). Furthermore, without a proper understanding of the ecosystem within and surrounding the AOI, as highlighted in the BAR, it is impossible to assess the impacts of seismic noise on prey distribution, which ultimately influences the predator populations and distributions, such as with cetaceans (Nowacek et al., 2015).

2.2.36 Behavioural responses to noise are dependent on various factors, such as age, sex, presence of offspring, location and an individual animals' previous encounter with a specific sound or noise. Behavioural responses may include modification of vocal behaviour, displacement from

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important habitats, and other subtle responses, including increased breathing rates, change in dive duration, time spent at the surface, and rapid or erratic movements (Bowles et al. 1994; Lesage et al. 1999; Williams et al. 2002; Ng and Leung 2003; Aguilar de Soto et al. 2006). These all with potentially high energetic costs (Williams et al. 2006; Koper and Plön 2012). The time period, frequency and magnitude of a behaviour modification caused by anthropogenic disturbance, with its associated long-term implications, at a population level, remains unknown, and there remains no evidence to suggest that the change in behaviour is not detrimental.

2.2.37 Although, high-frequency hearing cetacean groups containing delphinid species (e.g., bottlenose dolphin, common dolphin, and pilot whale, beaked whales, sperm whales, and killer whales), are perceived to be less likely to be affected by seismic noise (Southall et al., 2019), physiological effects on deep-diving toothed whales having been noted. A well-documented physiological effect of deep diving toothed whales to anthropogenic noise is the formation of nitrogen gas bubbles in the bloodstream, which are caused by these animals rising to the surface too quickly, forming lesions and fat embolisms in the blood vessels and parenchyma of vital organs (Purdon 2021; Peng et al. 2015). Similarly, bottlenose dolphins (*Tursiops truncatus*), exposed to seismic airgun noise (44–207 kPa or 213–226 dB re 1 μ Pa peak pressure) presented with a significant increase in aldosterone, subsequently affecting the maintenance of homeostasis and physiological acclimation to external stressors, whereas a decrease in monocytes can impact the immunity of the animal (Hart et al., 2015; Peng et al., 2015). The stress response of marine mammals to anthropogenic noise at great depths can have consequential effects, such as strandings and death when they rise too fast to the surface (Purdon 2021).

2.2.38 South Africa's south and west coasts are hosts to eight species of beaked whales (Ziphiidae) (Best 2007). In 2021, a new species, called Ramari's beaked whale, *Mesoplodon eueu* was described (Carroll et al 2021). This eighth species of whale and its significance (deep diving) was omitted from the BAR. This family of whales are globally recognised as being sensitive to anthropogenic noise and having raised conservation concerns. New et al. (2013) found that adult female beaked whales could survive but not reproduce in times or areas of lower habitat

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quality. They may extend the duration of lactation in mediocre conditions to increase their chance of survival, while still reproducing. New et al. (2013) found that some beaked whale species require high-quality habitat to meet their requirements for reproduction and survival. They suggested that even minor, non-lethal disturbances resulting in changes in behaviour, such as displacement from preferred habitats and stress (discussed above), could impact a population.

2.2.39 Barendse et al. (2010), Best & Allison (2010), and Elwen et al. (2014) highlighted that there is no existing evidence of a clear 'corridor' of migration of whales, and humpback whales appear to be spread out widely across the shelf and into deeper pelagic waters, especially during the southward migration, in the Benguela ecosystem. Despite various species being recorded frequently on the coasts and within the Exclusive Economic Zone, the location of breeding grounds of Sei (*Balaenoptera borealis*) and Fin whales (*Balaenoptera physalus*) are unknown, the seasonality of pygmy (*Kogia breviceps*) and dwarf (*Kogia sima*) sperm whales are unknown and the abundance and occurrence of the offshore common dolphin (*Delphinus delphis*) is also unknown, highlighting that encounters with these animals cannot be predicted and the generic mitigation measures may be insufficient.

2.2.40 In 2020, Vermeulen et al. warned that there is an observed decrease in Southern Right Whale calving success (i.e. low numbers of unaccompanied adults) of the South African population, with a strong link to foraging success (Vermeulen et al. 2023). It was highlighted that reduced maternal body condition, could contribute to a decreased reproductive rate and potentially have serious consequences for cow-calf pairs in relation to South Africa's whale-watching industry in the future. Germishuizen (2024) and Vermeulen et al. (2023) show that Southern Right Whales are responding to changing climate conditions by modifying foraging behaviours within their high-latitude foraging grounds. These adaptive strategies, which include altering migratory behaviours, are associated with energetic costs (Vermeulen et al. 2023). The consequences of these changes in energetic costs, at a population level, remain unknown.

Adequacy of Mitigation Measures

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- 2.2.41 Given the myriad of 'unknowns' in terms of the presence of and impacts on threatened species as outlined above, encounters with these animals are inevitable and generic mitigation measures as proposed in the BAR may be insufficient, not to mention that the survey window which is identified as January to May conflicts with the BAR's own findings, where the survey would occur during the peak abundances for many baleen species including Bryde's Whales, Pygmy Right Whales, Humpback Whales, and Southern right whales.
- 2.2.42 Notwithstanding the above, the ability of an MMO to detect all animals, at all times is problematic in the context of the BAR. During the 2018 and 2019 humpback whale (*Megaptera novaeangliae*) migration period along the east coast of South Africa, Wilkinson (2021) estimated the relative abundance of migrating humpback whales sighted by trained observers from two towers located 22m apart (both observers viewing the same area), located at 70m above sea level on a dune with a horizontal vantage length of approximately 20 km. Over the observation periods during the peak of migration, it was estimated that observers from both towers missed between 41-44% of whale groups while distance offshore decreased the probability of sightings. If the best percentage sighting (56%) was achieved within 1-5km of the observers' vantage point, then more than 40% of whales were missed. Given that this survey was done during the northward migration when mostly larger animals are present, the sighting success may be less when small calves are present as well. This begs the question of the efficacy and reliability of the mitigation method of Marine Mammal Observers (MMO), while assuming that whales (and other cetaceans) are thus regularly missed by MMOs and could be harmed.
- 2.2.43 Furthermore, bearing in mind the examples above, i.e., blue and fin whales ceasing to sing, the use of Passive Acoustic Monitoring (PAM) technology to detect cetaceans is baseless if cetaceans do not vocalise. This approach can promote availability bias which is when an animal is present but goes undetected because it was not producing detectable cues (Verfuss et al., 2018). For example, deep-diving cetaceans that are silent and cannot be seen by MMOs and/or detected by PAM operators, become vulnerable to availability bias (Verfuss et al., 2018). This availability bias is particularly concerning for deep-diving cetaceans because the BAR indicates that *"the survey area would largely be in waters deeper than 1 000 m where*

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sperm whales and other deep-diving odontocetes are likely to be encountered...".

- 2.2.44 As per best practice, in an effort to improve mitigation, PAM technology is complemented by visual searching over an area of 500m around the vessel by qualified Marine Mammal Observers (MMO). However, this technique is also flawed because it has been noted that rough seas and breaking waves form visual impairments above the water, as well as underwater noise (Verfuss et al., 2018). Rain can affect visual detection and mask underwater cues or signals from marine mammals due to increased background noise (Verfuss et al., 2018). This type of underwater "noise" is a type of sound for the receiver that interferes with the detection of other sounds of interest. The opposite of noise is a "signal", i.e., a sound that contains some useful or desirable information" (Harding and Cousins, 2022). However, species have the natural ability to cope with natural 'noise', while anthropogenic 'noise' refers to sound that has a negative impact on marine animals, which causes a change in animal behaviour and/or physiology, as a result of the animal attempting to cope with that 'noise'.
- 2.2.45 While the BAR describes that there should be "*provision for placing at least one qualified PAM operator on board the seismic vessel*", there is a concern of coverage for the full duration of the survey. Implementing only one MMO and PAM operator on duty highly compromises the detection of marine mammals and other animals in the vicinity of the seismic survey. This can further influence perception bias whereby animals are present for detection, but the detection system fails to detect either the visual or vocal cue of the animal (Verfuss et al., 2018). For instance, an animal may go visually undetected because of poor weather conditions, or the observer is looking in another direction or simply just fails to notice the animal for any given reason (Verfuss et al., 2018). In addition, PAM systems were not designed to detect the vocalizations of non-mammal marine animals (Harding and Cousins, 2022).
- 2.2.46 Furthermore, the effectiveness of MMOs in detecting marine mammals and other animals is further compromised by their narrow field of view and limited attention span which renders this method personnel-intensive and challenging, even during the day with fair weather conditions (Wright and Robertson, 2015). It is simply assumed that this method of MMOs and PAM works because it is generally accepted as a mitigation measure (Wright et al., 2016). There is not

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much in terms of detail or standards given for the selection of the MMO, i.e. their level of experience in marine mammal detection (Wright et al., 2016), and while experience is important, it does not necessarily translate into being effective (Wright et al., 2016). Together with no monitoring standards stipulated for the MMO, such as the position of the observer on the ship, available distractions (e.g. cellphone), duration of shift or shift changes, and comparison of performance between MMOs, if there is more than one on a vessel (Wright and Robertson, 2015). It has been noted that regular shift changes are necessary for maintaining MMO alertness, however, this cannot be achieved with only a single MMO on board (Wright and Robertson, 2015). Therefore, both PAM and MMO's are insufficient to detect, with certainty, cetaceans within the surrounding survey area. These types of mitigation could only be effective for all affected species if airgun firing ceases between sunset and sunrise, and in adverse weather conditions that limit visibility.

- 2.2.47 The cumulative and long-term effects of seismic survey sound are not entirely understood (Jasny et al. 2005); however, it is accepted that ocean noise may have ecosystem-scale effects (Hildebrand, 2005) and the "knock-on" effects on animals, their prey and their predators will have consequences within the food chain (Koper and Plön 2012).
- 2.2.48 For the reasons outlined above, the proposed seismic surveys for reconnaissance pose an unacceptable ecological risk to the marine ecosystems and species in South African waters. In point 3.2 of the environmental authorisation, seismic surveys are described as "*generally regarded as non-intrusive in nature*", and although it states that "*the technology poses potential impacts on fisheries and marine fauna,...the majority of the impacts were assessed to range between low to very low significance with mitigation.*" It is the fifth appellant's opinion that the acute anthropogenic noise over a prolonged period of time, and the extensive survey gear in the water is an ecological risk to threatened and protected marine fauna that primarily use sound to survive and/or are unable to avoid the area of impact. They therefore disagree with the finding of the BAR and Reasons for Decision in the environmental authorisation, that seismic surveys are regarded as 'non-intrusive', especially when the report clearly acknowledges the presence of impacts, before assessing their significance as low, despite the impacts being largely unknown.

Critical Biodiversity Areas and Ecologically Sensitive Areas

- 2.2.49 The sixth appellant avers that these various seismic surveys cause behavioural changes that cause fish and other marine animals to migrate from their habitats. No reproduction occurs, which makes production extremely rare. The sounds released during seismic surveys are linked to soft tissue damage, damage to organs used for balance and orientation, and temporary and permanent changes to hearing. The sound travels as far as 4.6 km, and because sound is essential for reproduction and communication, damage can affect critically endangered species at the population level. Other species affected include the endangered leatherback turtle, whose migration route passes through the west coast, African penguins, which have been shown to change their diet and fitness as a result of seismic surveys, the Cape fur seal, and various pelagic species such as tuna and blue marlin.
- 2.2.50 The seventh appellant avers that the proposed activity will affect fish and marine species, and that fish and all other species in the sea will disappear.
- 2.2.51 The eighth appellant submits that seismic surveys have a wide range of impacts on marine life, including injuries, death, behavioural changes, and decreased reproductive success. The sounds emitted during seismic surveys are linked to soft tissue damage, damage to organs used for balance and orientation, and temporary as well as permanent changes to hearing ability. According to the BAR, it is predicted that marine mammals can hear up to 4.6 km away from the source of the sound. Due to the importance of hearing in reproduction and communication, this damage can critically endanger species at the population level. The report notes that humpback whale, Antarctic minke whale, fin, sei, sperm and killer whales, as well as dolphins, move through the project area. Other species affected include the critically endangered leatherback turtle, whose migration routes pass through the West Coast; the critically endangered African penguin, which, according to research, has shown changes in nutrition and fitness as a result of seismic surveys; the Cape fur seal; and various pelagic species such as tuna and blue marlin.

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- 2.2.52 The ninth appellant submits that the 3D survey area overlaps substantially with areas mapped as Critical Biodiversity Area 1 (CBA 1): Natural and Critical Biodiversity Area 2: (CBA 2) Natural. Approximately a third of the proposed 3D survey area is covered by CBA 1 and CBA 2. These CBA areas are no-go areas. However, the project map does not exclude them, plus this does not mean that these areas will not experience ensonification from the seismic blasting alongside them.
- 2.2.53 The decision to allow the applicant to conduct the survey abutting CBAs stands counter to the purpose of the CBAs, therefore failing to conform to the National Environmental Management Act principles of sustainable development and warrants review.
- 2.2.54 The CA defines seismic surveys as “generally regarded as non-intrusive” in the key findings for his decision (p17), yet the CA finds it common cause that “the technology poses potential impacts on fisheries and marine fauna.”
- 2.2.55 A substantive obligation rests on the CA, in the wholistic and precautionary interests of all living coastal species, as per the National Environmental Management: Integrated Coastal Management Act (NEM:ICMA), 2008 (Act 24 of 2008) to inform his decision to authorise the activity. The CA did not apply his mind to the veracity of the evidence before him and say so for the following reasons:
- 2.2.55.1 Seismic surveys are listed activities (regulation 30 of the EIA amendments regulations of June 2021) under Section 24F of NEMA, demanding mitigation according to South African law, because their high-power penetrative shock wave properties propagate rapidly with a slow rate of dissipation (Stuhmiller et al., 1991; Phillips, 1986), occur every 10 /12 seconds, can be lethal or create injury and the onset of complications from brain, ear, eye, lung and abdominal organ damage can take place well after exposure. (Ketten, Lien, & Todd, 1993; Gordon et al., 2003; Weilgart, 2007; (Santulli et al., 1999); Popper & Hastings, 2009; Erbe & King, 2009; Garret, 2016)., intrude on the activities of a significant amount of species, affect the marine soundscape up to 4000kms away (Purdon 2018; (Hildebrand,

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2005)) from the source, and can affect the internal organs, and so reproduction, of various species. Low-frequency energy from seismic sounds may travel long distances through bottom sediments, re-entering the water far from the source (Richardson et al. 1995; McCauley & Hughes 2006). The localised measurement of noise source to a point of reception is a massive understatement of the potential extent of noise impacts for oil and gas development. There is no way to minimise the traumatising sound or pressure generated from the seismic survey and no way to remedy their effects.

2.2.55.2 The extent of the survey covers 30 000km².

2.2.55.3 Airgun operations kill large quantities of plankton, vital to the marine food chain, up to 1.2 km from the sound source (Tollefson, 2017). McCauley et al., (2017)) study found zooplankton abundance dropped by two-thirds, suggesting significant depletion or disruption of plankton communities “is occurring on the scale of 3D seismic surveys undertaken”. This could have serious consequences for ocean ecosystems, as zooplankton are keystone species serving as larvae for commercially important fish. Without viable planktonic productivity healthy populations of fish, top predators and marine mammals are not possible.

2.2.55.4 Since October 2021, Cape fur seals (*Arctocephalus pusillus pusillus*) have been under duress, with die-offs of thousands of individuals. Their foraging areas include the continental shelf up to 120 nautical miles/222 kms offshore (Shaughnessy 1979) and therefore within the vicinity of the survey. Additional stress from seismic activity at this time is inadvisable (Harris, Olbers & Wright, 2022).

2.2.55.5 The duration of the survey is at least 9 months or at least 280 days. [There is a misleading understatement of duration: Firstly the duration fails to take into account the previous 4 months of seismic acquisition. Secondly it states, “The 3D survey will take in the order of 127 days including downtime and is proposed to be undertaken during the survey period (late December – May) but will likely commence in first quarter of 2025 and may extend into 2026.”]. This proposed

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schedule means the marine environment, which includes pristine Critical Biodiversity Areas, will experience 2419200 blasts of airguns at an average of 260dB per blast over and above the previous survey. This could justifiably be deemed incessant, cruel and unbearable for marine life, which depends on sound to conduct their daily lives.

2.2.55.6 Vallarta's Noise Impact Assessment (NIA) modelling is done for a 24-hour period, with 20 airguns, and assumes the airguns are stationary. This oversight undermines the report's effectiveness in accurately assessing and mitigating the full scope of environmental risks. Vallarta has also chosen to model sites with upslope propagation that produce fast fading propagation, "whereas other signals may be detectable at ranges thousands of kilometres from the source when sound travels down the continental slope (McCauley et al., 2008; Duncan et al., 2013)." (Carroll et al., 2017) which means that his modelling is hardly "*conservative*" but rather an unrealistic best-case scenario.

2.2.55.7 The assurances of impacts being reversible are based on no data at all. Cognisance should have been taken of cascading effects of causing harm to one group inevitably causing harm to all groups, which could prove immensely and profoundly detrimental to the marine environment.

2.2.55.8 Hence there remains very real and unmitigated risk of displacement from feeding or breeding areas which could have far-reaching effects not only for whole, and vulnerable, animal populations, but also on fishing sectors and food security.

2.2.56 The results of the EMPr should indicate a cause for concern for the critically endangered, endangered and vulnerable species and their migration paths as well as the critically endangered, endangered and vulnerable species habitats that will be subjected to the bombardment of this operation. All the above reasons warrant questioning the lack of a precautionary approach and the impact significance ratings given by this EMPr based on minimal biological baseline data.

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- 2.2.57 Accepting that seismic surveys are a non-intrusive technology is both irrational and unreasonable. The idea that seismic surveys are non-intrusive has been tested in South African courts, and two judgments to date have applied a risk-averse and precautionary approach, which takes into account the limits of current knowledge about the consequences of decisions and actions and have terminated the seismic surveys (Bloem 2021; Thulare 2022).
- 2.2.58 The failure of the CA to apply his mind to these relevant considerations as required by law, means that his decision to authorise the seismic survey is reviewable on the grounds specified in section 6(2)(c), and 6(2)(e)(iii) of PAJA.

Cumulative and Chronic Noise Impacts

- 2.2.59 The CA has failed to consider repeated, persistent or cumulative exposure impacts to species, knowing that the Orange Basin has become a “hot-spot” area for the oil and gas and other mining sectors, including beyond South African borders.
- 2.2.60 The EMPr understates the compounding abiotic and biotic stressors associated with the frequency and enormous extent of the multi-client 3D surveys and exploration planned for 2025 and onwards. (Parsons et al., 2009) warn that some of the more insidious and potentially devastating impacts arise through long-term, repeated, persistent or cumulative exposures. The risks associated with compounded behavioural disturbance and how chronically-present sound could constitute a threat to populations by changing behaviour and distribution regularly at critical times and in critical areas.
- 2.2.61 The reversal of noise was demonstrated in 2020, while 60% of the globe was in lockdown and a 20% reduction in ocean noise, the response was also almost instantaneous, where large marine animals began coming closer to shore and claiming back their ancestral territory (Duarte et al, 2021).
- 2.2.62 Stress in marine mammals related to anthropogenic noise exposure has been conclusively proven (Wright et al., 2007). Neither stress nor maladaptive neuroplastic changes within the

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central auditory pathway symptomatic of noise exposure induced tinnitus in marine animals are broached.

- 2.2.63 Significant stress due to prolonged exposure to seismic and anthropogenic underwater noise has been measured in a number of species (Finneran et al., 2002)(McCauley et al., 2003); (Rolland et al., 2012) These studies indicate cumulative effects could result in metabolic maladaptation, suppressing growth, immune system function, thermoregulation and the reduction of reproductive rates, with implications for individual and population fitness. The CA has not taken into account the chronic problems of this kind of stress which are legitimate, but have been disregarded as a conservation concern in the environmental authorisation.
- 2.2.64 The tenth appellant submits that the final BAR fails to adequately assess or mitigate the seismic survey's impact on marine ecosystems, despite the high likelihood of harm. Seismic surveys produce high-decibel acoustic pulses that interfere with essential behaviours in marine species, including communication, reproduction, and migration. These activities violate Section 24 of the Constitution, which enshrines the right to an environment not harmful to health or well-being. Under Section 2(4)(a)(vii) of NEMA, the precautionary principle obliges authorities to adopt protective measures in the face of scientific uncertainty, requiring decision-makers to err on the side of caution where environmental harm is probable or irreversible.
- 2.2.65 In the *Sustaining the Wild Coast NPC and Others v Minister of Mineral Resources and Energy*²⁴ the Eastern Cape High Court emphasized the importance of robust mitigation measures in seismic activities, given the potential for irreversible harm to marine ecosystems. The court noted that failure to apply the precautionary principle when addressing potential harms would undermine environmental protections required by law. Similarly, the BAR's reliance on inadequate mitigation strategies such as Marine Mammal Observers (MMOs) and Passive Acoustic Monitoring (PAM) is insufficient to prevent significant harm, given the scope of potential impact. Therefore, the seismic survey should not proceed without a scientifically sound impact assessment that conforms to NEMA's principles.

²⁴ [2022] (6) SA 589 (ECMk).

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- 2.2.66 The assessment of noise impacts in the final BAR is fundamentally deficient. Seismic surveys emit intense acoustic waves, sometimes exceeding 200 decibels, impacting marine life at distances well beyond the immediate survey area. This kind of underwater noise pollution is known to cause both temporary and permanent threshold shifts in hearing, disrupt migration patterns, and interfere with mating and feeding behaviours, particularly in sensitive species like whales and dolphins. The *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others*²⁵ decision establishes the need for comprehensive environmental assessments, particularly when cumulative impacts are at stake. By disregarding these factors, the final BAR falls short of the legal requirements for a proper environmental assessment under NEMA, and its conclusions cannot be deemed credible or legally sufficient.
- 2.2.67 The final BAR inappropriately confines its impact assessment to the immediate physical “footprint” of the survey, ignoring indirect, cumulative, and landscape-scale impacts. Marine ecosystems are interconnected, with the activities in one area affecting migratory routes, breeding grounds, and feeding zones critical to marine biodiversity across a broader region. Section 23(2)(b) of NEMA mandates an integrative assessment that considers the holistic environmental effects of an activity. However, the final BAR fails to address how the survey may disrupt Marine Protected Areas (MPAs), Ecologically or Biologically Significant Areas (EBSAs), and Critical Biodiversity Areas (CBAs), all of which enjoy enhanced legal protections under NEMA.
- 2.2.68 In *Border Deep Sea Angling Association and Others v Minister of Mineral Resources and Energy and Others* [2021] ZAWCHC 111, the court emphasized that seismic activities within ecologically sensitive marine areas require robust cumulative impact assessments to comply with legal protections. The final BAR’s disregard for these cumulative and indirect impacts directly contravenes these requirements, undermining the assessment’s validity and failing to meet the comprehensive standards for environmental protection mandated by law.

Transboundary Impacts

²⁵ [2017] 2 All SA 519 (GP).

- 2.2.69 Despite the proximity of the seismic survey area to the territorial waters of Namibia, the final BAR fails to identify and assess impacts that are transboundary in nature. This is especially concerning, given the significance associated with the three Ecologically or Biologically Significant Areas ("EBSAs") spanning the border between South Africa and Namibia,³ that the Benguela Current flows in a generally northerly direction, and that "[t]he major feature of the Benguela Current is coastal upwelling and the consequent high nutrient supply to surface waters leads to high biological production and large fish stocks".²⁶
- 2.2.70 Considering international law obligations, the EIA process should have included an assessment of transboundary impacts. Failure to do so renders the assessment deficient.

The Precautionary Principle

- 2.2.71 In their 'Comments to the BAR'²⁷ the tenth appellant properly argued that there was inadequate consideration of the precautionary principle. However, the final BAR did not properly consider this principle and by implication the CA did not adequately consider it when granting the environmental authorisation. Accordingly, the tenth appellant submits that the CA should have applied the precautionary principle in this case.
- 2.2.72 The cumulative impacts of seismic surveys on the marine environment are not well-studied, and there is no scientific consensus on their ecological impact. Given this uncertainty, the Precautionary Principle, which calls for caution when the potential harm of a project is not scientifically established, should be applied. This principle is crucial not only in granting EAs but also during the environmental impact assessment process. Therefore, it is inappropriate to make subjective judgments about harm in the absence of scientific certainty. Instead, seismic survey noise impacts on fish eggs and larvae should be considered potentially harmful unless proven otherwise through credible research.

²⁶ Page 47 of the final BAR.

²⁷ Pars 11-12 of the Comment to the BAR.

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- 2.2.73 In the Shell Wild Coast Seismic Survey judgment²⁸ in the main case, the court referred to applicants' relying on expert reports for their contention that the anticipated harm to marine and bird life is a fundamental consideration, noting that these experts were in agreement that there is a reasonable apprehension of harm to marine and bird life and that the mitigation measures proposed by Shell did not adequately manage the threat of harm. The court also referred to the experts relied upon by Shell to refute the suggestion of possible harm to marine life, and noted that the respondents suggest that the detrimental effect of seismic surveys are not known and that, in so far as there is a possibility of death or stranding of marine animals from exposure to sound from seismic surveys, there are appropriate mitigating and monitoring measures in place. The court went on to point out that *'[b]ecause of the apparent dispute between the experts as to the adequacy of the mitigation measures minimising the known effects of seismic surveys, it would be incumbent on the decision-maker to invoke the precautionary principle.'*
- 2.2.74 Paragraph 2(d) of Appendix 1 to the 2014 EIA Regulations states that the objective of the BA process includes the undertaking of an impact and risk assessment process, inclusive of cumulative impacts, to determine the nature, significance, consequence, extent, duration and probability of the impacts occurring.
- 2.2.75 Paragraph 3(1)(j)(i) of Appendix 1 to the 2014 EIA Regulations requires a BA report to contain an assessment of each identified potentially significant impact and risk, including cumulative impacts, and, in section 3(1)(o), a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed.
- 2.2.76 Cumulative impact is described in the 2014 EIA Regulations as follows:
- "cumulative impact", in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant*

²⁸ *Sustaining the Wild Coast NPC and Others v Minister of Mineral Resources and Energy and Others* 2022 (6) SA 589 (ECMk).

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when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities;

- 2.2.77 This requires that cumulative impacts associated with both similar and diverse activities are considered.

Cumulative Impacts of Multiple Seismic Surveys

- 2.2.78 The final BAR acknowledges the possibility of two other seismic surveys which could occur simultaneously: projects by TGS and GX Technologies. If multiple projects did occur at the same time, this would extend the overall high noise exposure to the environment, increasing the probability of harm for marine organisms, and increasing the probability for elevated stress levels in marine organisms at a regional level.
- 2.2.79 In turn, if multiple projects were to occur at the same time, it would also render the mitigation measures even less effective. For example, part of the EIA mitigation plan hinges on there being a 'safe place' for marine organisms to retreat to avoid the impacts of extremely high amplitude sound, or by minimising the spatial and temporal scale of sound exposure associated with the project. These assumptions are untrue if multiple projects occur simultaneously, which is not considered in the final BAR.
- 2.2.80 Given the limited remaining durations of the exploration rights held for the overlapping licence blocks, the possibility that the applicant's seismic survey will be undertaken at overlapping times with exploration activities in the overlapping or nearby blocks, cannot be discounted and should have been included in the assessment of cumulative impacts. Even where the activities may not directly overlap temporally or spatially, the multiple and confounding impacts on a disturbed marine environment should have been considered.
- 2.2.81 This is a fatal flaw in the assessment process.
- 2.2.82 The proposed seismic survey presents unacceptable risks of significant harm to the marine

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environment, which cannot be adequately mitigated through the mitigation measures proposed in the final BAR and the environmental authorisation. The harm associated with the proposed 3D seismic surveys has not been adequately assessed, and the project poses unacceptable and significant impacts to the marine environment.

Baseline Data, Scientific Uncertainty and Monitoring

- 2.2.83 There is a lack of baseline information. Very little biological and ecological data exists in respect of the seismic survey area, and the final BAR is based on the entire Orange Basin Area. Substantive information relating to the specific area, species and ecosystems that are at risk is absent. The WildTrust scientists identify a number of gaps in scientific information, particularly in respect of the South African context.
- 2.2.84 The subjective rating system, despite data gaps, does not provide confidence of the impact predictions.
- 2.2.85 In the need and desirability analysis, the final BAR indicates that the reconnaissance activities can be used *“more generally for providing more insight and understanding into the regional geology of the area for scientific purposes”* and that *“[t]his project can also provide an opportunity to conduct independent research on how fish species on the West Coast, such as snoek, respond to seismic surveying. Bearing in mind that the location of this particular survey is far offshore and impacts on the biophysical environment are expected to be relatively low, this project is seen as a good opportunity to obtain local data and conduct local research which could be useful for similar projects and applications that may take place in the future.”*²⁹
- 2.2.86 The applicant has already conducted two seismic surveys in and near the project area. There is no indication in the final BAR that it indeed took the opportunity to gain “more insight and understanding into the regional geology of the area for scientific purposes” or that any “independent research” was conducted to understand impacts, or that it used the opportunity to understand more about the baseline conditions. If there was any such research or

²⁹ Page 40 of the final BAR.

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information gained, then this should have informed the final BAR, and the competent authority's decision. The repetition of such a promise in the final BAR is hollow and misleading.

2.2.87 Further, neither the final BAR nor the competent authority's decision appear to have been informed by the results of its monitoring during the previous surveys. The applicant's compliance with its previous environmental authorisation has also not been disclosed.

2.2.88 Reconnaissance activities, which will likely have significant impacts on the marine ecosystem, cannot be justified for research purposes, and the existence of a significant gap in information cannot justify the authorisation of the activity for the purpose of obtaining data. It is opposite – appropriate scientific information should first be available to inform a comprehensive assessment of impacts, before a decision can be made whether to authorise a harmful activity. Without this, the decision-makers should be following a precautionary approach.

Expert Evidence Regarding Marine Ecosystem Impacts

2.2.89 Section 2(4)(a)(vii) of NEMA provides that sustainable development requires the consideration of all relevant factors, including “that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions”. In *WWF South Africa v Minister of Agriculture, Forestry and Fisheries and others*, the Court found that “[p]otential errors are ‘weighted in favour of environmental protection’, the object being ‘to safeguard ecological space or environmental room for maneuver.’”³⁰ Here, in weighing the relative reliability of two studies, which suggest different degrees of harm to zooplankton, the decision-maker should err in favour of an interpretation that protects the environment.

2.2.90 This approach was confirmed by the court in *Sustaining the Wild Coast NPC and others v*

³⁰ *WWF South Africa v Minister of Agriculture, Forestry and Fisheries and Others* (11478/18) [2018] ZAWCHC 127; [2018] 4 All SA 889 (WCC); 2019 (2) SA 403 (WCC) (26 September 2018) at para 104.

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*Minister of Mineral Resources and others:*³¹

*“on a proper application of the precautionary principle, the court should find that the threat of harm to marine and bird life justifies a cautious approach, which was not given heed to when the exploration right was granted.”*³²

*“Because of the apparent dispute between the experts as to the adequacy of the mitigation measures minimising the known effects of seismic surveys, it would have been incumbent on the decision-maker to invoke the precautionary principle.”*³³

2.2.91 A precautionary approach requires that in the absence of sufficient evidence to allay risks of significant harm, protective action should be taken such that authorisation for the seismic testing is not granted.

2.2.92 The appeal of WildTrust, and the appeal report prepared by experienced marine scientists Drs. Harris, Olbers and Wright, and Ms. Pillay, dated 13 November 2024 and attached to the appeal submission marked Annex B1 refer. The conclusions of the WildTrust Appeal are incorporated herein.

2.2.93 The WildTrust scientists raise important concerns about the potential impacts on species such as the critically endangered African penguin, sea turtles and cetaceans, amongst others. They conclude that:

2.2.93.1 *“the proposed seismic surveys for reconnaissance pose an unacceptable ecological risk to the marine ecosystems and species in South African waters”;* and

2.2.93.2 *“the acute anthropogenic noise over a prolonged period of time, and the extensive survey gear in the water is an ecological risk to threatened and protected marine*

³¹ *Sustaining the Wild Coast NPC and Others v Minister of Mineral Resources and Others* (3491/2021) [2022] ZAECKHC 55.

³² Para 31.

³³ Para 109.

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fauna that primarily use sound to survive and/or are unable to avoid the area of impact".

2.2.94 Importantly, the current proposal is also more harmful than the 2022 survey proposal:

2.2.94.1 The proposed 3D seismic survey covers an areas of approximately 21 000 km², which is more than double the area subjected to 3D seismic surveys in the 2021 proposal.

2.2.94.2 The proposed 3D seismic surveys will take 127 days including downtime, which is 60% more time than then 2021 plan.

2.2.94.3 Scientific evidence supports that 3D seismic surveys are more harmful than 2D seismic surveys, through the use of multiple airgun arrays and multiple receiving lines or streamers, which provides more detailed information:

- "Any consideration of effect should also take scale into account. Conventional exploratory surveys (2D techniques) may cover large areas and are only briefly in a localized area. Such surveys are typical for speculative wide area coverage, with each trackline being several kilometres apart. However, 3D surveys methods have been developed in which several parallel hydrophone streamers and possibly airgun arrays are deployed from a single vessel. Tracklines for 3D site evaluation may be only 50–100 metres apart. This type of survey may focus work on small spatial scale, and proceed for weeks at a time (McCauley, 1994). Such surveys may have more pronounced effects on organisms in surrounding areas, and also will have greater impacts on fishing success."³⁴
- "However, although this may reduce emission time at the vessel, during many 3D surveys the fish within the survey area may hear the emitted

³⁴ Hirst & Rodhouse, Impacts of Geophysical Seismic Surveying on Fishing Success (2000), (PDF) Impacts of geophysical seismic surveying on fishing success (researchgate.net)

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sound during the whole active period of survey, while they are likely to experience periods of relative silence during 2D surveys that cover larger areas."³⁵

- "2D seismic surveys increased the daily SEL by -30 dB in the survey area on the day of the survey. In comparison, 3D seismic surveys similarly increased the daily SEL in each ship pass, while multiple passes generated an overall larger increase in daily SEL."³⁶

2.2.95 The survey will include a significant amount of irreplaceable and near-replaceable CBAs 36.4% of the Permit Areas has been designated as CBA Class 1 or 2.

Seasonal Sensitivity and Survey Timing

2.2.96 The final BAR does not provide reasoning as to why the period of Late December to May is proposed for the survey period. Nevertheless, the survey window conflicts with the BAR's own findings, which make it clear that between December and May, the survey would take place during the peak abundances for many baleen species:

2.2.96.1 Bryde's Whale: "Its seasonality on the West Coast is thus opposite to the majority of the balaenopterids with abundance likely to be highest in the broader project area in **January – March**. Several strandings of adult offshore Bryde's whales in central Namibia confirm that the species passes through the project area."³⁷

2.2.96.2 Pygmy Right Whale: "In the last decade, both species have been increasingly observed to remain on the west coast of South Africa well after the 'traditional' South African whale season (June – November) into spring and early summer (**October – February**) where they have been observed feeding in upwelling zones,

³⁵ Slabbekorn et al., Population-level consequences of seismic surveys on fishes: An interdisciplinary challenge (2019), Population-level consequences of seismic surveys on fishes: An interdisciplinary challenge (wiley.com)

³⁶ Affatati & Camerlenghi, Effects of marine seismic surveys on free-ranging fauna: a systemic literature review (2023), Frontiers | Effects of marine seismic surveys on free-ranging fauna: a systematic literature review (frontiersin.org)

³⁷ Page 83 of the final BAR.

especially off Saldanha and St Helena Bay. Increasing numbers of summer records of both species, from the southern half of Namibia suggest that animals may also be feeding in the Lüderitz upwelling cell and will therefore occur in or pass through the project area."³⁸

2.2.96.3 Humpback Whales: "Humpback whales are thus likely to be the most frequently encountered baleen whale in the project area, ranging from the coast out beyond the shelf, with year-round presence but numbers peaking in **July – February** and a smaller peak with the southern breeding migration around September – October but with **regular encounters until February** associated with subsequent feeding in the Benguela ecosystem."³⁹

2.2.96.4 Southern right whale: "Recent sightings (2018-2021) confirm that there is still a clear peak in numbers on the West Coast (Table Bay to St Helena Bay) between **February and April**. Given this high proportion of the population known to feed in the southern Benguela, and current numbers reported, it is highly likely that **several hundreds of right whales** can be expected to pass through the southern portion of the Reconnaissance Permit Area when migrating southwards from the feeding areas between **April and June**"⁴⁰

2.2.97 Furthermore, this period is not appropriate for turtles, as this is a time of peak turtle abundances: "Hatchlings of both species emerge from their nests from **mid-January to mid-March** with most dispersing south-westward within the Agulhas Current. The Agulhas Current migration corridor will therefore be very active with migrating sea turtles between **January and April**, some of which may be distributed along the West Coast through mass transport of Agulhas Current water into the southeast Atlantic by warm core rings. Despite their extensive distributions and feeding ranges, the numbers of adult and neonate turtles encountered in the Survey area may therefore be seasonally high, particularly in the Child's Bank and Orange Shelf Edge MPAs, and the Orange Seamount and Canyon Complex transboundary EBSA,

³⁸ Page 84 of the final BAR.

³⁹ Page 85 of the final BAR.

⁴⁰ Page 85 of the final BAR.

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which may be frequented by leatherbacks on their migrations."⁴¹

- 2.2.98 The survey will include foraging grounds of the Endangered Atlantic Yellow-Nosed Albatross and the vulnerable Wandering Albatross.⁴² In the *Adams* judgment, the court recognised that the "surveys should not be conducted within the foraging ranges of sensitive seabird species".⁴³
- 2.2.99 The December – May timing would only be useful for avoiding the migrations of a number of species which have a **low probability** of being found in the project area: Sei whales, fin whales, blue whales and minke whales.
- 2.2.100 The survey period is therefore inappropriate and will result in unacceptable harm to the species described above.
- 2.2.101 The precautionary approach should also be applied in respect of the broader ecosystem impacts from seismic surveys. For example, zooplankton are the basis for the marine ecosystem by providing food and nutrients for other species. As set out in the *WildOceans* appeal, experts confirm that seismic testing is very likely to significantly impact zooplankton populations. This will have unacceptable knock-on impacts in the food chain and ecosystems, with impacts on *inter alia*, juvenile fish and rock lobsters. Noise impacts should be assumed to be unsafe in the absence of credible scientific data showing that the impacts on zooplankton are not significant.
- 2.2.102 Lynne Shannon, Principal Researcher in the Department of Biological Sciences at the University of Cape Town, echoes the concerns of the *WildTrust* scientists regarding ecosystem impacts. In her expert report in the *Searcher* litigation, she highlights the confounding ecosystem impacts, which remain relevant in the context of the revised *Searcher* proposal:

⁴¹ Page 167 of the final BAR.

⁴² Page 73 of the final BAR.

⁴³ Para 33 of *Adams* judgment.

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- 2.2.102.1 “[F]oraging behaviours can extend across multiple species and parts of the food web, and are at risk of being interrupted/negatively impacted by seismic activity off the west coast.”
- 2.2.102.2 “A further concern is the additional pressures that seismic surveys will add to an already stressed ecosystem. Noise, vibrations, possible oiling etc. need to be viewed in the context of cumulative (and often jointly worsened) impacts of anthropogenic activities in our marine ecosystems (Skern-Mauritzen et al. 2021). Fishing, shipping, land-based activities (pollution, change in bay circulation etc.), and now seismic activities, will all act together to impact our marine biodiversity and ecosystem functioning, thereby influencing the services and contributions of nature to people (Brauman et al. 2020). These impacts will likely be compounded to exacerbate negative impacts of ecosystems and human well-being, and will be further exacerbated under climate change (Diaz et al. 2019).”
- 2.2.102.3 “In summary, noise and vibrations from the spatially and temporally extensive seismic surveys proposed, can have notable and widespread direct and indirect impacts on individuals, species, animal communities and thus the food web as a whole. Although several of the species of concern may be largely located inshore or in marine protected areas, may mostly frequent the west coast designated zones in months other than those currently earmarked for surveys, or may reside in ecosystem types that are not (yet) classified as “high risk”, we do not know the distances across which fish, turtles, and marine mammals may be affected, nor what the indirect ecosystem effects are likely to be. We also do not know how the addition of a new pressure in the form of seismic activity on the west coast may alter current risk status of an ecosystem type. We do however know that the effects of seismic activity have been recorded to extend up to 100km from the source in the case of African penguins (Pichegru et al. 2017).”
- 2.2.102.4 “We also know that numerous marine species elsewhere in the world have been shown to be negatively impacted by seismic activity (Weilgart 2013). And we know and appreciate that species comprise diverse assemblages that determine how

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ecosystems function; we cannot rule out possible significant detrimental effects on our marine species and the ecosystems to which they belong. Upsetting even one connection in the food web has repercussions for other linkages and the overall ecosystem functioning – which in turn has implications for multiple fisheries in terms of what the ecosystem may be able to support in terms of catches, and where. Disruption of spatial-temporal patterns in predator-prey interactions in our marine ecosystem puts at risk fishing sectors and human communities that rely on availability of fish off our west coast.”

2.2.102.5 “All in all, the above considerations underline the uncertainty and poor knowledge as to the extent of species-level AND ecosystem-level impacts of proposed seismic activity off our coast, stressing that a precautionary approach (see Shannon et al. 2020b for details) is appropriate. The UN Fish Stocks Agreement (Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks) states that the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures. International guidelines and best practice, such as that adopted by Canada, states “in circumstances where there is potential for imminent harm, it may be appropriate to make decisions and implement precautionary measures in the near term”. In the light of species-level effects noted above, in the literature and discussed in the SLR report, and given the uncertainty that bounds potential ecosystem-level impacts, I strongly urge decision-makers to act with the appropriate level of precaution in this instance. “

2.2.103 Lynne Shannon’s expert affidavit is attached as Annex B2 of the appeal submission.

2.2.104 Further scientific support for these expert opinions are found in the expert affidavit of Colleen Maloney, a marine ecologist and associate professor within the same department at UCT:

“This region is fertilised on a large scale and an almost continuous basis by the transport

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of water rich in nutrients (e.g. nitrogen and phosphorous) from depth to the well-lit surface waters where photosynthesis can occur. This results in a proliferation of microscopic phytoplankton (photosynthetic organisms) and small zooplankton, which feed on phytoplankton and which themselves are food for fishes. The west coast thus has several nursery grounds for fishes, including species that are commercially exploited and non-commercial species. The large abundances of fishes, large crustacean zooplankton and squids also support top predator populations, such as seabirds and marine mammals...

As examples of measured short-term impacts, larval and juvenile lobsters in an Australian study were damaged up to 500 m from a seismic survey sound source...

South Africa's west coast has a large abundance of marine organisms, with much spatial and temporal heterogeneity in the environment, such that impacts need to be understood in the context of localised patches of enhanced abundance and dense aggregations of marine organisms.

In conclusion, current understanding of impacts associated with seismic surveys on zooplankton is too sparse and localised to allow definitive conclusions to be drawn about the extent and ecosystem impact of these surveys off the west coast of South Africa."⁴⁴

2.2.105 A copy of Ms Maloney's affidavit is attached marked Annex B3 of the appeal submission.

Further Concerns Regarding Mitigation And Monitoring

2.2.106 In the Wild Oceans appeal, the scientists identify a number of flaws with the proposed mitigation measures. In particular:

2.2.106.1 The ineffectiveness of MMO sightings, affected by distance offshore, time of day, sea conditions, underwater noise, as well as the attention span of the MMO, and a lack of best practice standards for MMOs. In particular, MMOs cannot operate at night, and yet the surveys will continue around the clock.

⁴⁴ Expert Affidavit of Coleen Maloney in *Adams and Others v Minister of Mineral Resources and Energy and Others* (1306/22) [2022] ZAWCHC 24 (1 March 2022)

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- 2.2.106.2 That Passive Acoustic Monitoring is ineffective where cetaceans do not vocalise, and are not designed to detect the vocalisations of non-mammal marine animals.
- 2.2.107 The consequence is that the harms to the marine environment are not adequately mitigated, and the impacts, even with mitigation, are significant.
- 2.2.108 Given the likelihood of significant impacts on the marine environment, and confounding ecosystem impacts, the decision to authorise the seismic survey violates the State's obligations under the Constitution and NEMA to take reasonable measures to protect the environment.
- 2.2.109 The Noise Specialist Study does not consider cumulative noise impacts over 24 hours, though the final BAR notes that the survey is planned to last four (4) months.⁴⁵ Four months of continuous blasting reverberating for long distances through the marine soundscape is likely to have very different effects than a 24 hour survey would, including in particular behavioural effects that reduce species' fitness due to masking and long-term avoidance of the blast areas.
- 2.2.110 The Noise Specialist Study relies upon a 2014 U.S. government document to support the use of a 40km buffer between vessels during concurrent simultaneous surveys,⁴⁶ however those buffers are based upon a threshold of 160 dB for harassment, a standard that the U.S. government has since recognized is not supported by the science.⁴⁷ See extract attached marked Annex B4 of the appeal submission. Scientists also agree that harm occurs at exposure levels far below the 160 dB threshold. See for example, the expert evidence of Professor Nowacek from the *Sustaining the Wild Coast* litigation, marked Annex B5 in the

⁴⁵ Page 167 of the final BAR.

⁴⁶ Page 45 of the Noise Specialist Study.

⁴⁷ See Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Geophysical Surveys Related to Oil and Gas Activities in the Gulf of Mexico, 83 Fed. Reg. 29,212, 29,247-48 (June 22, 2018) (U.S. government announced that "[s]tudies of marine mammals in the wild and in experimental settings do not support" use of a single 160-decibel threshold and that "that an approach reflecting a more complex probabilistic function is better reflective of available scientific information," because it "takes the fundamental step of acknowledging the potential for . . . harassment at exposures to received levels below 160 [decibels].")

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appeal submission.⁴⁸

2.2.111 In addition to the issues associated with mitigation generally, as referred to above, the mitigation measures associated with noise impacts are designed to only attempt to avoid permanent threshold shifts. They also do not include any seasonal avoidance considerations, which would help to reduce harms on species undertaking activities particularly sensitive to acoustic disturbance.

2.2.112 The use of passive acoustic monitoring as a mitigation measure has limited benefit as whales “will not be detected even when present if they are quiet or not vocalizing or if background noise is too high” and is “essentially useless for detecting mother-calf pairs.”⁴⁹

2.2.113 The final BAR presents information in a biased manner. For example, it cites no authority and makes much of the claim that: “Of all human-generated sound sources, the most persistent in the ocean is the noise of shipping.”⁵⁰ However, the final BAR fails to acknowledge that of all human-generated sound sources in the ocean, the absolute loudest are seismic blasts, coming in almost 100 dBs louder than the next human-generated sound.

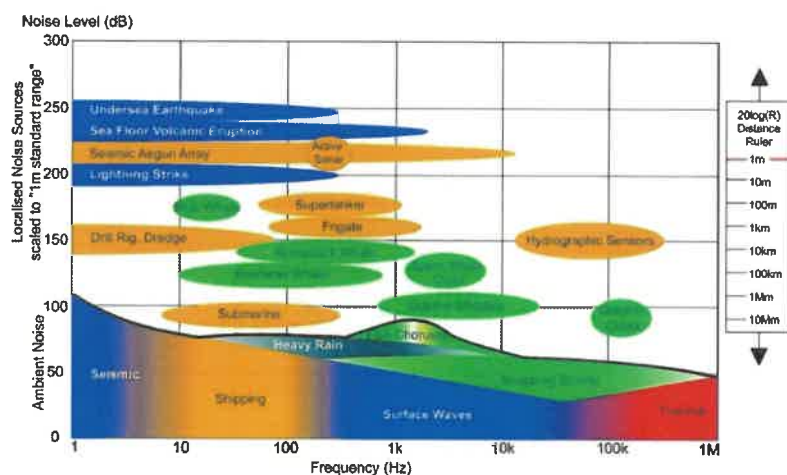


Figure 1. Levels and frequencies of anthropogenic and naturally occurring sound sources in the marine environment. Spectrum Noise Level ("Acoustic intensity per Hertz") versus Frequency

⁴⁸ See Douglas Nowacek, Supporting Affidavit, filed in *Sustaining the Wild Coasts and Others v. Minister of Mineral Resources and Energy and Others*, at Para. 18 (incorporating underlying expert declaration paras 24-31, demonstrating science shows that “seismic surveys can disrupt important behaviors in baleen whales at exposure levels far below the 160 dB threshold”).

⁴⁹ See Annex B5. Nowacek Decl. at para 13.4 (citing to expert declaration para 46, which is quoted).

⁵⁰ See page 163 of the final BAR.

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(measured in Hertz or "cycles per second").⁵¹

- 2.2.114 As a result, the assessment of noise impacts is woefully inadequate. Given the impacts of noise on marine fauna, this is significant, and should not have justified a decision to grant environmental authorisation.

APPLICANT'S RESPONSE

In response to this ground of appeal, the applicant submits as follows:

- 2.2.115 It should be noted that:

2.2.115.1 The first appellant was pre-identified and registered as an interested and affected party (I&AP) at the outset of the public participation process conducted for the project. No comments were received from the appellant during the entire Basic Assessment process.

2.2.115.2 The second appellant has not provided any support for the justification of their appeal. It should be noted that the draft BAR was made available to the second appellant for review and comment to ensure their comments and concerns (including additional potential impacts) were addressed in the final BAR prior final submission to the PASA/DMRE for adjudication. No additional impacts were identified by the appellant.

2.2.115.3 The third, fourth, eighth and ninth appellants have not described or directed the applicant to any specific aspects relevant to the proposed activities, the BAR findings or the mitigation measures in the EMP which the applicant could interrogate against the appellants' statements and analyse in order to respond meaningfully. Accordingly, the applicant was left to imply meaning into their grounds of appeal in order to respond to the appellant.

⁵¹ See OSPAR Convention, Underwater Noise, available at <https://www.ospar.org/work-areas/eiha/noise>.

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2.2.115.4 Similarly, the sixth appellant has not challenged any of the findings or mitigation measures described in the BAR and EMPr. None of the assertions by the eighth, ninth and tenth appellant have impugned the assessments and findings in the BAR or the management and mitigation measures which are included in the EMPr.

2.2.115.5 The third, fourth, sixth, seventh, eighth and ninth appellants grounds of appeal were vague and unsubstantiated.

2.2.116 Notwithstanding that, the applicant endeavoured to respond to each of the appellants' assertions.

2.2.117 An environmental authorisation was granted to the applicant on 21 October 2024 in accordance with section 24 of NEMA and the 2014 EIA Regulations. The environmental authorisation authorises the applicant to undertake three-dimensional seismic survey activities in an area off the west coast of South Africa, approximately 256 kilometres offshore St Helena Bay, extending north along the western coastline to approximately 220 kilometres offshore Hondeklip Bay (the Project Area). The survey area is the same Reconnaissance area which the applicant conducted a prior survey over approximately 7 months ago, which survey was completed by the applicant without any environmental incidents (2022 EA). The new survey area will also exclude an area of approximately 9000km² from full fold acquisition, as this area has already been surveyed in the previous survey which was completed on 28 April 2024. The potential impacts which were required to be assessed for purposes of the grant of an environmental authorisation for the proposed activities have been thoroughly and adequately assessed by the independent EAP. All relevant factors which needed to have been taken into account were so considered by the applicant and the EAP in the preparation of the BAR, and by the competent authority in deciding to grant the environmental authorisation.

2.2.118 An environmental impact assessment (EIA) is a risk-assessment based study and is a process of predicting and evaluating the likely environmental impacts associated with a proposed development or project. The EIA is inherently a predictive tool that is based on best available information and is in most cases not able to rely on absolute scientific certainty. The specialist assessments have clearly indicated information sources, identified gaps in available

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information, and listed relevant assumptions and limitations. The confidence level in the assessment is also noted for each impact. The level and type of mitigation proposed has followed the clear mitigation hierarchy presented in the specialist reports and also the BA Report. Keeping these limitations and gaps in mind, the assessment of impacts has adopted a strongly precautionary approach. This principle is acknowledged in Section 3(1)(p) of Appendix 3 of the NEMA 2014 EIA Regulations, which states that the EIA report must contain, inter alia, a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed. Section 12, amongst others, of the Basic Assessment Report (BAR) complies with this requirement. The specialists have, with due consideration of these gaps, assumptions and uncertainties, provided a reasoned opinion that the activity should be authorised. Accordingly, the mitigation measures proposed are deemed to be sufficiently mitigated to account for the eventuality that unforeseen events or organisms responses are encountered during the actual survey operations and will ensure that there is independent oversight and feedback to ensure compliance with the EMPr.

2.2.119 The findings of the specialist studies conclude that there are no environmental fatal flaws that should prevent the proposed project from proceeding, provided that the recommended mitigation and management measures are implemented. The BA and the associated specialist studies clearly present the available information and knowledge as well as the relevant uncertainties and gaps. The level of certainty has been considered in the assessment of impact significance. The identified and assessed impacts can be reduced to an acceptable level of significance.

2.2.120 With regard to the application of the precautionary principle, the Guideline on Need and Desirability states that "a risk averse and cautious approach (the precautionary principle) in the context of the protection of environmental rights is essentially about the assessment and management of risk." In line with this, the impacts and risks associated with the proposed activities are assessed and detailed in the BAR. It is important to note that the aversion of all risks alone is not the only criteria for EAs, and the competent authority has been mandated to make decisions based on the principles of sustainable development and not isolation of singular potential impacts. The application of the precautionary principle (in terms of a risk-

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averse approach) is triggered by two conditions namely:

2.2.120.1 a threat of serious or irreversible environmental damage; and

2.2.120.2 scientific uncertainty as to the nature and scope of the threat of environmental damage.

2.2.121 The proposed activities were determined not to trigger either of these conditions as demonstrated in the findings in the BAR and the recommended mitigation measures contained in the EMPr, there is therefore no basis upon which the precautionary principle can operate in respect of the proposed activities. The precautionary principle was therefore applied as contemplated by the court in *Sustaining the Wild Coast*, there was no "failure to apply the precautionary principle". Equally important to note within this context is that Section 24(b)(iii) of the Constitution states that "everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development" (our emphasis). Section 24 of the Constitution does not aim to protect a pristine environment. It recognises that there are multiple users of the environment, and these users must conduct their operations in a sustainable and responsible way. Equally, the precautionary principle does not aim to protect a pristine environment.

2.2.122 In addition, the applicant conducted a prior survey within the current Reconnaissance Permit Area (2022 EA) where the survey was completed by the applicant and has not resulted in any material adverse effects on the receiving environment.

2.2.123 The Scientific studies on Marine Ecology, Fisheries and Social Impacts were undertaken and discussed in Sections 9.3.1, 9.3.2 and 9.3.4 of the BAR respectively. In addition, local conditions, Marine Fauna observations, Sound Source Verification (SSV) drift buoys and other valuable environmental information gleaned from the previous survey in the area by the same applicant has informed and corroborated information presented in the BAR and the specialist

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reports. This includes substantiating that the SSV data has verified the sound source modelling within statistical limits. It is understood and acknowledged in the specialist report and BAR, that sound from seismic surveys may have an impact on marine fauna, however the potential significance of the impact is what is important in the context of the EIA. Various mitigations measures are proposed to reduce any impacts on marine fauna (including cetaceans) to acceptable levels as proposed in Sections 9.3 and 11.4 of the BAR and the accompanying EMPr (Appendix E of the BAR) which includes:

- 2.2.123.1 Planning seismic surveys to avoid most sensitive periods within the survey area for some marine fauna from early June to early December; Ensure the seismic vessel is fitted with Passive Acoustic Monitoring (PAM) technology, which detects some animals through their vocalisations. The PAM technology must have enough bandwidth to be sensitive to the whole frequency range of sensitive marine life expected in the area;
- 2.2.123.2 Implement the use of PAM 24-hr a day when the seismic source is in operation;
- 2.2.123.3 Ensure the PAM streamer is fitted with at least four hydrophones, of which two are HF and two LF, to allow directional detection of cetaceans;
- 2.2.123.4 Ensure spare PAM hydrophone streamers (e.g. 4 heavy tow cables and 6 hydrophone cables) are readily available in the event that PAM breaks down, in order to ensure timeous redeployment;
- 2.2.123.5 Implement a dedicated MMO and PAM pre-acquisition watch of at least 60 minutes (to accommodate deep-diving species in water depths greater than 200 m);
- 2.2.123.6 Make provision for placing at least one qualified PAM operator on board the seismic vessel. As a minimum, one must be on "watch" during the preacquisition observations and when the acoustic source is active;

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- 2.2.123.7 Defining and enforcing the use of the lowest practicable seismic source volume for production;
- 2.2.123.8 During times of poor visibility or darkness it is confirmed by PAM technology that no vocalising cetaceans are present in the 500 m mitigation zone during the pre-acquisition watch (60 minutes).
- 2.2.123.9 Ensuring that 'turtle-friendly' tail buoys are used by the survey contractor or that existing tail buoys are fitted with either exclusion or deflector 'turtle guards';
- 2.2.123.10 Implementing a "soft-start" procedure; and
- 2.2.123.11 Terminating seismic source on observation and/or detection of penguins or feeding aggregations of diving seabirds, turtles, slow swimming large pelagic fish (including whale sharks, basking sharks, manta rays [and devil rays- Namibia only) or cetaceans within the 500 m mitigation zone, etc.
- 2.2.124 In addition, a 5km buffer zone, where no seismic source operation is permitted, is recommended around all Marine Protected Areas.
- 2.2.125 As indicated in Section 9.1 of the BAR, potential environmental impacts were identified by the EAP, the appointed specialists, as well as the preliminary input from the public.
- 2.2.126 As indicated in Section 3, each seismic pulse is usually only between 5 and 30 milliseconds in duration, and despite peak levels within each pulse being high, the total energy delivered into the water is low. The majority of the produced energy is below 250 Hz, with 90% of the energy between 70 to 140 Hz, although pulses do contain some higher frequencies up to 16 kHz. It must be noted, however, that the sound level specifications for sound source arrays refer to sound levels in the vertical direction directly beneath the sound source array, generally near its centre, with nominal sound levels in the horizontal direction being ~10-20 dB lower.

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- 2.2.127 Detailed scientific study has been undertaken on the potential impacts of acoustic noise on marine species and fisheries, including assessment of environmental conditions, potential impacts. The findings of these assessments on the potential impacts, as well as details on mitigation measures in relation thereto are detailed in the Underwater Acoustics Modelling Report dated June 2024, the Biodiversity and Ecosystem Services Assessment Report dated June 2024 and the Fisheries Assessment Report dated June 2024 attached as Appendices C1, C2 and C3 of the BAR. The findings of these specialist studies are presented in sections 8, 9 and 11 of the BAR. It is crucial to note that the activities for this application are short-term, and if viewed in isolation considering only technical risks as discussed in various specialist reports conducted as part of the environmental authorisation process, the impacts will be low to negligible after mitigation is applied.
- 2.2.128 In addition to subjecting the Marine and Fisheries study to public review and commenting, the studies were also subjected to peer review (Appendices C2.1 and C.3.1 of the BAR), with the primary objective of ensuring the accuracy and completeness of the provided information and the interpretations of it. The Marine Biodiversity external peer review found that the marine biodiversity and ecosystem services assessment is comprehensive, detailed, logically constructed, and consistent in its approach to the impact analyses. It is based on current information and scientific understanding of the various effect levels on the defined receptors and, for acoustic effects, supported by sound transmission loss modelling. No gaps have been identified in this review and it is considered fit for purpose. The Fisheries external peer review found that the specialist assessment by CapMarine is highly commendable. It was undertaken clinically and with due diligence. The external peer review concurs with all impact significance levels proposed.
- 2.2.129 The constitution of any country is the supreme law of that country. The Bill of Rights in chapter 2 section 24 of the Constitution of South Africa Act (Act No. 108 of 1996) makes provisions for environmental issues and declares that: *“Everyone has the right –*
a. to an environment that is not harmful to their health or well-being; and
b. to have the environment protected, for the benefit of present and future generations,

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through reasonable legislative and other measures that:

- i. prevent pollution and ecological degradation;*
- ii. promote conservation; and*
- iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”*

2.2.130 The State must therefore respect, protect, promote and fulfil the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities. The Constitution therefore recognises that the environment is a functional area of concurrent national and provincial legislative competence, and all spheres of government and all organs of state must cooperate with, consult and support one another if the State is to fulfil its constitutional mandate. The application for the exploration activities ensures that the environmental right enshrined in the Constitution contributes to the protection of the biophysical and social environment. Subsequently, the BA and associated impact mitigation actions are conducted to fulfil the requirement of the Bill of Rights.

2.2.131 As indicated in Section 11.4.1 of the BAR, a key component of the BA process was to explore practical ways of avoiding, and where not possible, reducing potentially significant impacts of the proposed seismic acquisition activities. The mitigation measures put forward are aimed at preventing, minimising, or managing significant negative impacts to as low as reasonably practicable (ALARP). The mitigation measures are established through the consideration of legal requirements, project standards, best practice industry standards and specialist inputs.

2.2.132 It is not disputed that MMO sightings are not 100% efficient, however MMO/PAM/FLO reports from the previous survey, over the same area, observed and successfully implemented appropriate mitigation measures with no adverse outcomes to the receiving environment. . Various approaches have been adopted over the years to improve observer efficiency. These have, however, not proven as effective as initially anticipated resulting in the implementation of the 24/7 PAM surveillance. Various mitigations measures are proposed to reduce any impacts on marine fauna to acceptable levels, including soft start procedure, MMO and PAM monitoring and various other measures as proposed in the accompanying EMPr (Appendix E

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of the BAR). The technologies currently implemented are those used internationally. The MMO and PAM service providers continuously review methods and engage with the oil and gas sector on possible new technologies that can strengthen or improve mitigation implementation. Consideration of various alternative technologies is discussed in Section 5.3 of the Marine Biodiversity Assessment (Appendix C2 of the BAR).

- 2.2.133 Small food sources for the impacted marine life such as phytoplankton or with fish eggs or with spawn are discussed in detail in Section 8.4.2 of the BAR. Impacts and mitigation measures of these species are provided in Section 9.3.1.1. The impact of seismic noise on phytoplankton and zooplankton, considering the medium sensitivity and very low consequence, is deemed to be of very low significance both with and without mitigation. Due to the medium consequence and medium sensitivity of ichthyoplankton, but the low likelihood of the impact occurring in offshore waters, the impacts are deemed to be of medium significance. This potential impact cannot be eliminated due to the nature of the seismic sound source required during surveying. With the implementation of the above mitigation measure, the residual impact would reduce to very low significance.
- 2.2.134 As the proposed 3D survey area is located in waters in excess of 1 500 m depth, the received noise by benthic invertebrates at the seabed would be within the far-field range, and outside of distances at which physiological injury would be expected. The impact is therefore deemed of very low intensity across the survey area and for the four-month survey duration (immediate) and is therefore considered to be of very low consequence.
- 2.2.135 The zones of potential injuries for fish species with a swim bladder, turtles and fish eggs and fish larvae are predicted to be within 160 m from the array source. However, fish species without swim bladders have higher injury impact thresholds, and therefore have smaller zones of potential injuries within 80 m from the array source. When compared with total population sizes and natural daily mortality rates, the impact of seismic sound sources on fish eggs and larvae could be considered minimal. Relevant mitigation measures are recommended to minimise the seismic impact on assessed marine fauna species. Recommended safety zones are based on the maximum threshold distances modelled for PTS (marine mammals and sea

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turtles) and potential mortal injury (fish) due to immediate exposure from single pulses and cumulative exposure from multiple pulses. Implement a soft-start procedure if testing multiple seismic sources. Delay soft-starts if slow swimming large pelagic fish, turtles, seals, or cetaceans are observed within the zone of impact.

- 2.2.136 The third and fourth appellant have not provided the research being referred to for adequate review and response. However, as indicated on the SANCCOB Article dated 28 October 2024 (<https://sanccob.co.za/news/african-penguin>) after the environmental authorisation application in question was submitted, the IUCN uplisted the African Penguin from Endangered to Critically Endangered. The IUCN states that the African Penguin is assessed as Critically Endangered because it is undergoing an extremely rapid population decline, probably principally because of the impacts of competition with commercial fisheries and climate-mediated shifts in prey populations (IUCN 2024).
- 2.2.137 Impacts and mitigation measures for seabirds are provided in the Marine Biodiversity Report and Sections 8.4.2.5 and 9.3.1.1.4 of the BAR. As indicated in Section 8.4.2.5 of the BAR, fifteen (15) species of seabirds breed in southern Africa; Cape Gannet and African Penguin, four species of Cormorant, White Pelican, three Gull and four Tern species. The breeding areas are distributed around the coast with islands being especially important. The closest breeding islands to the Survey area are Bird Island in Lambert's Bay, the Saldanha Bay Islands and Dassen Island, which lie approximately 300 km, 285 km and 310 km to the east and southeast of the eastern and southern boundary of the proposed 3D survey area, respectively. Most of the breeding seabird species forage at sea with most birds being found relatively close inshore (10 - 30 km). Cape Gannets, which breed at only three locations in South Africa (Bird Island Lamberts Bay, Malgas Island and Bird Island Algoa Bay) are known to forage within 200 km offshore, and African Penguins have also been recorded as far as 60 km offshore. The proposed 3D survey area lies well offshore of the aggregate core home ranges of Cape Gannet and African Penguin (refer to Figure 30 of the BAR).
- 2.2.138 The potential impacts on seabird from the proposed activities is addressed in Section 9.3.1.1.4 of the BAR. Findings of the Marine Biodiversity Report, as summarised in the aforementioned

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section of the BAR, indicate that the potential impacts of seismic pulses to diving birds could include physiological injury, behavioural avoidance of seismic survey areas and indirect impacts due to effects on prey. The seabird species are all highly mobile and would be expected to flee from approaching seismic noise sources at distances well beyond those that could cause physiological injury. With the implementation of the mitigation measures, the residual impact on potential physiological injury or behavioural avoidance by seabirds, masking of sounds and indirect impacts on food sources would remain very low. Various mitigation measures have been designed in respect of these potential impacts and are contained in the BAR including:

- 2.2.138.1 Implementation of a “soft-start” procedure of a minimum of 20 minutes’ duration on initiation of the seismic source if during daylight hours it is confirmed visually by the MMO during the pre-shoot watch (60 minutes) that there are no penguins or feeding aggregations of diving seabirds within 500 m of the seismic source;
 - 2.2.138.2 In the case of penguins or feeding aggregations of diving seabirds being observed within the mitigation zone, delaying the ‘soft-start’ until animals are outside the 500 m mitigation zone;
 - 2.2.138.3 Termination of seismic source on observation of penguins and feeding aggregations of diving seabirds within the 500 m mitigation zone; and
 - 2.2.138.4 For penguins and feeding aggregations of diving seabirds, terminate source until such time as the animals are outside of the 500 m mitigation zone (seismic “pause”, no soft-start required). If visual confirmation is not possible implementation of a seismic pause of 4 minutes.
- 2.2.139 All relevant potential impacts of the proposed activities on Marine Protected Areas (MPAs) and sensitive environments have been thoroughly assessed in the BAR. Various figures included in the specialist Marine Biodiversity Assessment (Appendix C2 of the BAR) show the location of the Reconnaissance Permit Area in relation to the project - environment interaction points, location of seabird and seal colonies and resident whale populations, MPAs and

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Ecologically and Biologically Significant Areas (EBSAs). Numerous sanctuaries, marine protected area (MPA) exist offshore and along the coastline of the Western Cape, although none of them overlap with the Reconnaissance Permit Area.

2.2.140 Conservation Areas and Marine Protected Areas (MPAs) are discussed in Section 8.6 of the BAR. As indicated in Section 8.6.2, there are six offshore MPAs that fall within the broader project area, namely the Orange Shelf Edge MPA, Child's Bank MPA, Benguela Muds MPA, Cape Canyon MPA, Robben Island MPA and the Southeast Atlantic Seamounts MPA. None of the six MPAs fall within the Reconnaissance Permit Area. The proposed 3D survey area lies well offshore of these MPAs. Apart from a minor overlap with one of the EBSA Management Zones in the north-eastern corner, the proposed reconnaissance area avoids these pristine and sensitive areas. Critical biodiversity areas (CBAs) within the Reconnaissance Permit and 3D survey areas include both CBA1 (irreplaceable) and CBA2 (natural areas selected to meet biodiversity targets). The assertion by the ninth appellant that the CBAs are "no-go areas" is incorrect. The CBA areas are not considered no-go areas for the purposes of seismic survey activities.

2.2.141 CBA 1 indicates irreplaceable or near-irreplaceable sites that are required to meet biodiversity targets with limited, if any, option to meet targets elsewhere, whereas CBA 2 are "best design sites" and there are often alternative areas where feature targets can be met; however, these will be of higher cost to other sectors and / or will be larger areas. Activities within these management zones are classified into those that are "compatible", those that are "not compatible", and those that have "restricted compatibility". Non-invasive (e.g. seismic surveys) and invasive (e.g. exploration wells) exploration activities are classified as having "restricted compatibility" in terms of the proposed compatibility matrix in the Sea-Use Guidelines. Activities with restricted compatibility require a detailed assessment to determine whether the recommendation is that they should be permitted (general), permitted subject to additional regulations (consent), or prohibited, depending on a variety of factors, as per the National Coastal and Marine Spatial Biodiversity Plan, 2022 (NCMSBP). The implication and potential impacts of the survey on these areas is specifically discussed in Section 3.4.2. of the specialist report. The potential impact of seismic surveys on marine fauna was also assessed to have

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low significance post mitigation. Petroleum production activities are, however, classified as “not compatible” in CBAs, but may be compatible, subject to certain conditions, in ESAs. If significant mineral or petroleum resources are identified during exploration (which is the objective of the planned seismic survey) the CBA in question can be re-evaluated and would require the assignment of an alternative CBA and/or biodiversity offsets as per the NCMSBP.

- 2.2.142 The NCMSBP for the coast and ocean around the South African mainland states that petroleum production may be possible in CBAs using lateral drilling or other techniques that do not result in biodiversity impacts. According to the plan, if significant petroleum resources are identified in these areas the selection of the site as a CBA could be re-evaluated, although this would require alternative CBAs to be identified to meet biodiversity targets. Seismic surveying is not only used for petroleum and natural gas exploration and development. It is also used for development of offshore wind, geothermal energy, and low-carbon solutions, such as carbon capture and storage and also more generally for providing more insight and understanding into the regional geology of the area for scientific purposes, therefore the CBA areas are not considered no-go areas for the purposes of seismic survey activities. Zero no-go areas within the proposed survey area have been identified in any of the specialist studies conducted.
- 2.2.143 The ninth appellant refers to the ‘personification’ of the CBA areas. These areas have no realistic chance of being personified. This ground of appeal is accordingly incorrect in law.
- 2.2.144 The proposed survey activities are expected to result in impacts on marine invertebrate fauna in the Orange Basin, ranging from negligible to very low significance. Only in the case of potential impacts to turtles and marine mammals are impacts of low significance expected.
- 2.2.145 The results of the acoustic modelling assessment, detailed in the Acoustic Modelling Report, were used to identify zones of impact for marine mammals and other species of concern based on relevant noise impact assessment criteria. Zones of impact were evaluated for physiological effects and behavioural disturbance, due to the immediate impact from single airgun pulses, as well as the cumulative effects of exposure to multiple airgun pulses over a

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period of 24 hours. The survey noise would be temporary. Due to the remote location of the survey area, noise would be expected to attenuate to below threshold levels before reaching fishing grounds. The spatial extent of the impact of seismic source noise is expected to be regional, although localised at any one time. The impact is considered to be fully reversible – any disturbance of behaviour that may occur as a result of survey noise would be temporary. With the implementation of the project controls and mitigation measures, the residual impact due to seismic noise is considered to be as low as reasonably practicable (ALARP) and acceptable relevant mitigation measures are recommended to minimise impacts on assessed marine fauna. Recommended safety zones are based on the maximum threshold distances modelled for PTS (marine mammals and sea turtles) and potential mortal injury (fish) due to immediate exposure from single pulses and cumulative exposure from multiple pulses.

2.2.146 Additional measures include the implementation of:

2.2.146.1 a soft-start procedure if testing multiple seismic sources.

2.2.146.2 delay soft-starts if slow swimming large pelagic fish, turtles, seals, or cetaceans are observed within the zone of impact.

2.2.147 As detailed in the Specialist Fisheries Report, the study area does not overlap with any of the fishing industry sectors apart from a slight overlap with the pelagic longline sector. The survey area does not coincide with spawning areas of key commercial species and noise generated by the seismic source would be expected to attenuate to below threshold levels for behavioural disturbance before reaching inshore recruitment and/or nursery areas. The Reconnaissance Permit area is situated well offshore of distributional area of snoek during its spawning and migration periods (an important species for the linefish and small-scale fisheries sectors). Due to the remote location of the Reconnaissance Permit area, noise would be expected to attenuate to below threshold levels before reaching fishing grounds of all other sectors viz. the demersal trawl, midwater trawl, demersal longline, tuna pole-line, small pelagic purse-seine, traditional linefish, west coast rock lobster and small-scale fisheries sectors.. Therefore, with the implementation of the project controls and mitigation measures, the

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residual impact due to seismic noise is considered to be of low negative significance for the fish and fishing industry. Relevant mitigation measures are recommended to minimize impacts on assessed marine fauna and fishing industry such as soft-start approach, avoiding sensitive areas, air gun testing, breaks in firing etc. In addition, in order to mitigate the impacts on the large pelagic longline sector, it is recommended that the survey be timed to take place between 15th December and 31st May of any year within the validity of the Permit (periods of relatively low fishing activity in the Reconnaissance Permit area) as well as avoiding the most sensitive periods within the survey area for some marine fauna from early June to early December. A 5 km buffer zone where no seismic source operation is permitted is recommended around all Marine Protected Areas.

2.2.148 The Marine Biodiversity assessment (Appendix C2 of the BAR) nowhere claims that acoustic surveys do not result in impacts on marine species or ecosystems, conversely the report clearly lists and describes the potential impacts. According to the marine faunal specialist, injury to pelagic species is likely at very short range, with behavioural disturbance occurring over greater distances. Section 9.3.1.1 of the BAR identifies, describes and assesses the potential impact on the marine ecology. Where relevant, this assessment has been informed by a specialist underwater acoustic modelling study (refer to Appendix C1 of the BAR) which aimed, among others, to identified the relevant PTS, TTS and behavioural impact zones associated with the survey in the specific receiving environment. Impacts to demersal species and benthic communities is highly unlikely as these receive the sound in the far-field only. Based on this assessment, the impacts on the marine fauna were found to be of Low/Negligible Significance. Additionally, stringent mitigation measures, in line with international best industry practice, were included to further reduce the potential impacts. The suggested management and mitigation measures extend beyond just the use of soft-starts. The planned survey purposefully avoids overlaps with conservation areas or MPAs (refer to Section 8.6 of the BAR). Additionally, stringent mitigation measures, in line with international best industry practice, were included to further reduce the potential impacts.

2.2.149 The noise impact on plankton is assessed in Section 9.3.1.1.7 of the BAR. The reconnaissance permit area is located far offshore (220 km at its closest point) and therefore

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beyond the influence of coastal upwelling, which will influence both plankton abundance and the abundance of fish species that depend on plankton as a food source. From Figures 17, 18 and 19 in the marine ecology specialist assessment, it is evident that the project area lies well beyond major fish spawning and recruitment area (and therefore zooplankton and ichthyoplankton abundance). As stated on page 143 of the Marine Biodiversity Report, the proposed survey area is located far offshore. It is not deemed necessary to implement mitigation measures, beyond avoiding the key spring spawning periods, thereby mitigating potential impacts on plankton to some degree. In addition, the applicant has avoided the key "ring fenced" fishing and spawning areas identified during previous consultation with the commercial fishing sector. No other direct mitigation measures for potential impacts on plankton and fish egg and larval stages are feasible or deemed necessary.

- 2.2.150 With reference to section 4.3.7. of the marine ecology study, that "numerous studies have been undertaken experimentally exposing the eggs and larvae of various zooplankton and ichthyoplankton species to airgun sources (Kostyuchenko 1971; Dalen & Knutsen 1987; Holliday et al. 1987; Booman et al. 1992; Kosheleva 1992; McCauley 1994; Popper et al. 2005; and reviewed in Carroll et al. 2017 and Sivle et al. 2021). These studies generally identified that for a large seismic array, mortalities and physiological injuries occurred at very close range (<5 m) only. The available scientific literature has been reviewed and considered by the marine ecology specialist in the assessment of the impact on zooplankton.
- 2.2.151 Various information regarding the perceptual effects and behavioural responses of whales to noise from seismic surveys is presented in Section 4.3.1 of the Marine Biodiversity Assessment.
- 2.2.152 Noise impacts on fish, including tuna and blue marlin, are discussed in Section 9.3.1.1.5 of the BAR. The location of the proposed survey area is well to the west of the 'ring-fenced' area and proposed mitigation measures, which are essentially designed to keep animals out of the immediate area of impact and thereby reduce the risk of deliberate injury to fish, reduces the intensity of the impacts relating to physiological injury / mortality to medium, the residual impact will reduce to low consequence and be of low significance.

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- 2.2.153 The impacts of seismic disturbances on marine fauna, including sea birds and sea turtles, has been identified and assessed by the marine biodiversity study (Appendix C2 of the BAR). The marine ecologist has indicated that impacts on marine fauna are anticipated to be low, provided all mitigations are implemented.
- 2.2.154 The noise impact on penguins is discussed in Section 9.3.1.1.4. With the implementation of the mitigation measures, the impact on potential physiological injury or behavioural avoidance by seabirds, including penguins, as well as masking of sounds and indirect impacts on food sources would remain very low.
- 2.2.155 Figure 3-33 in the Marine specialist report illustrates the substantial distance between the African penguin aggregate core areas on the west coast and the proposed survey area. Acoustic impacts of the proposed survey on coastal seabirds (including Cape cormorant, Cape Gannet, Bank cormorant) is thus highly unlikely.
- 2.2.156 It is unlikely that concurrent seismic surveys will be undertaken in the same area during the same survey window, however the cumulative impacts associated with multiple surveys was assessed. The decision-making authority will need to make the decision regarding whether concurrent surveys can take place. This BAR does not assess the impacts from seismic surveys that may occur in the future and after this survey. It is the responsibility of the future seismic surveys to assess the potential cumulative and additive impacts within their own BAR's to be presented to the decision making authority for assessment.
- 2.2.157 As stated in section 9.3.5 of the BAR, in the unlikely event that up to three surveys would take place at the same time within the same survey area, the risk of cumulative noise impact must be considered and is suggested to be managed as follows:
- 2.2.157.1 During seismic pulse releases, maintain a distance of at least 40 kilometres from any other survey vessel until sufficient objective evidence is obtained that a reduced buffer distance is acceptable; and

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- 2.2.157.2 Each of the additional activities to that described in the technical noise report would be modelled or otherwise considered in terms of the cumulative noise level and with reference to the criteria described in this report (the modelling is only considered required in the case where a 40 km buffer distance between active survey ships cannot be maintained).
- 2.2.158 Turtles are wide ranging oceanic species whose abundance in the open ocean is naturally low based on their population numbers. Also based on Figure 29 (migration corridors) and Figure 4-3 (Hatchling trajectories) in the Marine Biodiversity report (Appendix C2), the survey area is not located in areas known for high abundance.
- 2.2.159 Various mitigation measures are proposed to reduce the impacts of seismic noise on turtles. These include:
- 2.2.159.1 Implementation of a "soft-start" procedure of a minimum of 20 minutes' duration on initiation of the seismic source if during daylight hours it is confirmed visually by the MMO during the preacquisition watch (60 minutes) that there are no turtles within 500 m of the seismic source.
- 2.2.159.2 In the case of turtles being observed within the mitigation zone, delay the "soft-start" until animals are outside the 500 m mitigation zone. Termination of seismic source on observation of turtles within the 500 m mitigation zone.
- 2.2.159.3 Observation of any obvious mortality or injuries to turtles when estimated by the MMO to be as a direct result of the survey.
- 2.2.159.4 For turtles, terminate source until such time as the animals are outside of the 500 m mitigation zone (seismic "pause", no soft-start required).
- 2.2.159.5 Avoid surveying within 100 m of critical foraging habitats (e.g. seamounts or convergence zones).

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- 2.2.159.6 Ensure that 'turtle-friendly' tail buoys are used by the survey contractor or that existing tail buoys are fitted with either exclusion or deflector 'turtle guards'.
- 2.2.160 The use of a larger mitigation zone around the airguns came under discussion at the Department of Environment, Forestry and Fisheries' National Marine Biodiversity Scientific Working Group (BWG) on 7/12/2021. It was agreed that while a 500 m 'safety zone' may suffice for most whales and dolphins, extra precaution should be taken for the deep-diving beaked whales and kogiid whales. For these groups, the recommended zone of safety should be 1 km. It was, however, acknowledged that even the 500m 'safety zone' was likely ineffective for timely sighting of turtles. While it is acknowledged that mitigation measures for hatchlings and juvenile turtles may be inadequate, for East Coast surveys this is mitigated by avoiding periods when hatchlings and juveniles are likely to be most abundant. However Figure 4-3 on page 130 of the marine fauna impact assessment clearly shows that hatchling and juvenile abundance in offshore West Coast waters is low.
- 2.2.161 Section 9.3.1.1.3 of the BA Report as well as Section 4.3.3 of the Specialist Marine Biodiversity Assessment specifically describes and assesses the potential impacts on turtles. Numerous studies and literature are cited. "Using the root-mean-square (RMS) SPL criteria of 175 dB re 1 μ Pa, the Underwater Noise Modelling Study undertaken for the current project identified that the maximum threshold distance for behavioural disturbance for turtles caused by the immediate exposure to individual pulses was predicted to be within 1140 m from the 3D array. Turtles can therefore hear seismic sounds at a considerable distance and may respond by altering their swimming/basking behaviour or alter their migration route. However, as the number of turtles encountered during the proposed 3D survey is expected to be low, the impact of seismic sounds on turtle behaviour would be of low intensity, and would persist only for the duration of the survey (immediate – 4 months), and be restricted to the survey area. The impact of seismic noise on turtle behaviour is thus deemed to be of very low consequence"(BAR; Section 9.3.1.1.3).
- 2.2.162 It is recognised that beaked whales are particularly sensitive to anthropogenic noise and that they may temporarily cease foraging and delay their return to foraging and/or leave the area in

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association with exposure to mid-frequency signals at low acoustic levels. Beaked whales fall under high-frequency (HF) cetaceans and would need to be very close to the sound source for PTS and TTS onset to occur (see table 12 of the Marine Biodiversity Report). The combination of PAM and mitigation measures suggested including soft starts, as well as the longer pre-shoot watch should mitigate sufficiently for these deep diving cetaceans, particularly considering their likely low occurrence in the project area. The use of PAM will increase the probability of detection as animals are frequently echo-locating when on foraging dives. Passive acoustic monitoring is considered the best way forward for beaked whale detection and subsequent mitigation efforts. Standard pre-watch duration is usually 30 minutes however the marine ecology specialist has increased this to 60 minutes due to water depths and likely occurrence of Sperm whales (and beaked whales). The MMO's and the PAM mitigation are not carried out in isolation, but together with avoidance of sensitive habitats/ areas and the other mitigation measures (including soft starts), which are, in the opinion of the specialist and EAP, adequate to reduce the potential significance of the impacts.

2.2.163 The Marine Biodiversity Assessment report takes into account the seasonality of most baleen whale species along the West Coast (see Table 3-8), both in terms of their migratory movements (May to November) as well as the summer feeding aggregations of Humpbacks and Southern Rights off Cape Columbine. The reasoning for restricting the survey to the 15 December to 31 May period is stated numerous times in the BAR (Section 11.4.1.2.1). The mitigation requires planning of seismic surveys to avoid sensitive areas and periods for some marine fauna: specifically movement of migratory cetaceans (particularly baleen whales) from their southern feeding grounds into low latitude waters (June/July and late October/November), and their aggregation on the summer feeding grounds between St Helena Bay and Dassen Island from late October to late December and ensure that migration paths are not blocked by seismic operations. In this manner the Marine Biodiversity Assessment and BAR have included seasonal avoidance considerations. The Marine Biodiversity Report did also consider and assess the potential indirect impacts on the broader ecological processes such as predator/prey impacts.

2.2.164 Regarding impacts on cetacean prey, as stated in Section 4.3.1 of the Marine Biodiversity

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Assessment (Appendix C2) *Exposure to seismic airguns can cause hearing damage to fish (reviewed in Popper & Schilt 2008) and several studies have linked seismic exploration with short-term reductions in fish abundance and changes in distribution away from the seismic survey area (Engås et al. 1995; Slotte et al. 2004). The majority of baleen whales will undertake little feeding within breeding ground waters and rely on blubber reserves during their migrations. Therefore, they may not be affected by changes in fish distribution. Although the fish and cephalopod prey of toothed whales and dolphins may be affected by seismic surveys, impacts will be highly localised and small in relation to the feeding ranges of cetacean species, but cumulative impacts within species ranges must be considered.*

- 2.2.165 As stated in Section 4.6 of the marine ecology report, *despite the density of seismic survey coverage over the past 17 years, the southern right whale population is reported to be increasing by 6.5% per year, and the humpback whale by at least 5% per annum over a time when seismic surveying frequency has increased, suggesting that, for these populations at least, there is no evidence of long-term negative change to population size as a direct result of seismic survey activities.* This appears in stark contrast to the appellants assertion that seismic surveys have potential to significantly impact the species at a population level.
- 2.2.166 The combination of PAM and mitigation measures suggested, as well as the longer pre-shoot, watch should mitigate sufficiently for cetaceans. The use of PAM will increase the probability of detection, as animals are frequently echo-locating when on foraging dives. In the opinion of the marine specialist, mother-calf pairs vocalise much more than single adults so as to maintain contact. The survey is also scheduled to avoid the periods in which mother-calf pairs are likely to be present. Extract from recent paper by Indeek et al 2022: *"adult female-calf pairs maintain successful communication during periods of separation by calling more frequently rather than by producing louder calls. This strategy aids in maintaining acoustic contact while simultaneously limiting detectability by conspecifics."*
- 2.2.167 The BAR recognizes that the adverse effect of prolonged noise trauma from seismic surveys may intensify and last for a considerable time after the termination of the sound source. Section 2.1 of the noise report states "The potential impacts of noise on marine fauna species

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include audibility, detection and masking of communication and other biological important sounds, behavioural responses and physiological impacts which generally include discomfort, hearing loss, physical injury, and mortality (Richardson et al, 2013; Erbe et al., 2018; Popper and Hawkins, 2019a). This also discusses and cites research on the relative importance of these impacts in regard to management measures.

- 2.2.168 It is acknowledged in the report that some species start their migration periods earlier (e.g. Minke), delay their southward migration to utilise local feeding grounds (e.g. Southern right, Humpback) or have migration periods opposite to the majority of balaenopterids (e.g. Bryde's) and that most odontocetes are present year round. However, the period from early June to early December has become recognised by the industry as the most sensitive period for the movement of migratory cetaceans and all surveys are planned so as to avoid these months.
- 2.2.169 The mitigation measures in marine biodiversity report have been identified through international literature on mitigation measures imposed elsewhere, and then adapted to suit the local situation and subsequently fine-tuned with input and the assistance of a number of regular and extremely experienced MMOs.
- 2.2.170 There is a requirement for the placing of at least two qualified MMOs on board the seismic vessel. As a minimum, one must be on watch during daylight hours for the pre-acquisition observations and when the acoustic source is active. The mitigation requirements are included in the EMPr (Appendix E) and Section 5.4 of the Marine Biodiversity Report (Appendix C2)
- 2.2.171 Potential impacts on turtles are addressed in Section 9.3.1.1.3 of the BAR. As per Section 9.3.1.1.3 of the BAR, the numbers of adult and neonate turtles which may be encountered in the area over which the application for a reconnaissance permit has been made (the Reconnaissance Permit Area) may be seasonally high, particularly in the Child's Bank and Orange Shelf Edge Marine Protected Areas (MPAs) (which are in any case located outside of the survey area), and the Orange Seamount and Canyon Complex transboundary EBSA, which may be frequented by leatherbacks on their migrations. Consequently, the sensitivity of turtles to seismic noise is considered to be high, particularly neonates and juveniles as they

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are unable to actively avoid seismic sounds and consequently are more susceptible to seismic noise. However, various mitigation measures are proposed to reduce the impact on turtles to a low significance.

2.2.172 Section 9.3.1.1.2 of the BAR identifies and assesses the potential impact on Cape Fur Seals. Figure 3-34 in the marine biodiversity specialist assessment illustrates the foraging ranges of seals on the West Coast from tracking data. From this it is evident that the survey area lies well offshore of these foraging ranges. Seals are highly mobile animals with a general foraging area covering the continental shelf up to 120 nautical miles offshore. The proposed survey area therefore avoids the likely extent of the seals foraging areas. Further, in the unlikely event that the seals are located that far offshore, the implementation of the typical 'soft-start' procedures as well as the other mitigation measures proposed, will reduce the impacts on seals to very low environmental risk and very low significance.

2.2.173 The results of the acoustic modelling assessment, detailed in the Acoustic Modelling Report, were used to identify zones of impact for marine mammals and other species of concern based on relevant noise impact assessment criteria. Zones of impact were evaluated for physiological effects and behavioural disturbance, due to the immediate impact from single airgun pulses, as well as the cumulative effects of exposure to multiple airgun pulses over a period of 24 hours. The survey noise would be temporary. Due to the remote location of the survey area, noise would be expected to attenuate to below threshold levels before reaching fishing grounds. The spatial extent of the impact of seismic source noise is expected to be regional, although localised at any one time. The impact is considered to be fully reversible – any disturbance of behaviour that may occur as a result of survey noise would be temporary. With the implementation of the project controls and mitigation measures, the residual impact due to seismic noise is considered to be acceptable. Relevant mitigation measures are recommended to minimise impacts on assessed marine fauna. Recommended safety zones are based on the maximum threshold distances modelled for Permanent Threshold Shift (PTS) for marine mammals and sea turtles and potential mortal injury (fish) due to immediate exposure from single pulses and cumulative exposure from multiple pulses. Additional measures include the implementation of a soft-start procedure if testing multiple seismic

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sources, And the delay of soft-starts if slow swimming large pelagic fish, turtles, seals, or cetaceans are observed within the zone of impact.

2.2.174 The reference to "non-intrusive" in the environmental authorisation may refer to the fact the seismic surveys are not physically invasive or intrusive, and no drilling or other invasive activities are proposed. Section 3 of the BAR explains what a seismic survey entails, "During seismic surveys high-level, low frequency sound pulses are generated by an acoustic instrument towed behind a survey vessel, just below the sea surface. The sounds are directed towards the seabed and the seismic signal is reflected by the geological interfaces below the seafloor. The reflected signals are received by an array of receivers or sets of hydrophones towed behind the vessel".

2.2.175 Section 4.3.7. of the Marine Biodiversity Report states that "numerous studies have been undertaken experimentally exposing the eggs and larvae of various zooplankton and ichthyoplankton species to airgun sources (Kostyuchenko 1971; Dalen & Knutsen 1987; Holliday et al. 1987; Booman et al. 1992; Kosheleva 1992; McCauley 1994; Popper et al. 2005; and reviewed in Carroll et al. 2017 and Sivle et al. 2021). These studies generally identified that for a large seismic array, mortalities and physiological injuries occurred at very close range (<5 m) only". The specialist study also references the study by McCauley cited by the appellant and states the following: "...McCauley et al. (2017) demonstrated significant declines in zooplankton abundance within a maximum range of 1.2 km of the airguns' passage (see also Tollefson 2017) and suggested that seismic surveys may result in significant and unacknowledged impacts on ocean ecosystem function and productivity. A follow-up publication by Richardson et al. (2017), however, queried the robustness of the McCauley et al. (2017) study on the grounds of insufficient sample size. Richardson et al. (2017) estimated that while zooplankton populations declined 22% within the survey area and 14% within 15 km of the survey area, biomass recovery occurred within 3 days following survey completion and any effects on zooplankton by seismic noise would endure in the very short term only". The available scientific literature has been reviewed and considered by the marine ecology specialist in the assessment of the impact on zooplankton.

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2.2.176 As stated in section 1 of the BAR, the 3D survey will take in the order of 127 days including downtime. This is dependent on a number of factors such as vessel availability, weather conditions and the available window in which The applicant have to complete the survey once the appeal decisions are resolved since a Reconnaissance Permit is only valid for 1 year.

2.2.177 This underwater acoustic modelling study predicts received noise levels of various metrics (i.e. sound exposure levels (SELs) from single pulses, cumulative SELs from multiple pulses over 24 hours (SEL24hr), peak sound pressure levels (Pk SPLs) and root-mean-square sound pressure levels (RMS SPLs)) at noise sensitive locations within and adjacent to the proposed 3D survey areas. These noise levels are used to estimate the threshold distances to potential sound effects on marine fauna species of interest, including marine mammals, fish and sea turtle species. The acoustic modelling study includes the following components:

2.2.177.1 Airgun source modelling, i.e. modelling of sound energy emissions from the source arrays proposed to be used in the 3D seismic survey, including the far-field signature and its power spectral density (PSD), as well as the beam pattern of each source array.

2.2.177.2 Short range modelling, i.e. prediction of the received noise levels over a range of up to four kilometres from the selected array source location of various depths, in order to investigate sound field variations due to the water depth changes, as well as to assess the potential high-risk immediate noise impact to marine fauna species of interest.

2.2.177.3 Long range modelling, i.e. prediction of the received noise levels over a range of up to two hundred kilometres from the selected array source locations, in order to assess the potential noise impact from the surveys on relevant far-field marine sensitive areas.

2.2.177.4 Cumulative noise exposure modelling, i.e. prediction of the cumulative SELs over a 24-hour period for selected representative survey scenarios adjacent to marine sensitive areas, to assess the potential cumulative noise impact to marine fauna

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species of interest.

- 2.2.178 As stated in section 2.3 of the Underwater Acoustic Modelling Report (Appendix C1 of the BAR), received noise levels can be predicted using known source levels in combination with models of sound propagation transmission loss between the source and the receiver locations. Zones of impact can then be determined by comparison of the predicted received levels to the noise exposure criteria for the marine fauna species of concern.
- 2.2.179 It should be noted that the proposed noise exposure assessment criteria for impulsive noise events are all significantly higher than typical natural ambient noise levels, which have overall RMS SPLs in the range of 80 – 120 dB re 1µPa in the case of calm to strong sea state conditions, respectively. Therefore, the natural ambient noise is not given consideration in the assessment of the zones of impact.
- 2.2.180 Predicted zones of impact define the environmental footprint of the noise generating activities and indicate the locations within which the activities may have an adverse impact on marine fauna species of interest. In this report, zones of impact are defined as follows:
- 2.2.180.1 For immediate impact from single pulses – the zone of impact represents the maximum horizontal distance from the sound source;
- 2.2.180.2 For cumulative impact from a typical survey operation scenario – the zone of impact represents the maximum perpendicular horizontal distance from an active seismic survey line.
- 2.2.181 In all cases, zones of impact are conservatively determined by using the maximum predicted noise level across the water column to determine the zone of impact. Since noise levels vary with depth at any location, there will be areas in the water column within the identified zone of impact that are exposed to lower noise levels than implied by the identified zones of impact, which represent the worst case.

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- 2.2.182 Figure 19 and Figure 20 in the Underwater Acoustic Modelling Report (Appendix C1 of the BAR) show the horizontal contour image of the predicted maximum SELs received at locations up to 200 km from source locations L1 and L2 respectively, overlaying the local bathymetry contours. Figure 21 and Figure 22 show the vertical contour images of predicted SELs across the water column along the propagation paths to the west, east, north and south of the modelled location. As can be seen from the horizontal and vertical contour figures, the received noise levels at far-field locations vary at different angles and distances from the source locations. This directivity of received levels is due to a combination of the directivity of the source array, and propagation effects caused by bathymetry and sound speed profile variations.
- 2.2.183 In general, the bathymetry profiles with significant upslope section across the continental slope region have the sound propagations experiencing significant attenuation due to the strong interaction between the sound signal and the seabed. The bathymetry profiles with downslope section have much less sound attenuation. These effects are evident for both selected modelling locations for propagation paths towards shoreline directions.
- 2.2.184 The 24-hour period for modelling is a precautionous approach in line with the National Oceanic and Atmospheric Administration CMS requirements for cumulative Sound Exposure Level modelling to evaluate zones of impact for physiological effects and behavioural disturbance.
- 2.2.185 With reference to Figure 21 of the Underwater Acoustic Modelling Report (Appendix C1 of the BAR), the long-range modelling is representative of the noise propagation within the acquisition area. The two stationary locations chosen include those adjacent to MPAs and close to the shore. The model computes the sound exposure levels (SELs) across the water column for all directions and chooses the worst-case scenario, which in this case are the areas without upslopes (west and south, see image below) to predict the extent of zones of impact and assess the potential zones of PTS and TTS for marine fauna. In choosing the worst case scenario the assessment is also selecting the highest value in the water column, which is more likely than not to be at a different depth as the species of interest.

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- 2.2.186 The authors agree that sound exposure contributions from adjacent survey shots vary with the distances from the receiving locations to the survey line. Based on this consideration, cumulative modelling is carried out for a modelling area around the survey lines so that the modelling area is sufficiently large to include all potential impact zones for assessed marine fauna species. Therefore, two survey line sections (not source locations) of ~100 km length each are modelled and assumed to be acquired within 24 hours for each scenario. The selected cumulative modelling scenario's rationale is that the scenario is representative of the adjacent EBSAs (i.e., Cape Canyon and Associated Islands, Bays and Lagoon) as indicated in Table 12 of the acoustic report.
- 2.2.187 The latter is evidenced by the contour map of the modelled unweighted SEL_{24hr} for the study scenario S1 for the 3D study presented in Figure 23 of the acoustic noise report. Noise levels below 160 dB were removed to clearly represent the image; however, the authors agree that unweighted SELs will be more widely propagated. The predicted maximum unweighted SEL_{24hr} and weighted SEL_{24hr} are modelled throughout the water column for the evaluated study scenario S1 and applied to the different marine fauna. The methodology used is representative of a conservative scenario.
- 2.2.188 The marine specialist has considered whether each impact is likely to cause irreversible or long-lasting adverse effects to any aspect of the environment that cannot satisfactorily be mitigated. The marine biodiversity report indicates that low to negligible impacts on marine life and that all the impacts are reversible.
- 2.2.189 The impact on catch rates due to sound elevation levels was assessed and sensitivity/vulnerability differences amongst the targeted fish species identified for each sector. With the implementation of the project controls and mitigation measures, the impacts of the proposed survey are considered to be of low significance for large pelagic longline sector. There is no impact expected on other fisheries sectors— the demersal trawl, midwater trawl, demersal longline, small pelagic purse-seine, tuna pole-line, line fish, west coast rock lobster, netfish and small-scale fishing sectors.

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- 2.2.190 Section 9.3.2.2 of the BAR identifies and describes the potential impact of the noise on fisheries. Specific reference is made to the findings of Hirst and Rodhouse (2000) as cited by the appellant. The specialist determined that there was no impact on the majority of the fisheries, and that there would be a low significance impact on the pelagic long-line sector if management and mitigation is applied.
- 2.2.191 Cumulative impacts are assessed as part of each specialist study and cumulative noise impacts associated with multiple surveys are discussed in Section 9.3.5 of the BAR.
- 2.2.192 This cumulative assessment in Section 4.6 of the Marine Biodiversity Report includes consideration of other ongoing exploration and production activities in the region, maritime vessel traffic, vessel lighting and operational discharges, mining activities, the fishing industry, and climate change.
- 2.2.193 In terms of noise modelling, refer to Section 6.3 of the Underwater Acoustic Modelling Report (Appendix C1 of the BAR). Cumulative sound exposure levels are taken into consideration, cumulative modelling is carried out for a modelling area within 60-km zone around the survey lines and with a 100-m grid size, so that the modelling area is sufficiently large to include all potential zones of impact for assessed marine fauna species.
- 2.2.194 The applicant further refers to Section 4.6 of the Marine Biodiversity Report (Appendix C2 of the BAR) which deals with Confounding Effects and Cumulative Impacts, and Section 4.4 of the Specialist Fisheries Report (Appendix C3 of the BAR) which addresses the increased impact on fisheries due to the combination of impacts from other projects that may take place during the same period. West coast mining activities are specifically identified and discussed in Section 3.4 of the Marine Biodiversity Report. Concerns regarding cumulative impacts was also specifically addressed in Section 8.1 of the Heritage Impact Assessment (Appendix C4 of the BAR) and in Section 8.3 of the Social Impact Assessment (Appendix C5 of the BAR). The cumulative noise impact associated with multiple simultaneous surveys is assessed separately and the findings and recommendations regarding this are presented in Section 9.3.5 of the BAR.

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- 2.2.195 Furthermore, the assessment methodology used in the EIA by its nature already considers past and current activities and impacts. In particular, when rating the sensitivity of the receptors, the status of the receiving environment (benthic ecosystem threat status, protection level, protected areas, etc.) or threat status of individual species is taken into consideration, which is based to some degree on past and current actions and impacts (e.g. the IUCN conservation rating is determined based on criteria such as population size and rate of decline, area of geographic range / distribution, and degree of population and distribution fragmentation).
- 2.2.196 The Basic Assessment process was carried out in accordance with the 2014 EIA Regulations. The BAR discussed each impact in terms of probability and likelihood, as well as the anticipated magnitude, amongst others to arrive at a final significance rating. The mitigation measures suggested to minimise the potential impacts were proposed by the relevant, qualified, specialists and are in the view of the specialists expected to be adequate to minimise and /or remedy the impacts. Various mitigation measures are proposed to reduce any impacts on marine fauna to acceptable levels. Apart from MMO and PAM monitoring, additional mitigation measures include a soft start procedure and timing survey to avoid key periods and sensitive areas for marine fauna. These and various other measures are proposed in the accompanying EMPr (Appendix E of the BAR). The impacts of seismic disturbances on marine fauna has been assessed by the Marine Biodiversity study (Appendix C2 of the BAR). The marine ecologist has indicated low to negligible impacts on marine fauna, provided all mitigations are implemented.
- 2.2.197 In the opinion of the EAP, the principals of NEMA have been properly applied. Stringent mitigation measures were included to further ensure the protection of the receiving environment. Due process was followed and the precautionary principle was adequately considered, applied and presented in the BAR. The Reconnaissance Area was specifically selected by the applicant to avoid potentially sensitive areas, as it is located further offshore and is also situated well outside of the fisheries ring-fence area.

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- 2.2.198 All impacts have been identified, and where such impacts cannot be reasonably avoided (prevented) relevant management and mitigation measures are recommended and are to be implemented in order to minimise the impacts. The recommended mitigation measures aimed at reducing the potential impacts were proposed by the relevant, qualified, specialists and are in the view of the specialists expected to be adequate to minimise and /or remedy the impacts. The marine specialist considered all available information and determined that the impacts on marine ecosystems and biodiversity would be low after mitigation is applied.
- 2.2.199 It is not clear from the tenth appellant's appeal exactly why the noise impact assessment is considered deficient; the appellant tenders a vague and unsubstantiated view. A detailed Acoustic Assessment was completed by SLR Australia (Appendix C1 of the BAR). The effects of stress on marine fauna is discussed in some detail under section 4.3.1 and 4.3.5 of the Marine Biodiversity specialist assessment (Appendix C2 of the BAR). The relevant sound exposure thresholds are presented, including PS, TTS and behavioural limits. The airgun array proposed for the 3D seismic survey is summarised in Table 6 with configuration shown in Figure 4 of the Acoustic Assessment. The array has a towing depth of 8.0 m and an operating pressure of 2 000 pounds per square inch.
- 2.2.200 Nowhere is it denied that stress does not result in impacts to marine fauna. Purdon et al. (2020) concluded that shipping stressors and climate-related stressors are increasing more rapidly in the South African EEZ than other stressors, with the sound of shipping being the major contributor to the soundscape off the West Coast (Shabangu et al. 2022). The acoustic impacts associated with seismic surveys must therefore be seen in the context of the ambient noise in the ocean. Impacts on whales, turtles, plankton and dolphins are all identified, discussed and assessed in detail in the BAR and Marine Biodiversity Assessment.
- 2.2.201 Furthermore, the appellant's reliance on the Earthlife case perpetuates the vague and unsubstantiated nature of this ground of appeal. It is reiterated that the facts in the Earthlife case are vastly distinguishable from the proposed activities. The Earthlife case specifically dealt with the assessment of climate change impacts of a proposed coal-fired power station namely that the climate change impact of the power station had not been completely

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investigated or considered in any detail prior to the competent authority rendering a decision on the project. In the present case, there are no significant GHG emissions directly related to the proposed activities, nor are there significant climate change vulnerability risks. The climate change impacts associated with the proposed activities would be negligible as is stated in the BAR. The appellant states that the "decision establishes the need for comprehensive environmental assessments, particularly when cumulative impacts are at stake". This statement is vague and unsubstantiated, and the applicants are left to infer that the appellants reference to cumulative impacts refers to the cumulative impacts of emissions related to exploration and /or production activities as opposed to the actual proposed activities which was before the CA and is now before the Minister on appeal. In this regard it is important to note that the term cumulative impacts is defined in the 2014 EIA Regulations as follows:

"cumulative impact", in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities."

2.2.202 The definition of cumulative impacts clearly confines the assessment of cumulative impacts to those associated with the activity that is being applied for and not potential future activities. Accordingly, the EAP must consider the reasonably foreseeable future impacts of the activity for which the environmental authorisation is sought. It does not state that the EAP must consider "the reasonably foreseeable impacts of future activities" such as exploration or production, which may or may not occur. This was also not the finding in the Earthlife case, so this case law offers no support for the appellant's statement.

2.2.203 As discussed in Section 9.1 of the BAR, the impact significance rating methodology, as provided by the EAP, is guided by the requirements of the NEMA EIA Regulations 2014 (as amended). The broad approach to the significance rating methodology is to determine the environmental risk (ER) by considering the consequence of each impact (comprising Nature, Extent, Duration, Magnitude, and Reversibility) and relate this to the probability/ likelihood of

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the impact occurring. This determines the environmental risk. In addition, other factors, including cumulative impacts and potential for irreplaceable loss of resources, are used to determine a prioritisation factor which is applied to the ER to determine the overall significance of each impact.

- 2.2.204 The sensitive marine environments are discussed in Section 3 of Marine Biodiversity and Ecosystem Services Report (Appendix C2 of the BAR). The current CBA map as provided in Harris et al (2022) and the associated sea-use guidelines are therefore very much a 'work in progress' and may change in future following stakeholder comment. The draft MSP has not yet been published for comment, with the plans from other sectors such as mining, fisheries and hydrocarbon exploration and production still being outstanding. They have been included in the specialist study for the sake of completeness. The various recommendations included in the Marine Biodiversity and Ecosystem Services Report are considered sufficient to manage operations therein accordingly.
- 2.2.205 The Marine Biodiversity and Ecosystem Services Report did consider and assess the potential indirect impacts on the broader ecological processes such as predator/prey impacts. The impacts on CBAs and MPAs were also assessed. The impacts were identified and assessed through consideration of the magnitude, duration, extent, and probability by a suitably qualified and experienced specialist consultant. The marine specialist has considered the proximity of the survey area to various sensitive marine areas and the interconnectivity of the ecological processes (refer to Section 4.3.8 of the Marine Biodiversity and Ecosystem Services Report).
- 2.2.206 The tenth appellant states that in "*Border Deep Sea Angling Association and Others v Minister of Mineral Resources and Energy and Others* [2021] ZAWCHC 111, the court emphasized that seismic activities within ecologically sensitive marine areas require robust cumulative impact assessments to comply with legal protections". **The court made no such finding.** Within the context of irreparable harm, the courts findings at para 35 and 36 are as follows -

I accept that the applicants are of the firm view that the seismic survey will cause irreparable harm. Objectively speaking, however, and considering the limited material in

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support of the applicants' contentions on this point, a reasonable apprehension of irreparable harm has not been established. There is, in addition, no basis on the papers to suggest that the detailed mitigation strategy (emanating from a 600-page EMPr) is inadequate or to gainsay that Shell will implement the promised range of mitigation measures and do so properly. Indeed, Shell is obliged to do so in terms of the EMPr to ensure that its activities remain in the low-risk band.

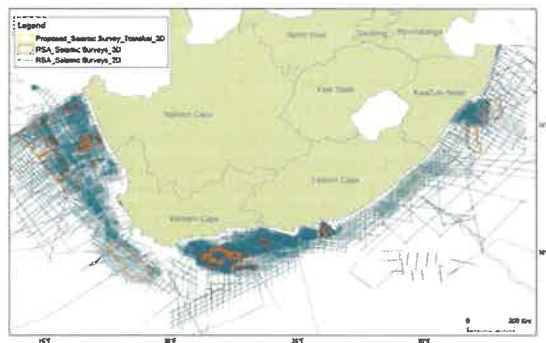
There is also no merit in the suggestion that the EMPr must be read to prohibit seismic surveying in the month of December. The EMPr provides that all other mitigation measures must be stringently enforced in the event that surveying during December takes place. This is consistent with the part of the EMPr dealing with physiological injury to cetaceans, which were the focus of much of the argument: the available information suggests that the animal would need to be in close proximity to operating airguns to suffer actual physiological injury. Being highly mobile the EMPr assumes that they would avoid sound sources at distances well beyond those at which injury is likely to occur. This does not suggest that there is no risk to marine species at all, but that is not the test.

2.2.207 The Namibian Government and Benguela Current Commission were both pre-identified as potential stakeholders / I&APs from the inception of the project. Proof of notifications is provided in Appendix B of the BAR. No comment was received from the Namibian Government or the Benguela Current Commission during any stage of the project. The BAR included an assessment of all potential environmental impacts. The extent of each impact was assessed by all specialists. Refer to the EAPs impact assessment methodology presented in Section 9.1 of the BAR. None of the identified potential marine environmental impacts are expected to extend a significant distance from the proposed survey area.

2.2.208 Seismic surveys are not new. They have been undertaken globally and locally for many decades. Seismic surveys have been a crucial tool in oil and gas exploration for over 50 years. In South Africa, numerous seismic surveys have been conducted since 1960, with the Petroleum Agency of South Africa keeping detailed records of these activities. Their exploration database includes seismic field and processed data for more than 300 000 line

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km's of 2D and 40 000 km² of 3D seismic data that was acquired offshore and some 9800 km of seismic processed data that was acquired during the late 1960's in the Karoo, Algoa and Zululand onshore basins. Globally, seismic surveys have been widely used in both onshore and offshore exploration, with thousands of surveys conducted to map subsurface structures and identify potential hydrocarbon deposits. The impacts and risks associated with these surveys are therefore generally well understood and evidenced, contributing to a comprehensive understanding of geological formations and aiding in the discovery of oil and gas reserves worldwide.



2.2.209 Globally, seismic surveys have been widely used in both onshore and offshore exploration, with thousands of surveys conducted to map subsurface structures and identify potential hydrocarbon deposits. The impacts and risks associated with these surveys are therefore generally well understood and evidenced, contributing to a comprehensive understanding of geological formations and aiding in the discovery of oil and gas reserves worldwide.

2.2.210 It is further noted that South Africa is preparing for the release of open acreage both offshore and onshore under license rounds to be scheduled following the enactment of the Upstream Petroleum Resources Development Bill (UPRDB), 2021, which was passed on 25 April 2024 and is with the President for assent to become law. While committed to achieve carbon neutrality by 2050, it remains the Government of South Africa's stated policy and desire to develop the country's indigenous natural gas and oil resources to ensure national energy security, stability, and economic development. South Africa is on a clear path to respond to national developmental imperatives by exploring, discovering, quantifying and developing its

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indigenous petroleum resources in an environmentally sustainable and responsible manner. The Department of Mineral Resources and Energy has invited proposals from seismic acquisition, seismic processing or any other companies involved in exploration data acquisition or enhancement, to enter into an agreement with PASA for data acquisition and/or enhancement over various areas offshore and onshore.

- 2.2.211 A detailed literature review is presented in the BAR to support all assessments. A site specific Underwater Acoustic Modelling Study was undertaken to inform the impact assessment. The defined Marine Protected Areas are specifically excluded from the survey. International best practice management and mitigation measures have been included.
- 2.2.212 The BAR not only identifies the potential impacts, but further, as is required by the regulations, assesses the significance of such impacts. The mere fact that an impact has the potential to occur does not automatically result in the significance of such impact being high. The final significance ratings are determined using information from the very extensive peer-reviewed literature together with the noise modelling results (which put the threshold distances from the source array to mortality and potential mortal injury into perspective), adopting the precautionary principle as is required when undertaking such impact assessments, and taking into account the sensitivity of receptors present in Southern African waters. Given all of the evidence, the conclusion reached for the various assessments is that impacts are either of low or very low significance.
- 2.2.213 As stated in section 9.3 of the BAR, studies have shown that physical damage to fish caused from acoustic sources occurs only in their immediate vicinity, in distances of less than a few meters. Whilst adult fish can flee from this noise, eggs and larvae are unable to do so and therefore may be affected by an acoustic pulse. The zones of potential injuries for fish species with a swim bladder, turtles and fish eggs and fish larvae are predicted to be within 160 m from the array source. Impacts on spawning and recruitment of fish stocks are assessed in section 8.5.2 of the BAR.
- 2.2.214 The cumulative assessment in section 4.6 of the Marine Ecology identifies, describes and

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assesses the potential and reasonably foreseeable cumulative or confounding impacts of other ongoing exploration and production activities in the region, maritime vessel traffic, vessel lighting and operational discharges, mining activities, the fishing industry, and climate change.

2.2.215 This assessment is limited to the existing and reasonably foreseeable cumulative impacts and does not include an assessment of potential and speculative future production activities for this block or adjacent blocks. The nature and extent of such potential future production activities is not known at this stage and as such it would be speculative to consider such at this stage. The potential direct, indirect, and reasonably foreseeable cumulative impacts associated with such future exploration and production activities can only reasonably be assessed at a later stage once further detail is available. "For cumulative effects analysis to help the decision-maker and inform interested parties, it must be limited to effects that can be evaluated meaningfully" (Information Series 7; DEAT; 2004). It is clear that due to the lack of detail on the extent of current hydrocarbon resources and consequently the nature and extent of future production activities, the potential impacts and effects thereof cannot at this stage be evaluated meaningfully. If there are applications for production in the future, then the EIA processes required for these future activities would need to consider and assess the cumulative impacts, considering the planned activities.

2.2.216 An assessment of cumulative noise impacts associated with multiple surveys is included in section 9.3.5 of the BAR. Despite the difficulty in undertaking a reliable assessment of the potential cumulative environmental impacts of future seismic acquisition in the Deep Water Orange Basin due to likely variation in the scope, extent and duration of proposed surveys, the cumulative impacts of three potential surveys occurring concurrently needs to be considered. The cumulative assessment assumes the worst-case scenario of two surveys (Searcher and TGS) occurring simultaneously during the summer survey window. As stated in Section 9.3.5: In the unlikely event that multiple surveys would take place at the same time within the same survey area, the risk of cumulative noise impact must be considered and is suggested to be managed as follows:

2.2.216.1 Should surveys be run simultaneously, ensure that a distance of at least 40 km is

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maintained between survey vessels until sufficient objective evidence is obtained that a reduced buffer distance is acceptable.

- 2.2.216.2 Each of the additional activities to those described in the technical noise report would be modelled or otherwise considered in terms of the cumulative noise level and with reference to the criteria described in the report. This modelling is only considered required in the case where a 40 km buffer distance between active survey ships cannot be maintained.
- 2.2.216.3 The zones of potential injuries for fish species with a swim bladder, turtles and fish eggs and fish larvae are predicted to be within 160 m from the array source. The zones of TTS effect for fish species with and without swim bladders are predicted to be within 3 500 m. The implementation of a 40km distance between vessels would ensure sufficient space for marine organisms to retreat.
- 2.2.216.4 It is noted the affidavit in annexure B5 of the tenth appellant's submission is dated in 2021 and refers to the Shell Exploration and Production South Africa notification letter for the Transkei Survey. The affidavit annexure B5 claims that the 2013 Environmental Management Programme (EMPr) lacks acoustic modelling. The declaration of 2019 refers to the well-known NMFS behaviour response threshold for marine mammals of 160 dB and is considered outdated based on peer-review literature. The Underwater Acoustic Modelling Report (Appendix C1 of the BAR) is dated 2024 and is an update of the previous acoustic report prepared for the applicant's previous application. The report includes acoustic modelling results for the well-known and typical NMFS behaviour response threshold for marine mammals of 160 dB.
- 2.2.216.5 Furthermore, as stated in Section 4.6 of the Marine Biodiversity assessment (Appendix C2 of the BAR):
- *While it is foreseeable that further exploration and future production activities*

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could arise if the current Environmental Authorisation is granted, there is not currently sufficient information available to make reasonable assertions as to nature of such future activities. This is primarily due to the current lack of relevant geological information, which the proposed exploration process aims to address. There are many other rights holders in the South African and adjacent Namibian offshore environment, but most of these are not undertaking any exploration activities at present or would be concurrently with the proposed 3D survey, particularly not in the far offshore environment. Thus, the possible range of the future prospecting, mining, exploration and production activities that could arise will vary significantly in scope, location, extent, and duration depending on whether a resource(s) is discovered, its size, properties and location, etc. As these cannot at this stage be reasonably defined, it is not possible to undertake a reliable assessment of the potential cumulative environmental impacts. It is also possible that the proposed, or future, exploration fails to identify an economic petroleum resource, in which case the potential impacts associated with the production phase would not be realised.

- *Furthermore, the assessment methodology used in the EIA by its nature already considers past and current activities and impacts. In particular, when rating the sensitivity of the receptors, the status of the receiving environment (benthic ecosystem threat status, protection level, protected areas, etc.) or threat status of individual species is taken into consideration, which is based to some degree on past and current actions and impacts (e.g. the IUCN conservation rating is determined based on criteria such as population size and rate of decline, area of geographic range / distribution, and degree of population and distribution fragmentation).*
- *The most reliable gauge of cumulative pressures is provided by Sink et al. (2019) and Harris et al. (2022). The map was generated as part of the NBA 2018 by doing a cumulative pressure assessment in which the impact of both current and historical ocean-based activities on marine biodiversity was determined by*

spatially evaluating the intensity of each activity and the functional impact to, and recovery time of, the underlying ecosystem types (Figure 4-6, left). Based on the severity of modification across the marine realm, a map of ecological condition was generated (Figure 4-6, right). From this it can be determined that the Reconnaissance Permit Area is located in an area experiencing very low cumulative impacts and that the ecological condition is therefore still natural or near-natural.

- *The assessments of impacts of seismic sounds provided in the scientific literature usually consider short-term responses at the level of individual animals only, as our understanding of how such short-term effects relate to adverse residual effects at the population level are limited. Data on behavioural reactions to seismic noise acquired over the short-term could, however, easily be misinterpreted as being less significant than the cumulative effects over the long-term and with multiple exposures, i.e. what is initially interpreted as an impact not having a detrimental effect and thus being of low significance, may turn out to result in a long-term decline in the population, particularly when combined with other acoustic and non-acoustic stressors (e.g. temperature, competition for food, climate change, shipping noise) (Przeslawski et al. 2015; Erbe et al. 2018, 2019; Booth et al. 2020; Derous et al. 2020). Physiological stress, for example, may not be easily detectable in marine fauna, but can affect reproduction, immune systems, growth, health, and other important life functions (Rolland et al. 2012; Lemos et al. 2021). Confounding effects are, however, difficult to separate from those due to seismic surveys.*
- *Reactions to sound by marine fauna depend on a multitude of factors including species, state of maturity, experience, current activity, reproductive state, time of day (Wartzok et al. 2004; Southall et al. 2007). If a marine animal does react briefly to an underwater sound by changing its behaviour or moving a small distance, the impacts of the change are unlikely to be significant to the individual, let alone the population as a whole (NRC 2005). However, if a sound source*

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displaces a species from an important feeding or breeding area for a prolonged period, impacts at the population level could be significant. The increasing numbers of southern right and humpback whales around the Southern African coast, and their lingering on West Coast feeding grounds long into the summer, suggest that those surveys conducted over the past 17 years have not negatively influenced the distribution patterns of these two migratory species at least. Information on the population trends of resident species of baleen and toothed whales is unfortunately lacking, and the potential effects of seismic surveys on such populations remains unknown.

- 2.2.217 Keeping these information gaps in mind, the assessment of impacts, including cumulative impacts, has adopted a strongly precautionary approach. The potential impacts on marine ecology were specifically identified in the BAR and the marine biodiversity assessment found all impacts on marine fauna and fisheries to be of low significance after mitigation measures were implemented.
- 2.2.218 Regarding the Block 3b/4b and DWOB applications, it should be noted that the area proposed by Searcher overlaps only slightly with the northwestern sections of the Block 3b/4b application area, however there is significant overlap with the DWOB application area. Both of these applications have been considered in the Table 4.14 if the Marine Biodiversity assessment under the section of the report dealing with cumulative impacts (Section 4.4 of Appendix C2).
- 2.2.219 The impacts on marine fauna and associated ecosystems have been identified and assessed, in the context of this specific application, by a qualified and experienced marine scientist. All impacts can be reduced to a low significance with the implementation of the suggested management and mitigation measures in the BAR and accompanying EMP. The EAP and specialists are of the opinion that the project should be authorised, on condition that the suggested management and mitigation measures are implemented.
- 2.2.220 Substantive information on the area, species and ecosystems at risk is provided in the Marine

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Ecology report (Appendix C2 of the BAR). Assumptions and limitations are included in section 12 of the BAR. Keeping these information gaps in mind, the assessment of impacts has adopted a strongly precautionary approach. Even with these information gaps taken into consideration, the level of certainty (i.e. the confidence rating) of the impact predictions in the Marine Biodiversity and Ecosystem Services Report is still considered high especially considering the outcomes, including the MMO and PAM observations during the previous Orange Basin 3D survey between 01 January and 28 April 2024 with no material adverse effects on the receiving environment. The mitigation measures in Marine Biodiversity and Ecosystem Services Report have been identified through international literature on mitigation measures imposed elsewhere, and then adapted to suit the local situation and subsequently fine-tuned with input and the assistance of a number of regular and extremely experienced MMOs.

- 2.2.221 The confidence of the impact predictions for each impact is included in the Impact Assessment Matrix (Appendix D of the BAR).
- 2.2.222 Underwater Sound Source Verification (SSV) was undertaken as part of the previous survey completed by the applicant in the first quarter of 2024, including drift Bouy deployment for underwater acoustic monitoring to establish an actual baseline prior to the commencement of the survey and then operational levels of noise during the survey. This sound data was used to verify the noise modelling predictions in the current acoustic report for this new application. Drift buoys (equipped with hydrophones) were deployed during the survey route to conduct an SSV, in order to record and analyse sound levels (for comparison against background ambient levels in key fisheries areas) and to provide input and assist in Fisheries Research. In summary, the model used for the acoustic report was considered validated and fit for purpose, based on the local SSV data analysed and reviewed to date by the specialist. Therefore, this information gathered during the previous survey has provided further opportunity to understand and corroborate baseline conditions in more detail and aid in the refinement of the acoustic assessment for the current application.
- 2.2.223 The statement cited by the tenth appellant comes from section 5.2 the BAR which references

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the general need for seismic surveys, stating that: *seismic surveying is not only used for petroleum and natural gas exploration and development, it can in certain instances also be used for development of offshore wind, geothermal energy, and low-carbon solutions such as carbon capture and storage and also more generally for providing more insight and understanding into the regional geology of the area for scientific purposes.*

- 2.2.224 The geological data acquired by the applicant during the previous survey is made available for the applicant to exclusively Market and License the rights of the Dataset during an authorised exclusivity period as agreed with the PASA. This information can be sold to anyone with an interest in the various aspects listed above for utilisation, for those particular types of projects during the period of exclusivity. After the period of commercial exclusivity has ended, the data is added to a database over South Africa's offshore areas, which may be used for the benefit of all South Africans.
- 2.2.225 The applicant did contact relevant scientific research institutions to offer the potential of collaborating in independent water research during the previous 2023/2024 survey. The applicant collaborated regarding data collection and sharing through the South African Marine Research and Exploration Forum (SAMREF). Discussions with the DFFE Oceans and Coastal Research team have resulted in support for the applicant's initial concept of drift buoy deployment in the permit area, the ring fenced fishing area and the coastal snoek fishery area. The results of the Drift Buoy Sound Source Verification conducted for the 2023/2024 survey were also provided to DFFE Oceans and Coastal Research department. The findings of the Drift Buoy SSV data acquired during the active acquisition of the applicant's 3D seismic survey provides an ideal opportunity for the DFFE to study the impact of that seismic survey through the raw data provided, bolstered by the deployment and results from their own equipment, including static monitoring stations, baited remote underwater video systems (BRAVS) to directly observe the impact of the seismic source and their plankton sampling transects to detect any impact on plankton populations. MMO and PAM data were also provided to the DFFE / PASA. Discussions with SAMREF and DFFE are also ongoing in support of this current survey.

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- 2.2.226 The independent Environmental Compliance Officer (ECO) audit reports associated with the previous survey have been forwarded to PASA as required and relevant daily reports are publicly available on the applicant's website.
- 2.2.227 The impact assessment has included a comprehensive assessment of all impacts, however this project is seen as a good opportunity to obtain local data and conduct local research, which could be useful for similar projects and applications that may take place in the future.
- 2.2.228 Regarding the relative reliability of two studies, which suggest different degrees of harm to zooplankton, the specialist has assumed a cautious precautionary interpretation that there will be a localised impact to zooplankton, however the important aspect in the context of an EIA is whether the effects would be substantive enough to have a meaningful impact. In this case, as stated in section 9.3.1.1.7 of the BAR, the impact of seismic noise on phytoplankton and zooplankton, considering the medium sensitivity and very low consequence, is thus deemed to be of very low significance both with and without mitigation. Due to the medium consequence and medium sensitivity of ichthyoplankton, but the low likelihood of the impact occurring in offshore waters, the impacts are deemed to be of medium significance. This potential impact cannot be entirely eliminated due to the nature of the seismic sound source required during surveying however impacts have been reduced to As Low as Reasonably Practicable (ALARP). With the implementation of mitigation measures, the residual impact would reduce to very low significance.
- 2.2.229 The tenth appellant cannot attempt to bolster its appeal by referring to or annexing the appeal of another appellant. The context within which such cross-refer occurs might obscure the assessment of the Wild Trust appeal (the fifth appellant). The applicant provided detailed responses to the Wild Trust appeal and their associated appeal report. In any event, none of the grounds raised in the Wild Trust appeal impugn the findings of the BAR or the mitigation measures contained in the EMPr. This has been thoroughly and appropriately dealt with in the appropriate appeal. The tenth appellant's second hand narration from the Wild Trust appeal should be disregarded in its entirety.

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- 2.2.230 The applicant / EAP responded to Wild Trust's comments on the draft BAR and to its subsequent appeal. The impacts of seismic disturbances on marine fauna have been thoroughly assessed by the Marine Biodiversity study (Appendix C2 of the BAR).
- 2.2.231 The assessment has been conducted on the basis of the entire survey area, which is identical to the survey area covered in the 2022 application (excluding the area which has already been surveyed). Both assessments were also based on the 127 day survey period and both were applications for 3D seismic surveys. The application is therefore essentially identical to the 2022 application in terms of survey type and duration, although the extent of the total area to be surveyed has been reduced based on areas already covered in the 2023/2024 survey. The impact assessment found all impacts on marine fauna and fisheries to be of low significance after mitigation measures were implemented.
- 2.2.232 It is further noted that the temporal control is not the only mitigation in place should residual migratory marine mammals be in the vicinity of the survey. Acoustic modelling informed mitigation zones for shutdowns and soft starts will be in place and monitored by MMO and PAM operators for the duration of the survey as detailed in the BAR and EMPr.
- 2.2.233 The impacts on these Albatross species are specifically identified in the Marine Biodiversity Assessment (Appendix C2). As stated in Section 4.3.4 of the Marine Biodiversity Report: *"despite their extensive distributions and feeding ranges, the proposed survey area overlaps with core usage areas for Yellow-nosed Albatross and Wandering Albatross (see Figure 3-33). The numbers of individuals encountered during the survey may thus not be insignificant, particularly in the vicinity of the Child's Bank and Orange Shelf Edge MPAs and associated with Tripp Seamount. Consequently, the sensitivity for both coastal and pelagic seabirds is considered to be medium."* With the implementation of the mitigation measures, the impact on potential physiological injury or behavioural avoidance by seabirds as well as masking of sounds and indirect impacts on food sources would remain very low.
- 2.2.234 The distances across which fish, turtles, and marine mammals may be affected and the indirect ecosystem effects of the seismic survey have been assessed as part of the Marine

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Biodiversity Assessment (Appendix C2 of the BAR) and informed by the site specific underwater acoustics modelling.

2.2.235 Further noted is that relative to the stated peer reviewed study (*Pichegru et al. 2017*), the applicant's Survey "Centroid" is approximately 380km away from the closest African Penguin breeding colonies, and the closest point of the Reconnaissance Permit is 260km away from the closest African Penguin breeding colonies, therefore the survey acquisition is well outside the 100km specification of the report. This is especially relevant, as the International Union for Conservation of Nature [IUCN] has uplisted the African Penguin from Endangered to Critically Endangered. However, the IUCN states that the African Penguin is assessed as Critically Endangered because it is undergoing an extremely rapid population decline, probably principally because of the impacts of competition with commercial fisheries and climate-mediated shifts in prey populations (IUCN 2024).

2.2.236 The technical Underwater Acoustic Modelling report is a standalone report that is used to inform the impacts on fisheries and marine fauna in those individual studies. As stated in section 6.5 of the acoustic report:

- *For marine seismic surveys, the cumulative exposure level at certain locations is modelled based on the assumption that the animals are constantly exposed to the survey airgun noise at a fixed location over the entire 24-hour period.*
- *However, in reality marine fauna species, particularly marine mammals and fish species assessed in this study, would not stay in the same location for the entire period unless individuals are attached to a specific feeding or breeding area or those species that can't move away, e.g. plankton and fish eggs/larvae.*
- *Therefore, the zones of impact assessed for marine mammals and fish species represent the worst-case consideration.*

2.2.237 As stated in the executive summary of the acoustic report (Appendix C1 of the BAR):

- *Due to the high level of impulsive signal emissions from the array source, marine mammals are predicted to experience a permanent auditory threshold shift (PTS) at close proximity to the source arrays due to the immediate exposure to individual pulses. Marine mammals of all*

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hearing groups except very-high-frequency cetaceans are predicted to experience PTS effect within approximately 45 m from the 3D source array at all assessed water depth scenarios. The maximum zones of PTS effect for very-high-frequency cetaceans are predicted to be within 270 m from the 3D array source. The zones of a temporary auditory threshold shift (TTS) due to a single pulse exposure for marine mammals of all hearing groups except very-high-frequency cetaceans are predicted to be within approximately 85 m from the source array. The maximum zones of TTS effect for very-high-frequency cetaceans are predicted to be within 500 m from the array source. Behavioural disturbance caused by the immediate exposure to individual pulses are predicted to be within 4.0 km from the array source for marine mammals of all hearing groups.

- 2.2.238 This modelled information was utilised by the Marine Ecologies and Fisheries specialist to inform their assessments, where the entire duration of the intended survey (127 days) is utilised to inform their impact predictions.
- 2.2.239 The 24-hour period used in the noise model therefore highlights the precautionary approach and worst-case scenario methodology utilised in the assessment of the Permanent and Temporary Threshold shifts for all key marine species.
- 2.2.240 In the unlikely event that multiple surveys would take place at the same time, the 40km buffer is considered sufficient by the noise specialist, on the basis that it provides a corridor between vessels where airgun noise approaches ambient levels such that animals may pass between, and/or the potential cumulative effect beyond this distance is considered to be negligible.
- 2.2.241 The tenth appellant's affidavit in annexure B5 of the appeal submission is dated in 2021 and refers to the Shell Exploration and Production South Africa notification letter for the Transkei Survey. The affidavit annexure B5 claims that the 2013 Environmental Management Programme (EMPr) lacks acoustic modelling. The declaration of 2019 refers to the well-known NMFS behaviour response threshold for marine mammals of 160 dB and is considered outdated based on peer-review literature. The Underwater Acoustic Modelling report (Appendix C1 of the BAR) is dated in 2024 and is an update of an older specialist report. The

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updated Underwater Acoustic Modelling report includes acoustic modelling results for the well-known and typical NMFS behaviour response threshold for marine mammals of 160 dB.

- 2.2.242 The mitigation measures don't just aim to mitigate effects close to the sources (i.e. PTS) but also TTS. PAM detects sounds further than the PTS thresholds. It should also be noted that soft starts would not only apply to animals in close proximity but would also be efficient mitigation for animals further away from the sound source as well.
- 2.2.243 As stated in Section 9.3.1.1 of the BAR: *"As the survey area is located within the main offshore shipping routes that pass around southern Africa, the shipping noise component of the ambient noise environment is expected to be significant within and around the proposed 3D survey area. For the duration of the survey an exclusion zone would be established around the survey vessel. Given the significant local shipping traffic and relatively strong metocean conditions specific to the area, ambient noise levels are expected to be 90–130 dB re 1 μ Pa for the frequency range 10 Hz – 10 kHz."*
- 2.2.244 The statement cited by the tenth appellant is taken from section 4.3 of the Marine Biodiversity report, and relates to the persistency / duration of the sounds in the ocean. It is not related to loudness. A citation is provided on page 99 of the Marine Biodiversity and Ecosystem Services Report (Appendix C2 of the BAR): *"Of all human-generated sound sources, the most persistent in the ocean is the noise of shipping"* (Erbe et al. 2018, 2019).
- 2.2.245 The "loudness" of the seismic survey activity is presented in section 3 of the noise report and section 3 of the BAR. Section 3 of the BAR states that: sound levels from individual sound sources used today in the seismic industry range from 200 to 255 dB re 1 μ Pa at 1 m, for small to large individual seismic sources, respectively. For sound source arrays, sound levels range from 235 dB re 1 μ Pa at 1 m for a small array (500 cubic inches) to 260 dB re 1 μ Pa at 1 m for large arrays (7 900 cubic inches).
- 2.2.246 The Underwater Acoustic Modelling study predicts received noise levels of various metrics (i.e. sound exposure levels (SELs) from single pulses, cumulative SELs from multiple pulses

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over 24 hours (SEL24hr), peak sound pressure levels (Pk SPLs) and root-mean-square sound pressure levels (RMS SPLs)) at noise sensitive locations within and adjacent to the proposed 3D survey areas. The PTS-onset and TTS-onset criteria for impulsive noise are outlined in Table 1 of the Underwater Acoustic Modelling report (Appendix C1 of the BAR), which incorporate a dual-criteria approach based on both peak sound pressure level (SPL) and cumulative sound exposure level (SEL) within a 24-hour period. The BAR therefore does not present the information in a biased manner.

- 2.2.247 The impact of noise on marine fauna has been adequately assessed and mitigated. Impacts were identified by a qualified specialist and assessed based on site specific modelling, and relevant internationally accepted management and mitigation measures have been proposed to reduce all impacts to acceptable levels.

PASA'S RESPONSE

In their comments to this ground of appeal, PASA submits that:

- 2.2.248 The authorised three-dimensional (3D) seismic survey technology is not a new technology in South Africa and is used globally. To be specific, the said seismic survey technology has been used in our shores since the late 1960s. The first appellant's assertion that none of the mitigation measures are guaranteed, as they never been tried or tested is not true. The proposed mitigation measures have been implemented in our shores for a quite a long time. Some of the proposed measures are considered international best practices and are globally implemented during the undertaking of the seismic surveys. It must be noted that while these mitigation measures are implemented globally, they have been modified to fit the conditions of the area. The said modified mitigation measures include the consideration of the migration season of whales, the peak fishing season, and the spawning or breeding seasons for vulnerable species and species of interest.
- 2.2.249 The second appellant's ground of appeal is not supported by any information substantiating it to assist PASA to respond meaningfully. The appellant also refers to the research papers

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overseas, which seem to support the appellant's assertion that the assessment provided is factually incorrect, without reference to such research papers. Referencing such articles when submitting the appeals would have provided PASA with the context to assist it to respond adequately to the ground of the appeal. It is therefore, impossible to respond meaningfully to this ground of appeal.

- 2.2.250 Having said the above, PASA wishes to clarify the statement referring to seismic survey technology as being non-intrusive in nature. This is on the basis that seismic surveys do not involve physical disturbance of the seafloor and that they are transient in nature, meaning that they have a short-term duration. The identification and assessment of the potential impact of the seismic surveys on the cetaceans, phytoplankton, etc. was undertaken and recorded in the EIA report.
- 2.2.251 According to the impact assessment undertaken for the environmental authorisation in question, no potential impact was deemed to result in irreplaceable loss of resources, environmental aspects or species. It is believed that the precautionary principle was considered through the impact assessment process, which identified and assessed potential impacts associated with the authorised activity and recommended mitigation measures. No constitutional or environmental rights will be infringed by the undertaking of the authorised activity. This is said because the conclusions from all specialist studies undertaken indicate that the undertaking of the authorised activity will not result in environmental fatal flaws. It is further indicated that the identified negative impacts will be reduced through implementation of the recommended mitigation measures.
- 2.2.252 The provisions of the constitution, section 2 NEMA principles, were taken into consideration in decision making and were informed by the outcomes of the assessment.
- 2.2.253 The passive acoustic monitoring technology will be used for 24 hours during active acquisition. This will be used to ensure that species are detected and action is taken, should species of interest be identified within the mitigation zone. The use of observers is not the only means of detecting cetaceans. It should also be noted that observers are used in all seismic surveys

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conducted worldwide. A certain level of experience is required from the observers before they are appointed to ensure that they have knowledge of what they are doing.

- 2.2.254 The existence of planktons in the application area is described in section 8.3 of the BAR. The impact assessment of the authorised activity of planktons is provide in section 9 of the BAR. The impacts on fish eggs and larva were assessed in the noise modelling and fisheries assessments. The applicant for the environmental authorisation is not required to produce any literature, however cited literature related to the planktons, fish eggs and larvae are listed in the reference list section.
- 2.2.255 The authorised activity is located beyond the foraging range of the African penguin and therefore no impact is expected on this species. The impact on the African penguins was therefore found to be of low significance with or without mitigation.
- 2.2.256 The survey area does not overlap with any Marine Protected Areas, but overlaps with poor or not protected marine ecosystem types and critically biodiversity areas 1 and 2: natural. No shooting will be undertaken over the MPAs and a 5 km buffer area will be implemented around all MPAs in close proximity to the survey area.
- 2.2.257 Impacts of the authorised activity on marine life are of low significance. No detrimental negative impacts are therefore expected on marine life.
- 2.2.258 The department is not in agreement with the statement that soft start is one of the primary mitigation measures implemented in South Africa. It is believed that the exclusion of environmental sensitive areas, migration and breeding periods of species of concern and peak fishing periods is the primary mitigation measure implemented in South Africa. There is a 60-minute pre-watch procedure that must take place before initiating the soft start. If the slow swimming species of concern are present in the mitigation zone, the soft start is delayed until such species are out of the mitigation zone. This means that air guns will not be fired until the species of concern are out of the mitigation zone.

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- 2.2.259 The literature consulted and sources cited are noted. However, most of the sources are older than the recommended 10 years. It is important to note that the literature cited as evidence of the statements made were experimental studies, in a controlled set-up such as in swimming pools and drums, while the experiments conducted on sea did not use actual air guns. Therefore, the reaction of the tested species will not be similar to species in the natural environment and use of the proper equipment and implementation of the globally used mitigation procedures.
- 2.2.260 Some of the cited literature was also cited in the BAR and the impacts on the marine species were therefore considered in the impact assessment. Impacts on marine species were assessed in the Biodiversity and Ecological Impact Assessment and impacts on invertebrates were found to range from negligible to low significance. Impacts on turtles and marine mammals are expected to be of low significance.
- 2.2.261 It is true indeed that there are no guidelines for seismic surveys for South Africa specifically. However, the recommended mitigation measures are based on globally used seismic survey guidelines such as JNCC, which are also applicable in South Africa. Peer-reviewed literature and best industry practices also inform and influence mitigation measures proposed in the said guidelines. While these guidelines influence mitigation measures contained in the EMPs, they are modified where necessary to fit the South African offshore environment. An example of that amendment includes the set seismic survey window based on the sensitivity of the specific offshore area.
- 2.2.262 The conservation status of all the marine species present in the area of interest is considered in the impact assessment. This is particularly important in determining the suitable impact management option for each affected species. The behaviour of the African penguins during the seismic survey operations is noted. The impact of the authorised activity on the African penguin is expected to be insignificant, because the survey area is located well offshore of the aggregate core home ranges of the African penguin.
- 2.2.263 Potential impacts on turtles were assessed and it was found that the common impacts relate to

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collision with the survey vessel and entanglement on tail buoys. The impacts are found to be of low significance due to the extensive distribution and feeding ranges of the turtles. The fitting of turtle guards on tail buoys as a mitigation measure to prevent entanglement also reduces the significance of the potential impact of turtles.

- 2.2.264 A specific and detailed impact assessment on cetacean species is provided in the Biodiversity and Ecosystem Services Assessment. The assessment consulted various peer reviewed literature. Table 13 of the BAR provides the conservation status of various cetacean species present around the area of interest. There are not many studies conducted in the South African waters on impacts of seismic survey on various marine species in South Africa. It would therefore be expected that data collected during seismic survey would be acceptable and used to understand the behaviour of marine species during operations. It is also understood that seismic surveys provide a great opportunity for collection of real time data on the behaviour of marine species during operations. Furthermore, data collected by MMO is accepted and credible data that can be used for scientific research, because the appointed MMO have the required qualifications and experience. The department therefore accepts the use of MMO data to describe the behaviour of marine species and possibly provide a direction for suitable mitigation measures.
- 2.2.265 The seismic survey window excludes the major migration period of species of concern, which is from June to early December. Furthermore, the survey area is located far from the area occupied by the species of concerns as shown in figures 31 and 32 of the BAR.
- 2.2.266 The appointed MMOs are qualified and experienced and are therefore able to record sighted species and recommend suitable action to the crew. The MMO observations are also supplemented by the active acoustic detections through PAM. Previous seismic survey has reported concurrent detections and sightings, these indicates that the MMOs are able to undertake thorough observations.
- 2.2.267 PAM is used globally as an effective mitigation measure. PAM can detect other species such as fish and invertebrates. Two MMOs are appointed for the duration of the survey and a

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minimum of one observer may conduct observations. In cases where there are issues with PAM, the EMPr provides a procedure to be followed. The said procedure also includes the use of both MMOs to supplement the inactive PAM.

2.2.268 The assessment of the cumulative impacts considering future activities are impossible to effectively assess unless they are known, otherwise such assessment would be flawed and inaccurate. Future activities related to other sea uses are not known and cannot be predicted. Future activities related to oil and gas exploration are also impossible to predict. This is because it is not known if there will be a need for further exploration and if that might lead to production. Therefore, details of future activities are not known and cannot be used to assess cumulative impacts. Cumulative impacts are based on speculations, because consideration of present and future potential impacts is required in assessing such impacts. However, potential cumulative impacts of all identified and assessed impacts are included in the BAR. The impact assessment methodology used in the BAR considered the past and current activities impacts, which is in line with the currently most reliable gauge for cumulative pressure as provided by Sink et al.,(2009). The cumulative impact for the authorised activity was found be very low.

2.2.269 The impacts of the authorised activity on various marine species were assessed and the recommended mitigation measures are based on the potential impact of each species. Impacts on invertebrates were found to range from negligible to low significance, while impacts on turtles and marine mammals were expected to be of low significance. Recommended mitigation measures include the following:

2.2.269.1 Implementation of the seismic survey procedures (i.e., pre-watch, soft start, gradual increase of firing guns etc).

2.2.269.2 Exclusion of sensitive environmental areas such as African Penguin foraging areas, seamounts, MPAs etc.

2.2.269.3 Use of MMO and PAM.

2.2.269.4 Avoidance of migration and spawning periods, fishing ring-fenced areas and

peak fishing periods.

- 2.2.270 Seismic surveys are regarded as non-intrusive in nature due to their transient nature and because their application does not physically disturb the ground (Aimil Ltd, 2023). However, this does not mean that seismic surveys do not have impacts on the receiving environment. The potential impacts of the seismic survey are assessed to ensure that the identified impacts are mitigated and managed.
- 2.2.271 The experiment conducted by McCauley et al., 2017 used experimental airguns, and concentrated on a specific area. In a real seismic survey operation, the airguns are not concentrated in one area as the nature of the survey is transient. Therefore, the response of the planktons to the exposed experimental airguns will not be similar to those of a seismic survey operation in a natural environment.
- 2.2.272 Cape Fur Seals are known to be relatively tolerant to seismic survey source, despite their initial startle response to the source, which is quickly reverted back to normal behaviour. Martin et al., 2022, observed a rapid recovery from a behavioural disturbance caused by the seismic survey noise on Cape Fur Seals from a study conducted in Namibia during the breeding season. The recovery after termination of seismic noise of seals is documented in peer reviewed articles. The potential impact of the seismic survey on cape fur seals is of low significance with or without mitigation. This is due to their high tolerance of seismic source and the fact that the exposure to the source is limited to 4 months. Furthermore, the implementation of the soft start procedure will prevent the startle response as the source will be increased gradually. The cause of the die-offs was never associated to the seismic survey operation, but it was predicted to have been caused by the lack of food due to climate change and overfishing.
- 2.2.273 The duration of the authorised seismic survey is 4 months starting from late December 2024 to May 2025) according to the final BAR submitted for decision making. This means that the period of the survey will avoid most sensitive seasons. Recommended mitigation measures will be implemented to ensure that all identified impacts are mitigated.

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- 2.2.274 The modelling is done for a 24-hour period with 20 airguns. The 20 airguns will be used for the survey operation. It is done for 24-hours because it is not practical to perform modelling on every shot, while there are many representative shots within a 24-hour period. The upslope site was chosen due to its significant sound propagation attenuation, which is less in downslope sites. There is no significant variations on seabed depth within the deepwater region for both source locations. There is no section in the modelling report that indicated the assumption that the airguns are stationary. But the modelling is focused on impacts received on areas around a survey line and the sound source.
- 2.2.275 The 24-hour noise impact is based on a simulation of air shots that occur in 24 hours during the survey. The modelling impact rating conclusion is therefore based on multiple 24 hour periods that are equivalent to the survey period. The 24-hour period was selected because similar shots are expected in each 24-hour period and therefore it was not necessary to do modelling for each period.
- 2.2.276 The scientific evidence suggest that noise impacts at greater distances away from the source are insignificant. Furthermore, each operating survey vessel will implement the recommended mitigation measures.
- 2.2.277 Furthermore, seismic impacts on behavioural reactions, physiological stress, reproduction, growth, health etc. aspects are assessed for short term period, due to the timeframe of the activity. The long term impacts that are identified on populations cannot be distinguished from those that might be caused by other sea uses.
- 2.2.278 The concerns raised by the tenth appellant during the BAR commenting period were responded to and considered in the final BAR as recorded in Appendix 11 of the BAR. The noise produced by the seismic survey vessel is the same as noise produced by other vessels that pass through the area of interest. Therefore, the impacts of the vessels on marine ecosystems of species is the same.

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- 2.2.279 The Biodiversity and Ecosystem Services Assessment provided a description of the affected environment, which includes affected areas in Namibia. Impacts on the affected areas of Namibia were included in the assessment. Transboundary requirements, such as the ones that relate to EBSAs and the management of various marine species, is considered and the recommendations for mitigating impacts are provided. Recommended mitigation measures are included in EMPr and were considered in the decision making.
- 2.2.280 The assessment undertaken for the authorised activity concluded that the implementation of the same activity will not result in significant harm to the receiving environment. The statement that the authorised activity presents unacceptable risks of significant harm to the marine environment is not supported by any evidence.
- 2.2.281 Baseline information is fully provided in the Biodiversity and Ecosystem Services Assessment and in the BAR. It is well known that there is a gap in published scientific information regarding the impacts of seismic surveys in the marine environment in South Africa. However, the BAR provided information that was observed by experts during the undertaking of previous seismic surveys in South African waters, even though the WildTrust scientist (fifth appellant) seems to not consider such as credible information.
- 2.2.282 The rating system is based on the commonly used impact assessment method.
- 2.2.283 The applicant did not commit to undertaking research, but provided an opportunity for any South African research institution to undertake the research during the seismic survey operations. The applicant continues to offer that opportunity during its survey operations. This opportunity means that the research institution would save on costs related to hiring a vessel to undertake the required research.
- 2.2.284 The monitoring done by the applicant during previous seismic survey operations is not a requirement for granting an environmental authorisation. It therefore did not inform the decision on the environmental authorisation in question. It should also be noted that the applicant is not a research institution and is therefore not expected to publish any monitoring

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results. It was shared with the Department.

- 2.2.285 PASA has responded to the appeals submitted by WildTrust and WildOceans (the fifth appellant).
- 2.2.286 The seismic survey is planned to be undertaken during the South African window period, which avoids sensitive marine activities. Furthermore, the survey will commence on the north of the license area to avoid late migrating or spawning species.
- 2.2.287 The PAM is used concurrently with MMO sighting.
- 2.2.288 Shipping activity occurs all year round within the area of interest, while the seismic survey occurs for a maximum of four months in a year. The shipping traffic therefore produces more noise than a survey that occurs once a year.

EVALUATION (Reasons for Decision)

- 2.2.289 The nub of this ground of appeal relates to whether the proposed 3D seismic survey poses a threat of serious or irreversible harm to marine ecosystems and individual species, including cetaceans, seals, turtles, fish, ichthyoplankton, zooplankton, penguins and other marine avifauna. The appellants contend that there is clearly scientific uncertainty as to the magnitude of this harm and the proposed mitigation measures are not all effective in preventing or minimising this harm, especially in relation to species that are unable to avoid the seismic array, and at night, given that PAM does not detect all species. They aver that the competent authority should have properly applied a “precautionary approach”⁵² when considering its decision on the environmental authorisation, in line with the *Sustaining the Wild Coast Judgment*,⁵³ given the dispute between various experts as to the significance of these impacts. The appellants also contend that the authorised activity ignores cumulative impacts, that it fails

⁵² Section 2(4)(a)(vii) of NEMA stipulates that sustainable development requires the consideration of all relevant factors, including that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and action.

⁵³ *Sustaining the Wild Coast NPC and Others v Minister of Mineral Resources and Energy and Others* (3491/2021) [2022] ZAECKHC 55; 2022 (6) SA 589 (ECMk) (1 September 2022).

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to assess transboundary impacts, and that it is incompatible with Critical Biodiversity Areas (CBAs), Ecologically or Biologically Significant Areas (EBSAs) and Marine Protected Areas (MPAs).

- 2.2.290 In evaluating the grounds of appeal, I considered the Underwater Acoustics Modelling Report and Biodiversity and Ecosystem Services Assessment report (attached as Annexures C1 and C2 to the BAR respectively).
- 2.2.291 The Underwater Acoustics Modelling study states (on page ii) that its purpose is to assist with the assessment of potential noise impacts on marine fauna species of interest, particularly for major marine sensitive areas of concern, and that the noise modelling results have been used to identify zones of impact for marine mammals and other species of concern based on relevant noise impact assessment criteria. Zones of impact have been evaluated for physiological effects and behavioural disturbance, due to the immediate impact from single airgun pulses, as well as the cumulative effects of exposure to multiple airgun pulses over a period of 24 hours. The noise impact assessment criteria for the marine fauna species of concern are detailed in section 2.0 of the report and were applied to assess permanent auditory threshold shift (PTS) and temporary auditory threshold shift (TTS) impact for marine mammals, and the mortality and recovery injury for fish and sea turtles. The identified relevant zones of impact are summarised in section 6.4 of the report.
- 2.2.292 The cumulative exposure level at certain locations was modelled based on the assumption that the animals are constantly exposed to the survey airgun noise at a fixed location over the entire 24-hour period. However, in reality, marine fauna species particularly marine mammals and fish species assessed in the study, would not stay in the same location for the entire period unless individuals are attached to a specific feeding or breeding area or those species cannot move away, e.g. plankton and fish eggs/larvae. Therefore, the zones of impact assessed for marine mammals and fish species represent the worst-case consideration.
- 2.2.293 The Underwater Acoustics Modelling Report assessed both immediate and cumulative acoustic impacts on marine mammals, fish, fish eggs and larvae, and sea turtles. The

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modelling predicts that the highest risks of physiological injury, including permanent and temporary threshold shifts, are generally confined to areas in close proximity to the seismic source, while behavioural disturbance may occur over greater distances, particularly in the case of cetaceans. The report further considered cumulative exposure over a 24-hour period and identified larger impact zones for certain sensitive receptors, especially low-frequency cetaceans. Although the report recognises limitations in the available scientific data relating to certain receptors, including fish eggs and larvae, it concludes that impacts reduce substantially with increasing distance from the source and can be managed through mitigation measures informed by the modelling, including exclusion zones, soft-start procedures, shutdown requirements and additional controls for concurrent survey operations.

- 2.2.294 The Underwater Acoustics Modelling Report also recommends mitigation measures to minimise the seismic impact on assessed marine fauna species. These include recommended safety zones based on the maximum threshold distances modelled for PTS (marine mammals and sea turtles) and potential mortal injury (fish) due to immediate exposure from single pulses and cumulative exposure from multiple pulses; soft-start procedures; and delaying soft-starts if shoaling large pelagic fish, turtles, seals, or cetaceans are observed within the zone of impact. It further states that in the unlikely event that multiple surveys would take place at the same time within the same survey area, the risk of cumulative noise impact must be considered and managed to achieve the same targets. Further modelling is only considered required if a 40 km buffer distance between survey ships cannot be maintained.
- 2.2.295 I am accordingly satisfied that the underwater acoustics assessment considered the noise impacts of the activity on marine species of concern, including noise and cumulative impacts based on the worst-case scenario. I note from the applicant's responding statement and the BAR that this study also informed the Biodiversity and Ecosystem Services Assessment (Marine Biodiversity Assessment) (Appendix C2 of the BAR) and the Specialist Fisheries Assessment (Appendix C3 of the BAR).
- 2.2.296 I have noted that the impact of seismic noise on whales and dolphins (cetaceans) is assessed at section 4.3.1. of the Marine Biodiversity Assessment report. The sensitivity of these species

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and potential impacts that could occur are considered on page 104. It records that thirty three (33) species or sub species/populations of cetaceans are known or likely to occur off the West Coast. The majority of migratory cetaceans in South African waters are baleen whales (mysticetes), while toothed whales (odontocetes) may be resident or migratory. Of the thirty-three (33) species, the blue whale is listed as 'Critically endangered', the fin and sei whales are 'Endangered' and the sperm, Bryde's (inshore) and humpback (B2 population) whales are considered 'Vulnerable' (South African Red Data list Categories). Due to its location offshore and proximity to important seabed features such as Tripp Seamount, Child's Bank and the Cape Canyon, the sensitivity of migratory cetaceans is thus considered to be high. However, the numbers of individuals encountered during the survey are likely to be low because of the extensive distributions of the various species concerned. The potential impacts of seismic survey noise on whales and dolphins could include physiological injury to individuals, behavioural avoidance of individuals (and subsequent displacement from key habitat), masking of important environmental or biological sounds and indirect effects due to effects on predators or prey.

2.2.297 The specialist found at page 123 that these potential impacts on cetaceans cannot be eliminated due to the nature of the seismic sound source required during surveying. However, the proposed mitigation measures, which are essentially designed to keep animals out of the immediate area of impact and thereby reduce the risk of deliberate injury to marine mammals, would reduce the intensity of most impacts to medium, and the residual impacts will reduce to low environmental risk and low significance, except for the effects on prey which remains of very low significance.

2.2.298 The impact of seismic noise on Cape fur seals is assessed at section 4.3.2 of the Marine Biodiversity Assessment report. The sensitivity of these species and potential impacts that could occur are considered on page 124 to 125. It states that seals are highly mobile animals with a general foraging area covering the continental shelf up to 120 nautical miles (~220 km) offshore, with bulls ranging further out to sea than females. Seals are therefore unlikely to be encountered in the proposed 3D survey area. Their sensitivity to the proposed seismic operations is considered to be low. However, considering the recent mass mortality of seals

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along much of the South and West Coasts, every precaution should be taken to avoid further stresses to these populations. The potential impacts of seismic survey noise on seals could include physiological injury to individuals, behavioural avoidance of individuals (and subsequent displacement from key habitat), masking of important environmental or biological sounds and indirect effects due to effects on predators or prey. The Cape fur seal that occurs off the West Coast forages over the continental shelf to depths of over 200 m and is thus unlikely to be encountered in the Reconnaissance Permit Area

2.2.299 The specialist found at page 128 of the report, that with the implementation of the typical 'soft-start' procedures, the residual impacts of physiological injury and mortality reduce to (very) low significance. All other impacts on seals would all remain low.

2.2.300 The impact of seismic noise on turtles is assessed at section 4.3.3. of the Marine Biodiversity Assessment report. The sensitivity of these species and potential impacts that could occur are considered on page 129 to 130. It records that the leatherback and loggerhead turtles that occur in offshore and coastal waters around southern Africa, and likely to be encountered in the Reconnaissance Permit area are considered regionally 'Critically Endangered' and 'Endangered', respectively, in the List of Marine Threatened or Protected Species (TOPS) as part of the NEMBA. The Agulhas Current migration corridor will be very active with migrating sea turtles between January and April (Harris *et al.* 2018), some of which may be distributed along the West Coast through mass transport of Agulhas Current water into the southeast Atlantic by warm core rings. Despite their extensive distributions and feeding ranges, the numbers of adult and neonate turtles encountered in the Reconnaissance Permit Area may therefore be seasonally high, particularly in the Child's Bank and Orange Shelf Edge MPAs, and the Orange Seamount and Canyon Complex transboundary EBSA, which may be frequented by leatherbacks on their migrations. Consequently, the sensitivity of turtles to seismic noise is considered to be high, particularly neonates and juveniles, as they are unable to actively avoid seismic sounds and consequently are more susceptible to seismic noise. The potential impacts of seismic survey noise on turtles could include physiological injury (including disorientation) or mortality from seismic noise; behavioural avoidance of seismic survey areas; masking of environmental sounds and communication; and indirect impacts due

to effects on predators or prey.

- 2.2.301 The specialist found at page 128 of the report, that with the implementation of the recommended mitigation measures, the residual impact on potential physiological injury would reduce to low significance. The other impacts would remain of very low significance.
- 2.2.302 The impact of seismic noise on seabirds is assessed at section 4.3.4. of the Marine Biodiversity Assessment report. The sensitivity of these species and potential impacts that could occur are considered on page 135 to 136. It records that among the marine avifauna occurring along the West Coast of South Africa, it is only the diving birds, or birds which rest on the water surface, that may be affected by the underwater noise of seismic surveys, including the Cape Gannet, White-chinned Petrel, Leach's Storm Petrel, Black-browed Albatross, Atlantic Yellow-nosed Albatross, Subantarctic Skua, Wandering Albatross and penguins. The African Penguin (*Spheniscus demersus*), which is flightless and occurs along the southwestern Cape coastline, would be particularly susceptible to impacts from underwater seismic noise. Consequently, the sensitivity for both coastal and pelagic seabirds is considered to be medium. The potential impact of seismic pulses to diving birds could include physiological injury, behavioural avoidance of seismic survey areas and indirect impacts due to effects on prey. The seabird species are all highly mobile and would be expected to flee from approaching seismic noise sources at distances well beyond those that could cause physiological injury, but initiation of a sound source at full power in the immediate vicinity of diving seabirds could result in injury or mortality where feeding behaviour override a flight response to seismic survey sounds. The potential for physiological injury or behavioural avoidance in non-diving seabird species, being above the water and thus not coming in direct contact with the seismic pulses, is considered negligible.
- 2.2.303 The specialist found at page 128 of the report, that with the implementation of the recommended mitigation measures, the residual impact on potential physiological injury or behavioural avoidance by seabirds, masking of sounds and indirect impacts on food sources would remain low.

- 2.2.304 The impact of seismic noise on fish is assessed at section 4.3.5. of the Marine Biodiversity Assessment report. The sensitivity of these species is considered on page 140 to 142. It states that fish can detect sounds within the frequency range of most widely occurring anthropogenic noises. They are able to discriminate between sounds, determine the direction of a sound, and detect biologically relevant sounds in the presence of noise (Popper & Hawkins 2019). In addition, some clupeid fish can detect ultrasonic sounds to over 200 kHz (Popper & Fay 1999; Mann *et al.* 2001; Popper *et al.* 2004). Fish that possess a coupling between the ear and swim-bladder have probably the best hearing of fish species (McCauley 1994). Consequently, there is a wide range of susceptibility among fish to seismic sounds, and those with a swim-bladder will be more susceptible to anthropogenic sounds than those without this organ (Popper & Hawkins 2019). As hearing thresholds differ greatly among species, the impacts of seismic sounds are therefore species specific. The greatest risk of physiological injury from seismic sound sources is for species that establish home ranges on shallow- or deep-water reefs or congregate in areas to spawn or feed, and those displaying an instinctive alarm response to hide on the seabed or in the reef rather than flee. The sensitivity of fish to seismic noise is considered to be high sensitivity.
- 2.2.305 The potential impacts of seismic survey noise on fish is described on page 140. Fish have two different systems to detect sounds namely: 1) the ear (and the otolith organ of their inner ear) that is sensitive to sound pressure and 2) the lateral line organ that is sensitive to particle motion. In fish, the proximity of the swim-bladder to the inner ear is an important component in the hearing as it acts as the pressure receiver and vibrates in phase with the sound wave. Vibrations of the otoliths, however, result from both the particle velocity component of the sound as well as stimulus from the swim-bladder. Although the higher frequency energy of received seismic impulses needs to be taken into consideration, the low frequency sounds of seismic surveys would be most damaging to swim-bladders of larger fish. The sound waves produced during seismic surveys are low frequency, with most energy at 20-150 Hz (although significant contributions may extend up to 500 Hz) (Hirst & Rodhouse 2000), and overlap with the range at which fish hear well (Dalen & Mæsted 2008). A review of the available literature suggests that potential impacts of seismic pulses to fish (including sharks) species could include physiological injury and mortality, behavioural avoidance of seismic survey areas,

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reduced reproductive success and spawning, masking of environmental sounds and communication, and indirect impacts due to effects on predators or prey (Popper & Hawkins 2018).

- 2.2.306 The specialist found at page 149 of the report, that the potential impacts cannot be eliminated due to the nature of the seismic sound source required during surveying. However, the location of the proposed survey area well to the west of the 'ring-fenced' area and the proposed mitigation measures, which are essentially designed to keep animals out of the immediate area of impact and thereby reduce the risk of deliberate injury to fish, reduces the intensity of the impacts relating to physiological injury / mortality to medium, and the residual impact will reduce to low significance. All other impacts on fish remain of low significance.
- 2.2.307 The impact of seismic noise on marine invertebrates is assessed at section 4.3.6. of the Marine Biodiversity Assessment report. The sensitivity of these species and potential impacts that could occur are considered on page 150. It states that the proposed 3D survey area lies well offshore where the ecosystem threat status is considered of 'Least concern', and where the deepwater habitat types are comparatively uniform and cover large areas. The benthic fauna of the abyss, lower and upper continental slope and outer shelf (beyond ~450 m depth) are very poorly known and there are no species of commercial value occurring that far offshore. Pelagic invertebrates that may occur in the Orange Basin are the giant squid, which is a deep dwelling species confined to the continental slopes. This species could thus potentially occur in the survey area, although the likelihood of encounter is extremely low. The sensitivity of benthic invertebrates is considered to be very low, whereas for neritic and pelagic invertebrates the sensitivity can be considered low. Following the precautionary principle, the low sensitivity was assumed in determining the significance.
- 2.2.308 Many marine invertebrates have tactile organs or hairs (termed mechanoreceptors), which are sensitive to hydro-acoustic near-field disturbances, and some have highly sophisticated statocysts, which have some resemblance to the ears of fishes and are thought to be sensitive to the particle acceleration component of a sound wave in the far-field. Potential impacts of seismic pulses on invertebrates would include physiological injury or mortality in the immediate

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vicinity of the airgun sound source, and behavioural avoidance. Masking of environmental sounds and indirect impacts due to effects on predators or prey have not been documented and are highly unlikely. The specialist found at page 128 of the report, that with the implementation of the typical 'soft-starts', the residual impact on potential behavioural avoidance by cephalopods would remain of low significance.

2.2.309 I have specifically considered the appellants' submissions concerning zooplankton, phytoplankton, ichthyoplankton, fish eggs and larvae, including reliance on the McCauley study and the contention that impacts at these lower trophic levels may result in cascading ecosystem consequences. I accept that these organisms are particularly vulnerable because they cannot actively avoid the survey vessel or sound source in the same manner as larger marine fauna. However, I note that the specialist assessment expressly considered the scientific literature relied upon by the appellants, including studies regarding plankton mortality and larval impacts. The specialist concluded that plankton abundances in the survey area are expected to be comparatively low and patchily distributed, that impacts would be localised and temporary, and that replenishment would occur through natural oceanographic processes. While I accept that some uncertainty remains regarding ecosystem-scale effects, I am not persuaded on the evidence before me that the likely impacts on plankton, zooplankton, fish eggs and larvae are of such magnitude as to justify refusing the application, particularly given the specialist conclusion that the residual impacts would remain of low significance.

2.2.310 Furthermore, the impact of seismic noise on plankton (including ichthyoplankton) is assessed at section 4.3.7. of the Marine Biodiversity Assessment report. The sensitivity of these species and potential impacts that could occur are considered on page 154 to 155. The proposed 3D survey area lies offshore of the Namaqua and Cape Columbine upwelling cells, in the warmer oceanic waters. Phytoplankton and zooplankton abundance in the clear offshore waters of the Benguela Current are thus expected to be low, although seasonal peaks may occur associated with Child's Bank and Tripp Seamount. The major spawning areas of the small pelagic shoaling species are on the continental shelf and along the shelf edge from Lambert's Bay to Mossel Bay. Hake, snoek and round herring also move to the western Agulhas Bank and southern west coast to spawn, generally in late winter and early spring, although hake are

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reported to spawn year round. There is no overlap of the proposed 3D survey area with the northward egg and larval (ichthyoplankton) drift of commercially important species, and the return migration of recruits.

2.2.311 Phytoplankton are not known to be affected by seismic surveys and are unlikely to show any significant effects of exposure to airgun impulses outside of a 1 m distance (Kosheleva 1992; McCauley 1994). Although subject to nutrient availability, the regeneration time of phytoplankton is rapid so that an area vacated by mortality through exposure to airgun blasts would be rapidly recolonized. Furthermore, the fast current speeds would ensure rapid displacement and replacement of damaged or dead plankton within the survey area. Zooplankton comprises meroplankton (organisms which spend a portion of their life cycle as plankton, such as fish and invertebrate larvae and eggs) and holoplankton (organisms that remain planktonic for their entire life cycle, such as siphonophores, nudibranchs and barnacles). Zooplankton densities are therefore generally patchily distributed. Invertebrate members of the plankton that have a gas-filled flotation aid, may be more receptive to the sounds produced by seismic airgun arrays, and the range of effects may extend further for these species than for other plankton. Phytoplankton, zooplankton and ichthyoplankton abundances across most of the survey area are thus expected to be comparatively low, and (if they occur) have a highly patchy distribution and seasonally high abundances. Although plankton distribution is naturally temporally and spatially variable and natural mortality rates are high, the overall sensitivity is considered medium due to the potentially reduced reproductive success in some of the small pelagic species.

2.2.312 As the movement of phytoplankton, zooplankton and ichthyoplankton is largely limited by currents, they are not able to actively avoid the seismic vessel and thus are likely to come into close contact with the sound sources, potentially experiencing multiple exposures during acquisition of adjacent lines. Potential impacts of seismic pulses on plankton would include physiological injury or mortality in the immediate vicinity of the airgun sound source. The specialist found at page 158 of the report, that this potential impact cannot be eliminated due to the nature of the seismic sound source required during surveying. With the implementation of the above mitigation measure, the residual impact would remain of low significance.

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- 2.2.313 The Marine Biodiversity Assessment also considers the impacts of seismic noise at an ecosystem level (section 4.3.8), as well as other types of impacts of seismic surveys (vessel and helicopter noise, vessel lighting, hull fouling and ballast water discharge, water discharges to sea, faunal strikes with project vessels and equipment, and accidental release of diesel or oil). Confounding Effects and Cumulative Impacts are assessed in section 4.6 of the report.
- 2.2.314 I have carefully considered the expert evidence relied upon by the appellants, including the evidence of the WildTrust scientists and the affidavits of Professor Shannon and Professor Maloney. I accept that this evidence raises legitimate concerns regarding scientific uncertainty, ecosystem-level impacts, cumulative stressors, zooplankton mortality, behavioural responses, and the adequacy of existing scientific knowledge concerning the long-term effects of seismic surveys. However, the existence of scientific uncertainty or competing scientific opinions does not, without more, establish that the competent authority was obliged to refuse the application. The question is whether the uncertainty is of such a nature and magnitude that no rational conclusion could be reached regarding the significance of the impacts or the effectiveness of the proposed mitigation measures.
- 2.2.315 Page 191 of the Marine Biodiversity Assessment clarifies that cumulative impacts should include past, present and reasonably foreseeable future developments or impacts, and that while it is foreseeable that further exploration and future production activities could arise if the current environmental authorisation is granted, there is not currently sufficient information available to make reasonable assertions as to nature of such future activities. The list of environmental effects being considered to inform decision makers and stakeholders should focus on those that can be meaningfully interpreted. The specialist found, on page 197 of the report, that with the implementation of the recommended mitigation measures, the intensity of the impacts to marine fauna associated with concurrent surveys (cumulative impacts) would reduce to medium and the probability of the impact would reduce to likely, but the overall significance would remain medium.
- 2.2.316 In this matter, I am not persuaded that the specialist assessments ignored the uncertainties

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identified by the appellants or proceeded on the basis that impacts would not occur. On the contrary, the specialist reports expressly recognise the potential for physiological injury, behavioural disturbance, displacement, masking effects, prey impacts, cumulative effects and information gaps. These uncertainties were incorporated into the significance ratings, informed the assessment of consequence and probability, and formed the basis for the extensive mitigation measures required by the EMPr. Importantly, neither the specialist assessments nor the peer reviews identified an environmental fatal flaw or concluded that the impacts could not be reduced to acceptable levels. I therefore prefer the opinions expressed in the specialist assessments, not because uncertainty is absent, but because those assessments expressly considered the identified uncertainties and nevertheless concluded, on the available scientific evidence, that the impacts would be of low significance following mitigation.

2.2.317 Cumulative noise impacts associated with multiple surveys were also assessed in paragraph 9.3.5 of the BAR. During the 2022 application, there were two pending applications at PASA namely, the TGS Geophysical Company survey application (PASA ref 12/1/040) as well as the GX Technology Corporation survey application (ref 12/1/042) which both overlap the area proposed for the Searcher 3D survey. There is currently only one multi-client application in the area i.e. TGS 12/1/040 as indicated in the PASA Petroleum Exploration and Production Activities Map (Appendix G to the BAR). The TGS 12/1/040 environmental authorisation was granted on 17 April 2023 and was appealed. All appeals were dismissed by the Minister (DFFE) on 22 May 2024. The survey window for the TGS 12/1/040 is January-May. Despite the difficulty in undertaking a reliable assessment of the potential cumulative environmental impacts of future seismic acquisition in the Deep Water Orange Basin due to likely variation in the scope, extent and duration of proposed surveys, the cumulative impacts of potential surveys occurring concurrently needs to be considered. The cumulative assessment assumed the worst-case scenario of two surveys (Searcher and TGS) occurring simultaneously during the summer survey window.

2.2.318 In the unlikely event that multiple surveys would be undertaken concurrently within the Deep Water Orange Basin Area, associated impacts to marine fauna would be of high intensity and extend regionally, over the short-term (assuming they take place over the same summer

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survey window). The impact consequence for cumulative surveys is therefore considered medium. Concurrent activities, such as other planned speculative or proprietary seismic surveys in the southern Benguela region could add to the cumulative impact on fisheries. Simultaneous survey operations would result in an increase in the extent and magnitude of the impact on the large pelagic longline sector. The impact duration would remain unchanged. Three seismic surveys of regional extent, undertaken simultaneously, could be expected to result in an impact of medium negative significance on the large pelagic longline sector, both with and without the application of mitigation measures. Once completed there is not expected to be any residual impact. In the unlikely event that multiple surveys would take place at the same time within the same survey area, the risk of cumulative noise impact is suggested to be managed as follows:

- Should surveys be run simultaneously, ensure that a distance of at least 40 km is maintained between survey vessels until sufficient objective evidence is obtained that a reduced buffer distance is acceptable.
- Each of the additional activities to those described in the technical noise report would be modelled or otherwise considered in terms of the cumulative noise level and with reference to the criteria described in the report. This modelling is only considered required in the case where a 40 km buffer distance between active survey ships cannot be maintained.

2.2.319 The zones of potential injuries for fish species with a swim bladder, turtles and fish eggs and fish larvae are predicted to be within 160 m from the array source. The zones of TTS effect for fish species with and without swim bladders are predicted to be within 3500 m. The implementation of a 40km distance between vessels would ensure sufficient space for marine organisms to retreat.

2.2.320 In section 5.1 of the Marine Biodiversity Assessment report, the specialist found that, overall, the proposed exploration activities to be undertaken are expected to result in impacts on marine invertebrate fauna in the Orange Basin, ranging from negligible to very low

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significance. Only in the case of potential impacts to turtles and marine mammals are impacts of low significance expected. In section 5.2, the specialist concluded that if all environmental guidelines, and appropriate mitigation measures recommended in the report are implemented, there is no reason why the proposed seismic survey programme should not proceed. Section 5.3 of the report also considers alternative technologies for seismic acquisition and noise abatement.

2.2.321 The specialist recommended suitable measure to avoid manage and mitigate identified impacts on marine fauna, including, but not limited to:

- planning seismic surveys to avoid the most sensitive periods for some marine fauna, notably migratory cetaceans;
- maintaining a 5 km buffer zone around all Marine Protected Areas (MPAs) where no airgun operation is permitted;
- ensuring the seismic vessel is fitted with Passive Acoustic Monitoring (PAM) equipment and that qualified PAM operators are placed on board the vessel;
- ensuring that the acoustic source equipment uses the lowest practicable airgun volume and eliminates unnecessary high frequencies;
- placing of at least two qualified MMOs on board the seismic vessel;
- ensuring that 'turtle-friendly' tail buoys are used;
- implementing a dedicated MMO and PAM pre-shoot watch of at least 60 minutes (to accommodate deep-diving species in water depths greater than 200 m);
- implementing 'soft-start' procedures;
- delay 'soft-starts' if penguins or feeding aggregations of diving seabirds, slow-swimming large pelagic fish, turtles, seals or cetaceans are observed within the mitigation zone; and
- Terminate seismic shooting (shut downs) on:
 - observation and/or detection of penguins or feeding aggregations of diving seabirds, turtles, slow swimming large pelagic fish (including whale sharks, basking sharks, manta rays [and devil rays-Namibia only]) or cetaceans within the 500 m mitigation zone.
 - observation of any obvious mortality or injuries to cetaceans, turtles, seals or mass mortalities of squid and fish (specifically large shoals of tuna or surface shoaling

small pelagic species such as sardine, anchovy and mackerel) when estimated by the MMO to be as a direct result of the survey.⁵⁴

2.2.322 Even if I were to accept the appellants' submission that Marine Mammal Observers (MMOs) and Passive Acoustic Monitoring (PAM) systems are not infallible and cannot guarantee the detection of every marine animal at all times, that PAM has limitations in relation to non-vocalising species and that visual observations are affected by weather conditions, darkness, observer fatigue, sea state and species behaviour, the issue for determination is not whether the mitigation measures eliminate all risk, but whether they reasonably reduce risk to an acceptable level. The specialist reports do not proceed on the assumption that MMO and PAM systems are perfect detection tools. Rather, they recognise those limitations and adopt a layered mitigation approach incorporating survey timing restrictions, avoidance of sensitive periods, PAM, MMOs, extended pre-shoot watches, soft-start procedures, shutdown procedures, exclusion zones, spatial buffers and species-specific mitigation measures. I am therefore not persuaded that the acknowledged limitations of MMO and PAM monitoring render the mitigation regime ineffective or invalidate the conclusions of the specialist assessments.

2.2.323 In addition, on page 93 of the Fisheries Assessment the specialist concludes that, based on the distance of fishing grounds from the Reconnaissance Permit area, only the large pelagic longline sector is considered to be susceptible to the effects of elevated sound. With the implementation of the project controls and mitigation measures, the residual impact due to seismic noise is considered to be of low negative significance for large pelagic longline sector. There is no impact expected on the demersal trawl, midwater trawl, demersal longline, small pelagic purse-seine, tuna pole-line, linefish, west coast rock lobster, netfish and small-scale fishing sectors. Cumulative impacts are also considered on pages 88 to 89 the Fisheries Assessment report. Although it is unlikely that concurrent seismic surveys would be undertaken in the same area during the same survey window, the report includes an assessment of the cumulative impact on fisheries during simultaneous operations of three regional seismic surveys off the west coast. Simultaneous survey operations would result in

⁵⁴ On page 201 to 210 of the Marine Biodiversity Assessment report.

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an increase in the extent and magnitude of the impact on the large pelagic longline sector. Three seismic surveys of regional extent, undertaken simultaneously, could be expected to result in an impact of medium negative significance on the large pelagic longline sector, both with and without the application of mitigation measures. Once completed there is not expected to be any residual impact. I evaluate the impacts on the fishing industry in further detail under the third ground of appeal.

2.2.324 I note that section 4.6 of the final BAR also considers the implications of the National Environmental Management: Integrated Coastal Management Act, 2008 (No. 24 of 2008) (NEM:ICMA) for the project. It states that while the proposed activity does not specifically require authorisation under the ICMA, section 63 of the ICMA places an obligation on the competent authority to take into account all relevant factors when deciding an application for environmental authorisation required for coastal activities. It is expected that the competent authority will consider all relevant factors listed in the ICMA (as outlined in section 4.6 of the BAR) and the relevant the findings of the environmental impact assessment when deciding the application, including, but not limited to, proximity to identified marine sensitive environments, impacts on marine environment, socio-economic impacts, potential pollution, the results of the public participation process, and the need and desirability of the proposed activity.

2.2.325 In relation to the fifth and tenth appellants' contention that the survey window (identified as late December to May) conflicts with the BAR's own findings that the peak abundances for many baleen whale species occurs between December and May, I note that the BAR (section 11.4.1.2.1) and Marine Biodiversity Assessment report (pages 113, 114 and 202) took into account the seasonality of most baleen whale species along the West Coast, and recommends that the seismic survey is planned to avoid the most sensitive periods for some marine fauna, notably the movement of migratory cetaceans (particularly baleen whales) from their southern feeding grounds into low latitude waters from early June to early December, and their aggregation on the summer feeding grounds between St Helena Bay and Dassen Island from late October to late December. I also take note of the applicant's response that while the report acknowledges that some species start their migration periods

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earlier (e.g. Minke), delay their southward migration to utilise local feeding grounds (e.g. Southern right, Humpback) or have migration periods opposite to the majority of balaenopterids (e.g. Bryde's) and that most odontocetes are present year round, the period from early June to mid-December has become recognised by the industry as the most sensitive period for the movement of migratory cetaceans and all surveys are planned so as to avoid this sensitive period.

2.2.326 I have noted the applicant's contention that the tenth appellant incorporated or relied upon portions of the fifth appellant's appeal submissions. Nothing turns on this issue. Neither NEMA nor the Appeal Regulations prohibit appellants from collaborating, associating with one another, or relying on submissions advanced by other appellants. The material issue for determination is not the source of the submission, but its substance and whether it raises considerations relevant to the appeal. I have therefore considered the content of the submissions on their merits.

2.2.327 In addition, I take note of the applicant's response that temporal control is not the only mitigation in place, should residual migratory marine mammals be in the vicinity of the survey. Mitigation zones for shutdowns and soft starts (informed by acoustic modelling) will be in place and monitored by MMO and PAM operators for the duration of the survey, as detailed in the BAR and EMPr.

2.2.328 In relation to the appellants' contentions that there are severe and unacceptable limitations with the methodology suggested for the detection of marine animal presence around a sound source. As stated at page 118 of the Biodiversity Assessment report, the seismic vessel will be fitted with Passive Acoustic Monitoring (PAM) technology, which will allow detection of animals through their vocalisation. PAM will be in use 24-hr a day when the seismic source is in operation. Therefore, the MMO's inability to sight some animals will be supplemented by the use of PAM system. There is a plethora of evidence as appears from the BAR and specialist reports referred to above, that there are no unacceptable risks of significant harm to marine environment which cannot be adequately mitigated.

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2.2.329 In relation to the tenth appellant's contention that the applicant repeats the same need and desirability motivation provided in its previous environmental authorisation application, but has failed to indicate whether, during its previous two seismic surveys conducted in and near the project area, it took the opportunity to gain more scientific insight and understanding into the baseline conditions and regional geology of the area, or to conduct independent research to better understand the impacts of seismic surveying, which information should have informed the final BAR and the competent authority's decision. I note the applicant's submissions that:

2.2.329.1 An Underwater Sound Source Verification (SSV) was undertaken as part of the previous survey completed by the applicant in the first quarter of 2024, including drift bouy deployment (equipped with hydrophones) for underwater acoustic monitoring, to establish an actual baseline prior to the commencement of the survey, and then operational levels of noise during the survey. The sound data gathered during the previous surveys was used to verify the noise modelling predictions in the current Underwater Acoustics Modelling report and to provide input into the Fisheries Assessment (for comparison against background ambient levels in key fisheries areas). The information gathered during the previous surveys has therefore provided further opportunity to understand and corroborate baseline conditions in more detail and aid in the refinement of the acoustic assessment for the current application for environmental authorisation.

2.2.329.2 The geological data collected by the applicant during the previous survey is made available to the applicant to market and license exclusively for an agreed period, as authorised by PASA. During this period, the data may be sold or licensed to interested parties for use in their projects. Once the period of commercial exclusivity ends, the data is added to a database of South Africa's offshore areas and may then be used for the benefit of all South Africans.

2.2.329.3 The applicant did contact relevant scientific research institutions to offer the potential of collaborating in independent on water research during the previous 2023/2024 survey. It collaborated regarding data collection and sharing through

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the South African Marine Research and Exploration Forum (SAMREF). Discussions with the DFFE Oceans and Coastal Research team have resulted in support for its initial concept of drift buoy deployment in the permit area, the ring fenced fishing area and the coastal snoek fishery area. The results of the Drift Buoy Sound Source Verification conducted for the 2023/2024 survey were also provided to DFFE Oceans and Coastal Research department. The findings of the Drift Buoy SSV data acquired during the active acquisition of the applicant's 3D seismic survey provides an opportunity for the DFFE to study the impact of that seismic survey through the raw data provided, bolstered by the deployment and results from their own equipment, including static monitoring stations, baited remote underwater video systems (BRAVS) to directly observe the impact of the seismic source and their plankton sampling transects to detect any impact on plankton populations. MMO and PAM data were also provided to the DFFE / PASA. Discussions with the SAMREF and DFFE are also ongoing in support of this current survey.

- 2.2.330 Regarding the tenth appellant's contention that the applicant's compliance with its previous environmental authorisation was not disclosed, and that neither the final BAR nor the competent authority's decision appears to have been informed by the monitoring results from the previous surveys, I considered whether NEMA or the 2014 EIA Regulations required the applicant to include its previous compliance reports in the application for environmental authorisation or in the BAR for purposes of disclosure to registered I&APs. I find no provision in NEMA or the 2014 EIA Regulations that imposes a general requirement on an applicant to disclose its entire previous compliance history, or previous compliance reports, as part of every application for environmental authorisation or in the BAR.
- 2.2.331 This does not mean that information concerning previous compliance is irrelevant to an application. Regulation 10(c) of the 2014 EIA Regulations requires an applicant to provide the competent authority with all information that reasonably has, or may have, the potential to influence a decision on the application. Furthermore, section 240(1)(b)(iii) of NEMA requires the competent authority to take into account all relevant factors, including the ability of the

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applicant to implement mitigation measures and to comply with any conditions subject to which the environmental authorisation may be granted.

2.2.332 In the present matter, the applicant states that the relevant compliance audit reports in respect of the previous survey were prepared by its independent Environmental Compliance Officer and submitted to PASA, and that the relevant daily reports are publicly available on the applicant's website. PASA does not dispute this and confirms that it received compliance monitoring information relating to the previous survey. Nevertheless, I am mindful that PASA is not the competent authority responsible for the decision under appeal. As indicated above, PASA performs a technical and advisory role and provides recommendations to the competent authority, which remains responsible for the final decision.

2.2.333 I therefore do not treat information in PASA's responding statement as conclusive proof of what information was before the competent authority at the time the decision was taken. However, there is insufficient information before me to make a definitive finding that those reports did not form part of the material that was expressly placed before the competent authority when the application was considered. In the absence of evidence to the contrary, I have no basis to conclude that relevant compliance information regarding the previous survey was withheld from the competent authority or was unavailable for consideration during the decision-making process.

2.2.334 In any event, I am not persuaded that the issue is material to the outcome of this appeal. Information concerning an applicant's previous compliance history may be a relevant consideration under section 24O(1)(b)(iii) of NEMA insofar as it may inform the assessment of the applicant's ability to implement mitigation measures and comply with conditions of authorisation. However, no evidence has been placed before me demonstrating that previous compliance audits identified material non-compliance or findings that could reasonably have affected the outcome of the application, or that previous non-compliance occurred on a scale that materially undermined the applicant's ability to implement mitigation measures or comply with the conditions of the present authorisation. Nor have the appellants identified any specific adverse compliance findings that ought to have been considered by the competent

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authority.

- 2.2.335 In these circumstances, I am not persuaded that any failure to place the previous compliance audit reports before the competent authority, if such failure occurred, materially affected the decision or caused prejudice to the appellants.
- 2.2.336 I also take note of the applicant's submission that its previous survey within the current project area, undertaken pursuant to its 2022 environmental authorisation, did not result in any material adverse effects on the receiving environment.
- 2.2.337 I note from page 118 of the BAR and PASA's response that the mitigation measures recommended in the BAR and EMPr are adopted from peer reviewed scientific literature, globally used seismic survey guidelines (i.e., such as the Joint Nature Conservation Committee (JNCC) 2010, 2017) and industry good practices, and modified where necessary to fit the South African offshore environment, for example the amendment to the seismic survey window based on the sensitivity of the specific offshore area. The BAR highlights that many of the international guidelines are extremely conservative, as they are designed for areas experiencing repeated, high intensity surveys and harbouring particularly sensitive species, or species with high conservation status. The guidelines currently applied to seismic surveying in South African waters are those proposed in the Generic EMPr and by Purdon (2018).
- 2.2.338 In addition, I note that the Marine Biodiversity Assessment and Fisheries Assessment were subjected to peer review with the objective of ensuring accuracy and completeness of the provided information and interpretations of it in identifying risks of the proposed activity. The external peer review of the Marine Biodiversity Assessment (Appendices C2.1 of the BAR) concluded that the assessment is comprehensive, detailed, logically constructed, and consistent in its approach to the impact analyses. It is based on current information and scientific understanding of the various effect levels on the defined receptors and, for acoustic effects, supported by sound transmission loss modelling. No gaps have been identified in the review and the assessment was considered fit for purpose. The external peer review of the

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Fisheries Assessment (Appendix C.3.1 of the BAR) concluded that the assessment is highly commendable, and undertaken clinically and with due diligence. The external peer review specialist concurs with all impact significance levels proposed in the Fisheries Assessment.

- 2.2.339 I have also considered whether the uncertainty identified by the appellants is itself a reason to refuse the application. In my view it is not. Section 2(4)(a)(vii) of NEMA does not require absolute scientific certainty before an environmental authorisation may be granted. Nor does it require that every uncertainty be resolved in favour of refusing development. Rather, it requires a risk-averse and cautious approach in circumstances where the limits of current knowledge are recognised. The relevant question is whether sufficient information exists to identify the likely impacts of the activity, assess their significance, and determine appropriate avoidance, management and mitigation measures. On the evidence before me, I am satisfied that this threshold has been met.
- 2.2.340 The specialist assessments, peer reviews and supporting specialist studies do not conclude that the identified impacts are incapable of mitigation or that the proposed activity presents an environmental fatal flaw. I attach significant weight to those conclusions.
- 2.2.341 The mere existence of scientific disagreement does not require refusal of an application. The question is whether the uncertainty is of such a nature and magnitude that the decision-maker cannot reasonably conclude that the identified impacts can be adequately avoided, managed or mitigated. In this matter, the specialist assessments did not conclude that the impacts were incapable of mitigation, nor did they identify an environmental fatal flaw. The areas of uncertainty identified by the specialists were expressly acknowledged, incorporated into the significance ratings and informed the recommended mitigation measures. I am therefore not persuaded that the uncertainties identified by the appellants required refusal of the application in order to comply with the precautionary principle.
- 2.2.342 I have specifically considered the appellants' reliance on Sustaining the Wild Coast. In my view, that judgment does not establish that the existence of uncertainty, competing scientific views, or potential harm automatically requires refusal of an application. Rather, the judgment emphasises the importance of a proper consideration of the precautionary principle when

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evaluating environmental risk. Having regard to the specialist studies, the peer reviews, the identified uncertainties, the mitigation measures and the conditions imposed, I am satisfied that the competent authority did not ignore uncertainty but expressly considered it and incorporated it into its assessment and decision-making process.

- 2.2.343 The appellants misconstrue a precautionary approach to mean a refusal of consent. The precautionary approach contained in section 2(4)(a)(vii) of NEMA provides that sustainable development requires the consideration of all relevant factors including that “the risk-averse” and “cautious approach” is applied which considers the limits of current knowledge about the consequences of decisions and actions. Section 2(4) (a) (viii) of NEMA further provides that the negative impacts on the environment and on people’s environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.
- 2.2.344 The application of the precautionary approach does not mean that an environmental authorisation must be refused merely because there are limits to current knowledge regarding the consequences of the proposed activity. Rather, the precautionary approach requires the decision-maker to take those limitations into account by adopting a risk-averse and cautious approach to the assessment of potential environmental impacts, and by considering whether those impacts can be avoided, managed or mitigated through appropriate conditions and measures. The existence of uncertainty must therefore be considered together with the available scientific information, the nature and extent of the potential impacts, and the measures proposed to address them.
- 2.2.345 I note that it is common cause that there are limits to current knowledge regarding the consequences of decisions and actions associated with the proposed project. However, the impacts and potential risks of the proposed activity to the environment, the probability of these impacts occurring, and the extent to which these potential impacts can be avoided, managed or mitigated, were assessed in the BAR and the specialist reports.
- 2.2.346 I am persuaded that the competent authority applied a “precautionary approach” in light of

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the limits to current knowledge regarding the consequences of the decision to grant the environmental authorisation and the subsequent actions flowing from that decision.

2.2.347 I have scrutinised the BAR and I find that there is no evidence that the seismic survey will extend to any prohibited area, or that it is incompatible with Critical Biodiversity Areas (CBAs), Ecologically or Biologically Significant Areas (EBSAs) and Marine Protected Areas (MPAs).

2.2.348 The BAR (section 8.6) and Marine Biodiversity Assessment report (page iii and section 3.4.2), find as follows:

2.2.348.1 Numerous sanctuaries and Marine Protected Areas exist offshore and along the coastline of the Western Cape. There are six offshore MPAs that fall within the broader project area, namely the Orange Shelf Edge MPA, Child's Bank MPA, Benguela Muds MPA, Cape Canyon MPA, Robben Island MPA and the Southeast Atlantic Seamounts MPA. The approved MPAs within the broad project area are shown in Figure 3-47 of the report. None of them overlap with the reconnaissance permit area. The proposed 3D survey area lies well offshore of these MPAs.

2.2.348.2 As part of a regional Marine Spatial Management and Governance Programme (MARISMA 2014-2020), the Benguela Current Commission (BCC) and its member states also identified a number of Ecologically or Biologically Significant Areas (EBSAs) spanning the border between Namibia and South Africa and along the South African West, South and East Coasts (see Figure 3-47), with the intention of implementing improved conservation and protection measures within these sites. They currently carry no legal status. Apart from a minor overlap with one of the EBSA Management Zones in the north-eastern corner, the proposed reconnaissance area avoids these areas.

2.2.348.3 The Reconnaissance Permit Area overlaps with areas mapped as Critical Biodiversity Area 1 (CBA 1): Natural and Critical Biodiversity Area 2: (CBA 2)

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Natural. Approximately 36.4% of the Reconnaissance Permit Area is covered by CBA 1 and CBA 2: Natural (as depicted in Figure 3-49). ESA comprises 0.11% of the Reconnaissance Permit Area. CBA 1 indicates irreplaceable or near-irreplaceable sites that are required to meet biodiversity targets with limited, if any, option to meet targets elsewhere, whereas ESAs include all portions of EBSAs that are not already within MPAs or CBAs, and a 5-km buffer area around all MPAs (where these areas are not already CBAs or ESAs), with the exception of the eastern edge of Robben Island MPA in Table Bay where a 1.5-km buffer area was applied (Harris *et al.* 2022).

- 2.2.348.4 Activities within these management zones are classified into those that are "compatible", those that are "not compatible", and those that have "restricted compatibility". Non-invasive (e.g. seismic surveys) and invasive (e.g. exploration wells) exploration activities are classified as having "restricted compatibility". Activities with restricted compatibility require a detailed assessment to determine whether the recommendation is that they should be permitted (general), permitted subject to additional regulations (consent), or prohibited, depending on a variety of factors, as per the National Coastal and Marine Spatial Biodiversity Plan, 2022 (NCMSBP). Petroleum production is, however, classified as "not compatible" in CBAs, but may be compatible, subject to certain conditions, in ESAs (Harris *et al.* 2022).
- 2.2.348.5 There are numerous coastal Important Bird Areas (IBAs) in the general project area, however these are all located well inshore of the Reconnaissance Permit Area and should in no way be directly affected by the proposed seismic surveys. Various marine IBAs have also been proposed in South African and Namibian territorial waters, with a candidate trans-boundary marine IBA suggested off the Orange River mouth and a further candidate marine IBA suggested in international waters west of the Cape Peninsula. There is no overlap of the Reconnaissance Permit Area with any of these Marine IBAs.

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- 2.2.348.6 South Africa currently has 27 sites designated as Ramsar Sites (wetlands designated to be of international importance under the Ramsar Convention, also known as "The Convention on Wetlands", an intergovernmental environmental treaty established by UNESCO in 1971). These should in no way be influenced by seismic acquisition in the Reconnaissance Permit Area.
- 2.2.348.7 Important Marine Mammal Areas (IMMAs) were introduced in 2016 by the IUCN Marine Mammal Protected Areas Task Force to support marine mammal and marine biodiversity conservation. Although much of the West Coast of South Africa has not yet been assessed with respect to its relevance as an IMMA, the coastline from the Olifants River mouth on the West Coast to the Mozambiquan border overlaps with three declared IMMAs, namely the: 1) Southern Coastal and Shelf Waters of South Africa IMMA; 2) Cape Coastal Waters IMMA; and 3) South East African Coastal Migration Corridor IMMA. There is no overlap of the Reconnaissance Permit Area with these IMMAs as it falls within the area along the West Coast of South Africa that has not yet been assessed.
- 2.2.349 I am accordingly satisfied that the BAR considered how the proposed seismic survey may impact on MPAs, EBSAs, and CBAs. No prohibited ("no-go") areas have been identified within the proposed survey area in the BAR or in any of the specialist studies undertaken. While the survey area includes both CBA1: natural (irreplaceable) and CBA2: natural (natural areas selected to meet biodiversity targets), it is evident that these CBA areas are not considered as no-go areas for the purposes of seismic survey activities. It is common cause that the NCMSBP states that non-invasive exploration activities, such as seismic surveys, are classified as having "restricted compatibility" with CBAs, requiring a detailed assessment to determine whether they should be permitted (general), permitted subject to additional regulations (consent), or prohibited. This cannot be interpreted to mean that CBAs are no-go areas. The implications and potential impacts of the proposed seismic survey on these areas is specifically discussed in Section 3.4.2. of the specialist report. In addition, I have already found that the potential impacts of the proposed seismic surveys on marine fauna were assessed and determined to be of low significance following the implementation of the

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prescribed mitigation measures.

- 2.2.350 I also take note of the applicant's submission in its responding statement that the NCMSBP provides that petroleum production may be possible in CBAs, using lateral drilling or other techniques that do not result in biodiversity impacts. If significant petroleum resources are identified in these areas (the objective of the proposed seismic survey) the selection of the site as a CBA could be re-evaluated, although this would require alternative CBAs to be identified to meet biodiversity targets. It is reiterated that any production activities would require a separate application for environmental authorisation and environmental impact assessment. I note further that seismic surveying is not only used for petroleum and natural gas exploration and development, but also for the development of offshore wind, geothermal energy, and low-carbon solutions, such as carbon capture and storage and also more generally for providing more insight and understanding into the regional geology of the area for scientific purposes.
- 2.2.351 I note that the Benguela Current Commission and the Namibian Government (including the Ministry of Environment and Tourism: Directorate Scientific Services, Research and Permit Control; and the Ministry of Fisheries and Marine Resources) were both pre-identified as potential interested and affected parties (I&APs) from the inception of the project. Proof of notifications is provided in Appendix B of the final BAR. The applicant has confirmed that no comment was received from the Namibian Government or the Benguela Current Commission during any stage of the project. Other Namibian stakeholders consulted include: the National Marine Information and Research Centre; the Commission Confederation of Namibian Fishing Associations; the Namibian Hake Association; the Namibian Crab Association; the Namibian Rock Lobster Fishing Association; the Namibian Hake and Tuna Longline Association; the Namibian Large Pelagic Association; the Namibian Small Pelagic Association; and the Namibian Line Fish Association.
- 2.2.352 The final BAR included an assessment of all potential environmental impacts and the extent of each impact was assessed by all specialists (as per the impact assessment methodology in section 9.1 of the BAR). In addition, the Marine Biodiversity Assessment considered the

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Ecologically or Biologically Significant Areas (EBSAs) spanning the border between Namibia and South Africa. These EBSAs were identified by the Benguela Current Commission (BCC) and its member states with the aim of enhancing conservation and protection measures within these areas. None of the identified potential marine environmental impacts are expected to extend a significant distance from the proposed survey area.

2.2.353 I do not regard the absence of comments from the Namibian Government or the Benguela Current Commission as determinative of whether transboundary impacts were adequately assessed. The relevant question is whether the environmental assessment considered the potential for impacts beyond South African territorial waters. I am satisfied that it did. The specialist assessments identified the relevant transboundary EBSAs, considered the regional marine environment, and assessed the likely spatial extent of the identified impacts. On the information before me, I am not persuaded that the proposed activity is likely to result in significant transboundary impacts that were not assessed as part of the environmental assessment process.

2.2.354 I am accordingly satisfied that EAP assessed the transboundary impacts of the proposed seismic survey.

2.2.355 This ground of appeal is accordingly dismissed.

2.3 THIRD GROUND OF APPEAL: SOCIO-ECONOMIC IMPACTS AND FISHERIES

Appellants' Submissions

The third, fourth, sixth, seventh and eighth appellants raise this issue as a ground of appeal:

2.3.1 The third and fourth appellants submit that seismic activities are known to have multiple adverse effects on marine life. This, in turn, directly affects the lives and livelihoods of small-scale fishing communities who depend on these resources. The disruption of marine ecosystems can lead to long-term economic and social challenges for these communities.

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- 2.3.2 Coastal economies in the region are deeply intertwined with healthy marine and terrestrial environments. Any negative impacts on these ecosystems from the seismic surveys could lead to significant economic and social repercussions for local communities.
- 2.3.3 The project potentially infringes upon the rights to a healthy environment and the right to work as enshrined in the Constitution of South Africa. These rights are fundamental and must be upheld, particularly in the face of activities that could cause irreversible environmental and socio-economic damage.
- 2.3.4 The sixth appellant submits that if these activities continue, marine fauna may move away from their habitats, resulting in reduced or no catches for fishermen and, consequently, a loss of income. It should be noted that this is their sole source of income. No fishing vessels may come within 165 km of the survey vessel due to the exclusion zone. People's livelihoods are already being compromised due to the fishing quota system, overfishing, lack of employment opportunities, pollution, the effects of climate change and the Covid 19 pandemic.
- 2.3.5 The seventh appellant submits that their small-scale fishermen will have a reduced fishing right. Their fishing quotas have already been reduced and their people will not have employment opportunities or be able to generate income. The seismic activities will cause their fish to disappear and they will no longer have species like snoek.
- 2.3.6 The eighth appellant submits that there may be consequences for small-scale and commercial fisheries in the area, with reduced access to fishing areas and changes in fish yields. No fishing vessels may come within 165 km² of the survey vessel due to an exclusion area. People's livelihoods are already being jeopardised due to the fishing quota system, too much fishing, lack of job opportunities, pollution, the effects of climate change and the Covid 19 pandemic. In addition, the project is unlikely to lead to increased job opportunities for the local communities near the project site. Jobs will only be for highly skilled people, and there will be few job opportunities.
- 2.3.7 They cannot accept the applicant's averments that the oil and exploration technology used in

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South Africa is generally regarded as non-intrusive in nature. Of course it is intrusive. It chases the fish away. They have seen that when they had one of the worst fishing seasons in the previous year.

- 2.3.8 The eighth appellant avers that its members and the rest of the Fisherfolk in Port Nolloth and Namaqua region are very much against these seismic activities in their fishing waters. They are not against development, but they cannot allow their fishing traditions and livelihoods to be wiped out. Generations of fishers are behind them and they cannot allow anyone to take that privilege away from them. They know that the government is for oil and gas, but as a community and a small-scale fisher organisation, they are against it. They have seen this happen in other countries, and it has messed the whole sea life up. That is why foreign boats are in our waters. They say no to oil and gas but the government says yes. In a few years' time, South Africa will be like all the other countries with nothing in our waters and nothing for the generations behind us. They strongly say no to seismic surveys and oil and gas development.

APPLICANT'S RESPONSE

In response to this ground of appeal, the applicant submits as follows:

- 2.3.9 The third and fourth appellants has not described any specific aspects relevant to the proposed activities which the applicant can interrogate and analyse in order to respond meaningfully, and accordingly the applicant is left to imply meaning into this ground of appeal in order to respond to the appellant. The eighth appellant's ground of appeal is unsubstantiated. The appellants have not challenged any of the findings in the BAR or the mitigation measures contained in the EMP. However, the applicant has endeavoured to reply.
- 2.3.10 All relevant potential impacts of the proposed activities on marine ecology and the livelihoods of small-scale fishing communities have been thoroughly assessed in the BAR. Impacts on marine ecology, fisheries and social impacts are discussed in Sections 9.3.1, 9.3.2 and 9.3.4 of the BAR respectively.

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- 2.3.11 Section 9.3.1.1 of the BAR identifies, describes and assesses the potential impact on marine ecology. The findings of the Marine Biodiversity Assessment Report (Appendix C2 of the BAR) do not state that acoustic surveys do not result in impacts on marine species or ecosystems, conversely the report clearly lists and describes the potential impacts on marine ecology. Based on this assessment undertaken by the biodiversity specialist, the impacts on the marine fauna were found to be of Low/Negligible Significance. Additionally, stringent mitigation measures were included to further ensure the protection of the receiving environment. Potential impacts are concluded as being of low significance after mitigation.
- 2.3.12 The potential impact on fisheries, including small scale fishers, and catch rates due to sound elevation levels is assessed in the Specialist Fisheries Report (Appendix C3 of the BAR) and section 9.3.2 of the BAR. Sensitivity/vulnerability differences amongst the targeted fish species were identified for each sector in the assessment conducted pursuant to preparation of the Specialist Fisheries Report. With the implementation of the project controls and mitigation measures, the impacts of the proposed survey is considered to be of low significance for large pelagic longline sector. There is no impact expected on other fisheries sectors– the demersal trawl, midwater trawl, demersal longline, small pelagic purse-seine, tuna pole-line, line fish, west coast rock lobster, netfish and small-scale fishing sectors.
- 2.3.13 Sound levels for the seismic survey can notionally be expected to attenuate to below levels for behavioural disturbance at a distance of 4 km from the source. The current assessment is that behavioural disturbance to fish could be expected within this range and that catch rates could therefore also be affected. The spatial extent of the impact of seismic source noise emissions on catch rates is expected to be regional, although localised at any one time. The impact is considered to be fully reversible and any disturbance of behaviour that may occur as a result of survey noise would be temporary.
- 2.3.14 Due to the remote location of the survey area, noise would be expected to attenuate to below threshold levels before reaching fishing grounds of all other sectors viz. the demersal trawl, midwater trawl, demersal longline, tuna pole-line, small pelagic purse-seine, traditional

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linefish, west coast rock lobster and small-scale fisheries sectors. The survey area does not coincide with spawning areas of key commercial species and noise generated by the seismic source would be expected to attenuate to below threshold levels for behavioural disturbance before reaching inshore recruitment and/or nursery areas. The survey area is situated well offshore of distributional area of snoek during its spawning and migration periods (an important species for the linefish and small-scale fisheries sectors).

- 2.3.15 As stated in Section 9.3.2.1 of the BAR, the safety zones around the survey vessel aim to ensure the safety of navigation, avoiding or reducing the probability of damage to the towed streamer cables. The temporary exclusion of vessels from entering the safety zone around a seismic survey vessel poses a direct impact to fishing operations in the form of loss of exclusion from fishing grounds. A safety zone would be enforced around the seismic vessel for the duration of the project, resulting in the temporary exclusion of fishing operations in the vicinity of this zone around the vessel and towed array. The dimensions of the exclusion would be approximately 6 Nm (11km) ahead and astern and 2 Nm (3.7km) to either side of the survey vessel, resulting in a safety zone of approximately 165 km² around the survey vessel.
- 2.3.16 Based on the location of the proposed seismic survey area, there is no impact of exclusion from fishing grounds expected on the demersal trawl, midwater trawl, demersal longline, small pelagic purse-seine, tuna pole-line, line fish, west coast rock lobster or small-scale fisheries sectors. Only one sector, namely the large pelagic longline sector, operates within the proposed seismic survey area.
- 2.3.17 It should also be noted that the EAP specifically consulted with the small-scale fishers and other community members and have given serious consideration to the comments and inputs from the local communities. Small scale fishing communities have been thoroughly consulted as part of the Public Participation process for the project as highlighted in section 7 of the BAR and detailed in Appendix B to the BAR.
- 2.3.18 The potential impact of the proposed activities on livelihoods was identified and assessed, and the result of such assessment is described in detail in the Social Impact Assessment Report

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(Appendix C4 to the BAR) and summarised in Section 9.3.4.3 of the BAR. The scientific studies conducted for this project identified impacts on the fishing stock as low for all types except for large pelagic longline species. A medium negative residual impact is projected for these species. By inference, a potential impact on fishing yield could be expected and thus potential economic impact on communities due to reduced caught fish volumes. The recommended mitigation measures, as listed in the specialist reports, focus on the reduction of impacts on fish species and the projected reduction of the impact on the commercial and small-scale fishery catch yield. The application area is considered as the optimal area for such a survey due to its location far offshore and well outside of the fisheries ring-fence area.

2.3.19 The Social Impact Assessment Report concludes that in general, communities are not against development, but they want to see it happen in a sustainable way that does not jeopardise their source of livelihood. From a social perspective, it is clear that the communities and local people are divided about the oil and gas industry. If the project is considered in isolation, the impacts are negligible. However, the project does not happen in a vacuum, and the social environment is much wider than the footprint of the project. If the social risks and potential damage to cultural and indigenous rights are considered, the impact on the social fabric of already vulnerable communities may be significant. Potential future benefits and the economic development of the country should the surveys find any significant resources are not disputed. The recommendation is therefore that the project can only proceed once the social mitigation measures have been implemented and the community are sufficiently informed and educated to enable meaningful engagement. The impact significance was rated as being of medium significance both before and after mitigation measures. Various mitigation measures are also provided including:

2.3.19.1 The applicant should continue to implement the community engagement protocol that the applicant developed in 2023/2024. This protocol aims to address the impact on vulnerable groups and uncertainty, and also have an educational component.

2.3.19.2 Creation of a grievance mechanism available for the duration of the seismic

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surveys.

- 2.3.19.3 Contribution by the applicant to assisting with collaboration on independent research on how fish species on the West Coast, such as snoek, respond to seismic surveying. The applicant will further contact relevant scientific research institutions to offer the potential of collaborating in independent on-water research during the survey.
- 2.3.19.4 Consultation with communities on potential ways in which to make a positive contribution to the communities.
- 2.3.20 The applicant denies any assertion by the third and fourth appellants that the grant of the environmental authorisation is unconstitutional and contrary to section 24 of the Constitution. The applicable legislation and policy for the project, including the Constitution of The Republic of South Africa, is detailed in Section 4 of the BAR and has been assessed in relation to the Basic Assessment process conducted. Section 24 of the Constitution enshrines environmental rights in South Africa. Section 24(b)(iii) in particular, provides that "everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development." It is submitted that the provisions of NEMA are the reasonable legislative means through which the environmental right under section 24 of the Constitution is to be realised.
- 2.3.21 The cornerstone of section 24 of the Constitution and the NEMA principles is the concept of sustainable development. Sustainable development requires that social, economic and environmental impacts are taken into account in the planning, implementation and decision making so as to ensure that the development serves present and future generations and that any adverse environmental or social impacts are potentially avoided, or where they cannot altogether be avoided, are minimised and remedied.
- 2.3.22 For reasons fully detailed in the responses to this appeal, and in the findings of the BAR and specialist studies annexed thereto, the proposed activities meets the criteria of sustainable

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development in that the proposed activities do not result in unacceptable environmental pollution or degradation, or adverse socio-economic and health impacts, that cannot be avoided or minimised, and the social, economic and environment impacts of the proposed activities are thoroughly assessed in the BAR. Importantly section 24 of the Constitution does not aim to protect a pristine environment. It recognises that there are multiple users of the environment, and these users must conduct their operations in a sustainable and responsible way. The EMPr ensures that not only the granting of the environmental authorisation, but also the ongoing operations, comply with the objectives of section 24 of the Constitution. The mitigation measures in the EMPr are not challenged as being inadequate or unable to mitigate the possible impacts.

2.3.23 With regard to the assertion by the third and fourth appellants that the activity "could cause irreversible environmental and socio-economic damage", and with reference to Section 7 and Appendix B of the BAR, the EAP has undertaken the public participation and consultation processes in accordance with the requirements of the 2014 EIA Regulations. This process included notification and communication in three different languages, via Radio and Newspaper advertisements, site notices, posters, and direct notification; as well as public and focus group meetings within the potentially affected communities. Opportunity was provided to review and comment on the BAR and associated documentation to be submitted to the decision maker. Specific focus was given to consultation with the small-scale fishers and other community members and the EAP has given serious consideration to the comments and inputs from the local communities including small-scale fishers.

2.3.24 The granting of the environmental authorisation, in compliance with the applicable legislative framework, does not offend or constitute a contravention of the environmental rights contained in the Constitution. The applicant also submits that all relevant information, as contained in the BAR, and as required to be placed before the competent authority, in terms of NEMA and the 2014 EIA Regulations, was placed before the competent authority. Therefore, in deciding to grant the environmental authorisation, the competent authority gave effect to the constitutional principles and the prevailing legal prescripts as well as the policy objectives of the Republic of South Africa (as explained above) all of which enable, and specifically support, South Africa's

exploration for oil and gas resources.

- 2.3.25 The proposed activities are short-term, and if viewed in isolation considering only technical risks as discussed in various specialist reports conducted as part of the environmental authorisation process, the impacts will be low to negligible through the implementation of the recommended mitigation measures. The Need and Desirability of the proposed activities are fully and thoroughly presented in section 5 of the BAR.
- 2.3.26 On the eighth appellant's reference to governmental policy on oil and gas, the applicant notes that, according to the Integrated Resource Plan 2019 (IRP 2019)⁵⁵, which is the country's electricity planning strategy, there is a need for gas in South Africa's energy mix in the future. This need is driven in part by the expectation that natural gas may act as a transition fuel, whilst other greener technologies mature. According to DFFE, targets have been determined to achieve our national GHG Emissions commitments. These targets consider the likely GHG emissions outcome of the implementation of current South African policies including the IRP. The proposed exploration activities may be used to determine whether a viable gas or oil resource is present. The outcomes of this could provide insight into potential alternative supply options to inform the future energy planning and policy for South Africa. Considering this, and other new information on supply options, as well as the rapid technological advancements in the energy sector (and specifically in the low carbon alternatives), it is crucial that the energy planning for South Africa is continually reassessed and revised to ensure that the most suitable and sustainable strategy is defined. It is agreed that pending the outcome of an appraisal on the viability of extracting any oil or gas resource, which this exploration activity is likely to inform, due caution will need to be taken to ensure that South Africa complies with its international commitments and ensure a safe environment in line with our constitution and the prevailing environmental legislation that gives effect to thereto. Assessing national energy policy and plans falls outside of the scope of this project specific assessment.
- 2.3.27 The reference to "non-intrusive" in the environmental authorisation may refer to the fact the seismic surveys are not physically invasive or intrusive, and no drilling or other invasive

⁵⁵ <https://www.gov.za/sites/default/files/IRP2019>.

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activities are proposed. Section 3 of the BAR explains what a seismic survey entails: "During seismic surveys high-level, low frequency sound pulses are generated by an acoustic instrument towed behind a survey vessel, just below the sea surface. The sounds are directed towards the seabed and the seismic signal is reflected by the geological interfaces below the seafloor. The reflected signals are received by an array of receivers or sets of hydrophones towed behind the vessel." The eighth appellant's claim regarding the previous year's worst fishing season is as vague and unsubstantiated, because all relevant potential impacts of the proposed activities on fish and fisheries have been thoroughly assessed in the BAR and the appellant has not challenged any of the findings or mitigation measures described in the BAR.

PASA'S RESPONSE

In their comments to this ground of appeal, the PASA submits that:

- 2.3.28 Impacts on marine species were assessed in the Biodiversity and Ecological Impact Assessment.
- 2.3.29 In respect of the impacts on lives and livelihoods of the small scale fisheries, the following has been quoted directly from the BAR:

"With the implementation of the project controls and mitigation measures, the residual impact due to seismic noise is considered to be of LOW NEGATIVE significance for the large pelagic longline sector. Due to the remote location of the Reconnaissance Permit area, noise would be expected to attenuate to below threshold levels before reaching fishing grounds of all other sectors viz. the demersal trawl, midwater trawl, demersal longline, tuna pole-line, small pelagic purse-seine, traditional linefish, west coast rock lobster and small-scale fisheries sectors. The Reconnaissance Permit area does not coincide with spawning areas of key commercial species and noise generated by the seismic source would be expected to attenuate to below threshold levels for behavioural disturbance before reaching inshore recruitment and/or nursery areas. The Reconnaissance Permit area is situated well offshore of distributional area of snoek during

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its spawning and migration periods (an important species for the linefish and small-scale fisheries sectors)".

- 2.3.30 The potential impacts on livelihoods were assessed and found to be of medium significance with or without mitigation. Mitigation measures proposed in the BAR were considered adequate, considering the assessment concerning the location of the application area versus the potential areas with fisheries (inclusive of small-scale fisheries).
- 2.3.31 The impacts on marine life is low and therefore no significant negative impact is expected on coastal economy from the authorised activity.
- 2.3.32 It is not clear how the project potentially infringes Section 24 of the Constitution. The assessment of an application for environmental authorisation involves a meticulous consideration of a number of factors, including amongst others, those prescribed by section 24O of NEMA and the principles in section 2 of the NEMA. The very factors prescribed by section 24O and the NEMA principles are the building blocks necessary and at the heart of ensuring the realisation of the ideal sought to be achieved by section 24 of the Constitution. In fact, it is the competent authority's view that NEMA is a piece of legislation that contains the necessary protective mechanism for the realisation of the environmental right as conferred to everyone by the Bill of Rights. It therefore goes without a saying that any prima facie proof of non-compliance with the NEMA protective mechanism is a direct violation of the environmental right in the constitution. Accordingly, it is PASA's view that in considering the factors listed in section 24O of the NEMA and the NEMA principles against the proposed activities, section 24 of the Constitution was taken into account. The assessment in the Environmental Impact Assessment report (EIAR) revealed that the proposed exploration activities will not in any way violate the environmental right embedded in section 24 of the Constitution. The majority of the potential impacts associated with the proposed exploration activities were assessed to be of low to very low significance after mitigation. In addition, mitigation measures proposed were considered adequate to ensure that environmental harm is minimised and/or prevented. Accordingly, it is PASA's considered view that the granted seismic surveys will not violate section 24 of the Constitution.

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- 2.3.33 The eighth appellant's objection to the authorised activity is noted. The potential impacts on fisheries as a result of the exclusion of fishing vessels from accessing fishing ground, the impact on catch rates as a result of increased noise levels associated with the seismic survey operation, accidental loss of equipment from the survey array and accidental release of marine diesel at sea were assessed in the BAR. The aforementioned potential impacts were assessed to be low post mitigation. The potential impact on livelihoods were assessed and found to be of medium significance with or without mitigation. Mitigation measures proposed in the BAR were considered adequate, considering the location of the application area and the outcomes of the assessment on fisheries.
- 2.3.34 The seismic survey is known to be the least intrusive exploration technique. This is based on their transient nature and the fact that they do not involve physical sea floor disturbance. There is no evidence submitted or published that support the eighth appellant's statement that the seismic surveys had a negative impact on fishing in the past year.

EVALUATION (Reasons for Decision)

- 2.3.35 The issue for determination under this ground of appeal is whether the proposed seismic survey will negatively impact the fishing industry, including small-scale fishers, thereby giving rise to economic and social challenges for the affected communities and undermining their ability to sustain their livelihoods and fishing traditions. The appellants contend that the proposed activity potentially infringes their constitutional right to an environment that is not harmful to their health or well-being, as well as their right to work.
- 2.3.36 In evaluating this appeal ground, I have been particularly mindful of the position of small-scale fishers and fishing communities. As the Minister responsible for the administration of marine living resources in terms of the Marine Living Resources Act, 1998 (Act 17 of 1998) (MLRA), I am acutely aware of the socio-economic challenges faced by many coastal communities and of the dependence of those communities on healthy marine ecosystems for their livelihoods, food security and cultural heritage. I am also mindful of my constitutional and legislative

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obligation to ensure the sustainability of our country's marine resources. I have therefore approached the concerns raised under this ground of appeal with particular care.

- 2.3.37 I accept that many fishing communities along the West Coast already face socio-economic pressures. While those concerns are legitimate and form part of the broader context within which this application must be considered, the issue before me is whether the proposed seismic survey will materially impair the livelihoods of fishers, including small-scale fishers, or the sustainability of the fisheries upon which they depend, including whether it will materially reduce access to fishing grounds, diminish fish stocks relied upon by small-scale fishers, or compromise the long-term sustainability of those livelihoods.
- 2.3.38 I note that the appellant undertook a Specialist Fisheries Assessment to assess the impacts of the proposed activity on the fishing industry (Appendix C3 to the BAR). The findings of the assessment were also summarised in section 9.3.2 of the BAR. The potential impacts of the seismic survey programme on fisheries were identified by the specialist and could include: 1) exclusion of fishing vessels from accessing the fishing ground; 2) the impact on catch rates as a result of increased noise levels associated with the seismic survey operation; 3) accidental loss of equipment from the survey array; and 4) accidental release of marine diesel at sea.⁵⁶
- 2.3.39 The report clarifies that under the Convention on the International Regulations for Preventing Collisions at Sea (COLREGS, 1972, Part A, Rule 10), a seismic survey vessel that is engaged in surveying is defined as a "vessel restricted in its ability to manoeuvre" which requires that power-driven and sailing vessels give way to a vessel restricted in her ability to manoeuvre. Furthermore, under the Marine Traffic Act, 1981 (No. 2 of 1981), a vessel used for the purpose of exploiting the seabed falls under the definition of an "offshore installation" and as such it is protected by a 500 m safety zone. It is an offence for an unauthorised vessel to enter the safety zone. In addition to a statutory 500 m safety zone, a seismic contractor would request a safe operational limit (that is greater than the 500 m safety zone) that it would like other vessels to stay beyond. Safety clearances for seismic surveys are usually 6 Nm ahead and astern and 2 Nm to either side of the survey vessel, resulting in an exclusion area of

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Summarised on pages 93 to 96 of the Specialist Fisheries Assessment.

approximately 165 km² around the survey vessel. The temporary exclusion of fisheries from the safety zone may reduce access to fishing grounds, which in turn could potentially result in a loss of catch and/or displacement of fishing effort (direct negative impact). The safety zone would be implemented around the seismic vessel for the duration of the project, resulting in an immediate impact that would endure for the duration of the proposed survey (~130 days). The impact of exclusion from fishing ground was assessed on each fishing sector, based on the type of gear used and the proximity of fishing areas relative to the Reconnaissance Permit area.

2.3.40 The Reconnaissance Permit area is situated in the Orange Basin, offshore of the shelf break and offshore of grounds of importance for many of South Africa's commercial fishing sectors, as well as small-scale and recreational fisheries. Only one sector, namely the large pelagic longline sector, operates within the proposed seismic survey area. In the case of the large pelagic longline and tuna pole-line sectors, the targeted fish stock may only be available in a specific area for a specific period of time. Loss of access to fishing ground could be experienced by the large pelagic longline sector (targeting tuna, swordfish and shark) for the duration of the proposed 130 day survey. Although the Reconnaissance Permit area does not coincide with areas of peak fishing activity, there is a medium probability that vessels and drifting lines could be expected within the Reconnaissance Permit area. The overall significance of the impact is considered to be low negative.⁵⁷

2.3.41 The impact on catch rates due to sound elevation levels was assessed and sensitivity/vulnerability differences amongst the targeted fish species identified for each sector. Sound exposure levels for the proposed seismic survey are expected to be 232.4 dB re 1 µPa at 1 m with a peak sound pressure level of 256.4 dB re 1 µPa at 1 m. The frequency range of 5 – 300 Hz falls within the hearing range of most fish species. A sound transmission loss modelling study (SLR 2024) identified predicted zones of impact for fish species (amongst other marine fauna species of concern) based on relevant noise impact assessment criteria. The noise effects assessed included physiological effects (physical injury/permanent threshold shift (PTS) and temporary threshold shift (TTS)) and behavioural disturbance due to either

⁵⁷ Pages 69, 70 and 94 of the Specialist Fisheries Assessment.

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immediate impact from single airgun pulses or cumulative effects of exposure to multiple airgun pulses over a period of 24 hours. Based on the current project description, sound levels for the seismic survey could notionally be expected to attenuate to below levels for behavioural disturbance at a distance of 4 km from the source. The spatial extent of the impact of sound (produced by the airgun array) on catch rates is expected to be regional, although localised at any one time. The impact is considered to be of immediate duration and reversible without additional time or cost. Based on the distance of fishing grounds from the Reconnaissance Permit area, only the large pelagic longline sector is considered to be susceptible to the effects of elevated sound.

- 2.3.42 Due to the location of the Reconnaissance Permit area in the deepwater environment, sound generated during the survey is not expected to influence the spawning behaviour or migration route of snoek (a species of key importance to the linefish and small-scale fisheries sectors). Snoek is an important linefish species as it makes up the largest annual catch in terms of biomass, contributing more than 80% to the total catch west of Cape Infanta. Snoek spawning occurs offshore during winter-spring (June to October), along the shelf break (150-400 m) of the western Agulhas Bank and the South African west coast. Prevailing currents transport eggs and larvae to a primary nursery ground north of Cape Columbine and to a secondary nursery area to the east of Danger Point; both shallower than 150 m. Juveniles remain on the nursery grounds until maturity. Onshore-offshore distribution (between 5- and 150-m isobaths) of juveniles is determined largely by prey availability and includes a seasonal inshore migration in autumn in response to clupeoid recruitment. Adults are found throughout the distribution range of the species, and although they move offshore to spawn (there is some southward dispersion as the spawning season progresses), longshore movement is apparently random and without a seasonal basis. Snoek are caught within the inshore zone (within the 100 m depth contour) along most of the South African coastline with the majority of catches being made along the West and South-West Coast of South Africa. Although snoek can be caught year-round, they are caught more frequently during the snoek seasonal migration (between April and July) when they shoal nearshore, using handlines by the linefishery. Snoek are not distributed offshore of the 1000 m depth contour and therefore not targeted or caught by the commercial linefishery in the Reconnaissance Permit area. The

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Reconnaissance Permit area is situated well offshore of distributional area of snoek during its spawning and migration periods.⁵⁸

- 2.3.43 On pages 93 to 94 of the Fisheries Assessment, the specialist concludes that, with the implementation of the project controls and mitigation measures, the residual impact due to the proposed survey and seismic noise is considered to be of low negative significance for large pelagic longline sector. There is no impact expected on the demersal trawl, midwater trawl, demersal longline, small pelagic purse-seine, tuna pole-line, linefish, west coast rock lobster, netfish and small-scale fishing sectors. Whereas the large pelagic longline sector operates within the area, activity levels are low, and fishing effort is expected to be centred inshore of the Reconnaissance Permit area, along the continental shelf break. Similarly, the area does not overlap key spawning or nursery areas therefore the risk of noise disturbance to spawning behaviour and fishery recruitment is considered unlikely.
- 2.3.44 Regarding the appellants' contention that the proposed seismic survey will cause fish to leave the area, reduce catches, undermine fishing livelihoods and ultimately threaten the sustainability of fishing communities, no specialist evidence before me concludes that the proposed survey is likely to result in the disappearance of fish stocks, a material reduction in fish availability, or a significant decline in catches for small-scale fishers. By contrast, the Specialist Fisheries Assessment specifically considered fish distribution, spawning areas, migratory patterns, fish behaviour and sound attenuation, and concluded that impacts on small-scale fisheries are not expected to be significant. Transparency and fairness require that I determine this issue on the basis of the evidence before me rather than assertion. Having done so, I am satisfied that the specialist assessments, supported by scientific analysis and peer review, provide a reliable basis upon which to assess the significance of the identified impacts.
- 2.3.45 Cumulative impacts are also considered on pages 88 to 89 the Fisheries Assessment report. Although it is unlikely that concurrent seismic surveys would be undertaken in the same area during the same survey window, the report includes an assessment of the cumulative impact

⁵⁸ Pages iii, 20, 47, 50 and 80 of the Specialist Fisheries Assessment.

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on fisheries during simultaneous operations of three regional seismic surveys off the west coast. Simultaneous survey operations would result in an increase in the extent and magnitude of the impact on the large pelagic longline sector. Three seismic surveys of regional extent, undertaken simultaneously, could be expected to result in an impact of medium negative significance on the large pelagic longline sector, both with and without the application of mitigation measures. Once completed there is not expected to be any residual impact.

- 2.3.46 I also note the applicant's response that special focus was given to consultation with the small-scale fishers and other community members as part of the public participation process for the project, as highlighted in section 7 of the BAR and detailed in Appendix B to the BAR, and that the EAP has given serious consideration to the comments and inputs received from these local communities. Moreover, I note from the public participation record (Appendix B to the BAR) that the EAP consulted key stakeholders within the Department of Forestry, Fisheries and the Environment including, but not limited to, the 1) Small Scale Fisheries; 2) Fisheries Operations Support; 3) Coastal Conservation Strategies; 4) Marine Aquaculture; 5) Oceans and Coasts: Coastal Development and Protection; 5) Oceans Economy; Biodiversity Management and Permitting; 6) Biodiversity and Coastal Research; and 7) Biodiversity and Conservation units within the Department.
- 2.3.47 Section 6.1 and 9.3.1.1.7 of the BAR confirm that the application area is considered as the optimal area for the survey due to its location far offshore and well outside of the fisheries ring-fence area. The applicant has agreed to avoid the key "ring fenced" fishing and spawning areas to the south-east of the survey area identified during previous and current consultation with the commercial fishing sector. Moreover, the impact on fisheries were assessed in the BAR and a cautionary approach was adopted. On the evidence before me, the 3D seismic survey will have low to no significant impacts on the fishing industry, including on snoek.
- 2.3.48 Recommended mitigation measures are included on pages 95 to 96 of the Fisheries Assessment Report, including the following:

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- 2.3.48.1 Prior to the commencement of seismic survey activities, the following key stakeholders should be consulted and informed of the proposed seismic survey programme (including navigational co-ordinates of location, timing and duration of proposed activities) and the likely implications thereof (specifically the exclusion and safety zone around the seismic vessel): Fishing industry associations: SA Tuna Association; SA Tuna Longline Association and Fresh Tuna Exporters Association. Other key stakeholders to be notified include the: South African Navy Hydrographic Office (SANHO), South African Maritime Safety Association (SAMSA), Ports Authority and the DFFE Vessel Monitoring, Control and Surveillance Unit in Cape Town. These stakeholders should again be notified at the completion of the project when the survey and support vessels are off location.
- 2.3.48.2 Request, in writing, the SAN Hydrographer to broadcast a navigational warning via Navigational Telex (Navtext) and Cape Town radio for the duration of the seismic survey activity. Distribute a Notice to Mariners prior to the commencement of the seismic survey operations. The Notice to Mariners should give notice of (1) the co-ordinates of the survey area, (2) an indication of the proposed survey timeframes, (3) the dimensions of the towed gear array and dimensions of the safety zone around the seismic vessel, and (4) provide details on the movements of support vessels servicing the project. This Notice to Mariners should be distributed timeously to fishing companies and directly onto vessels where possible.
- 2.3.48.3 An experienced Fisheries Liaison Officer (FLO) should be placed on board the seismic or guard vessel for the duration of the survey to facilitate communications with fishing vessels in the vicinity of the seismic survey areas.
- 2.3.48.4 The lighting on the seismic and support vessels should be managed to ensure that they are sufficiently illuminated to be visible to fishing vessels, as well as ensure that it is reduced to a minimum compatible with safe operations.

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- 2.3.48.5 Notify any fishing vessels at a radar range of 12 nm from the seismic vessel via radio regarding the safety requirements around the seismic vessel.
- 2.3.48.6 Implement a grievance mechanism in case of disruption to fishing or navigation.
- 2.3.48.7 Implement a “soft-start” procedure of a minimum of 20 minutes duration on initiation of the seismic source, if during daylight hours it is confirmed visually by the MMO during the pre-shoot watch (60 minutes) that there are no shoaling large pelagic fish within 500 m of the seismic source.
- 2.3.48.8 In the case of shoaling large pelagic fish being observed within the mitigation zone, delay the “soft-start” until animals are outside the 500 m mitigation zone.
- 2.3.48.9 Terminate seismic shooting on:
- Observation of slow swimming large pelagic fish (including whale sharks, basking sharks, and manta rays) within the 500 m mitigation zone.
 - Observation of any obvious mass mortalities of fish (specifically large shoals of tuna or surface shoaling small pelagic species such as sardine, anchovy and mackerel) when estimated by the MMO to be as a direct result of the survey.
 - For slow swimming large pelagic fish, terminate shooting until such time as the animals are outside of the 500 m mitigation zone (seismic “pause”, no soft-start required).
- 2.3.49 In addition, I have already found (under the second ground of appeal) that a Marine Biodiversity Assessment was undertaken and that the impacts on marine fauna were found to be of Low/Negligible Significance (section 5.1 of that specialist report and section 9.3.1 of the BAR).

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- 2.3.50 The Marine Biodiversity Assessment and Fisheries Assessment were also subjected to an external peer review, with the objective of ensuring the accuracy and completeness of the provided information and the interpretations of it in identifying the risks of the proposed activity. The external peer review of the Marine Biodiversity Assessment (Appendices C2.1 of the BAR) concluded that the assessment is comprehensive, detailed, logically constructed, and consistent in its approach to the impact analyses. It is based on current information and scientific understanding of the various effect levels on the defined receptors and, for acoustic effects, supported by sound transmission loss modelling. No gaps have been identified in the review and the assessment was considered fit for purpose. The external peer review of the Fisheries Assessment (Appendix C.3.1 of the BAR) concluded that the assessment is highly commendable, and undertaken clinically and with due diligence. The external peer review specialist concurs with all impact significance levels proposed in the Specialist Fisheries Assessment.
- 2.3.51 I note that the applicant undertook a Social Impact Assessment (Appendix C4 to the BAR). The findings of the Social Impact Assessment are summarised in section 9.3.4 of the BAR. Overall, these impacts were assessed as being of medium significance both before and after the implementation of mitigation measures. The mitigation measures recommended in the Social Impact Assessment have been incorporated into section 13.6 of the EMPr.
- 2.3.52 The assessment methodology for the Social Impact Assessment drew, inter alia, on the public participation records provided by the EAP, as well as on ongoing consultation with affected stakeholders since 2022. This included workshops initiated by the applicant with project-affected communities, during which the process was explained and the communities were afforded an opportunity to indicate their preferred methods of consultation. In my view, the nature and extent of the engagement described in the Social Impact Assessment went beyond the formal public participation requirements prescribed in Chapter 6 of the 2014 EIA Regulations.
- 2.3.53 The following potential socio-economic impacts were identified and assessed in the Social

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Impact Assessment (on page ii and sections 8.4 and 8.5):

- Uncertainty;
- Further marginalisation of vulnerable groups;
- Perceived impact on livelihoods;
- Impacts on sense and spirit of place;
- Stakeholder fatigue;
- Community expectations; and
- Social unrest.

2.3.54 The impact on livelihoods is dealt with at section 8.4.3. of the report. The coastal communities in the area of interest are mostly fishing communities that make their livelihoods from the sea and have been doing so for generations. They rely on the ocean for food and economic security, as well as their identity and heritage. If it is no longer possible for them to make a living from the sea, or if their ability to make a living from the sea is reduced, it will result in a great increase in poverty in the area as there are very limited alternative options for them to make a livelihood. Their skill sets are strongly linked to the sea and cannot be transferred to other economic activities without skills development, training activities and the economic diversification of the area. This makes these communities extremely vulnerable.

2.3.55 The report records that small-scale fishers can travel approximately 15 nautical miles offshore with their boats. Some of them have indicated that they sometimes need to go further to be able to catch enough fish. Livelihoods are already compromised due to the fishing quota system, over-fishing, lack of employment opportunities, pollution, and the effects of climate change. However, with reference to the assessment of the impacts on the catch rates from the Specialist Fisheries assessment, the impact on livelihoods is not because of the actual impact on catch rates, but because of the perceived impact (something that is believed to be a potential impact rather than something that has been established as being an actual impact) of the oil/gas industry on fishing industry.

2.3.56 The Social Impact Assessment notes that concerns regarding livelihoods arise partly from perceptions associated with oil and gas development generally and the fear that such

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activities may adversely affect fishing resources. However, I have nevertheless separately considered the appellants' contention that the proposed seismic survey may cause actual reductions in fish abundance, catch rates and fishing opportunities. For the reasons already discussed in relation to the Fisheries Assessment, I am not persuaded on the evidence before me that the proposed survey is likely to result in material reductions in fish catches or fish availability for small-scale fishing communities.

2.3.57 The cumulative effects of existing pressures and activities in the marine environment upon which these communities depend for their livelihoods were also considered. The assessment indicates that many of the affected communities remain economically vulnerable and that their ability to sustain themselves is already subject to a range of pressures. Importantly, the communities do not oppose development in principle; rather, they seek development that is undertaken in a sustainable manner and does not jeopardise their livelihoods, food security, cultural heritage and connection to the marine environment. Concerns were expressed regarding the cumulative impacts of offshore mining, pollution, climate change, overfishing and other activities perceived to affect the sustainability of marine resources and the resilience of coastal communities.

2.3.58 In Chapter 10 of the Social Impact Assessment, the specialist concludes that the applicant's activities would be of short duration (less than four months), and if viewed in isolation considering only technical risks as discussed in various specialist reports conducted as part of the EIA process, the impacts will be negligible. However, the project does not happen in a vacuum, and the social environment is much wider than the footprint of the project. If the social risks and potential damage to cultural and indigenous rights are considered, the impact on the social fabric of already vulnerable communities may be significant. Potential future benefits and the economic development of the country should the surveys find any significant resources are not disputed. The overall impact significance (including the impact on livelihoods) was rated as being of medium significance both before and after mitigation measures. From a social perspective it is recommended that the project proceed subject to the mitigation measures being implemented.

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2.3.59 The Social Impact Assessment (pages 112, 119 and 120) and the final BAR (page 196) recommend the following mitigation measures:

- The applicant should continue to implement the community engagement protocol that was developed in 2024 with the input of the West Coast communities. This protocol aims to address the impact on vulnerable groups and uncertainty, and also have an educational component. The communities identified the best ways and methods to communicate with their members. They underlined the importance of frequent communication. The protocol is outlined in section 9 of the report.
- Development of a grievance mechanism available for the duration of the seismic surveys.
- Continue to consult with communities on potential ways in which to make a positive contribution to the communities.
- Stakeholder fatigue in the area is a significant risk and the regulators and industry must collaborate to address this on a higher level.

2.3.60 The BAR includes an additional mitigation measure, that the applicant should contribute to assisting with collaboration on independent research on how fish species on the West Coast, such as snoek, respond to seismic surveying. The applicant will contact relevant scientific research institutions to offer the potential of collaborating in independent on-water research during the survey.

2.3.61 Regarding the finding in the environmental authorisation (page 15) that the proposed 3D seismic survey technology currently used in South Africa is generally regarded as “non-intrusive” in nature, I note PASA’s clarification that the seismic survey is known to be the least intrusive exploration technique, based on its transient nature and the fact that it does not involve physical sea floor disturbance. Section 3 of the BAR describes a seismic survey as a process in which an acoustic instrument towed by a survey vessel, beneath the surface of the sea, emits powerful, low-frequency sound pulses towards the seabed. The seismic waves

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travel into the subsurface and are reflected back when they encounter different geological layers. These reflected signals are then detected and recorded by hydrophones or other receivers towed behind the survey vessel.

2.3.62 I have also considered the submission that the previous seismic survey contributed to poor fishing seasons and reduced catches. I note the applicant's response to this submission, namely that its previous survey within the current project area, undertaken pursuant to its 2022 environmental authorisation, did not result in any material adverse effects on the receiving environment. No evidence has been placed before me demonstrating a causal link between the previous survey and declines in fishing performance; nor is there evidence before me which contradicts the findings of the Fisheries Assessment regarding the location of the survey area, sound attenuation, fish distribution and expected impacts on fisheries. I am therefore unable to accord significant weight to the appellant's submission.

2.3.63 In relation to the eighth appellant's contention that the proposed project potentially infringes upon its rights to a healthy environment and right to work, as protected by the Constitution of the Republic of South Africa, 1996 (the Constitution), it is necessary to consider the relevant constitutional provisions.

2.3.63.1 Section 22 of the Constitution provides that every citizen has the right to choose their trade, occupation or profession freely. The practice of a trade, occupation or profession may be regulated by law.

2.3.63.2 Section 24 of the Constitution provides that:

- (a) everyone has the right—
 - (i) to an environment that is not harmful to their health or well-being; and
 - (ii) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that—
 - (aa) promote conservation; and
 - (bb) secure ecologically sustainable development and use of natural

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resources while promoting justifiable economic and social development.

2.3.64 NEMA gives effect to the environmental right protected in section 24 of the Constitution and establishes a framework for decision-making that promotes sustainable development. Section 2(4)(a) of NEMA provides that sustainable development requires consideration of all relevant factors, including the following:

- (i) That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- (ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- (iii) that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;
- (iv) that waste is avoided, or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;
- (v) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
- (vi) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;
- (vii) that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and
- (viii) that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

2.3.65 Section 24 of the Constitution does not preclude development or require that all environmental impacts associated with development be avoided. Rather, it requires that the environment be protected through reasonable legislative and other measures and that development involving the use of natural resources be undertaken in an ecologically sustainable manner, while promoting justifiable economic and social development. NEMA gives effect to these constitutional imperatives by requiring environmental impacts to be considered and managed

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in accordance with the principles of sustainable development.

- 2.3.66 On the information before me, I am satisfied that the environmental, fisheries and socio-economic impacts of the proposed activity were assessed in accordance with NEMA and the 2014 EIA Regulations. The evidence before me indicates that the proposed survey is not expected to result in significant impacts on small-scale fisheries, the livelihoods of fishing communities, or access to fishing resources. I am further not persuaded that the proposed activity prevents fishers from practising their occupation or otherwise constitutes an unjustifiable limitation of any rights protected by sections 22 or 24 of the Constitution. The environmental authorisation is accompanied by mitigation measures specifically directed at reducing impacts on fisheries, marine fauna and affected communities, and I am satisfied that the decision is consistent with the constitutional objective of securing ecologically sustainable development while promoting justifiable economic and social development.
- 2.3.67 In relation to the eighth appellant's contention that the project is unlikely to result in increased employment opportunities for local communities in the vicinity of the project site, and that any employment opportunities will be limited to highly skilled persons, page 37 of the final BAR confirms that reconnaissance and exploration activities typically require highly skilled personnel. It further indicates that, where feasible, local labour may be utilised. However, such opportunities are expected to be extremely limited, if available at all. The majority of the work will be undertaken remotely through the acquisition and processing of existing information.
- 2.3.68 Having considered the grounds of appeal and the response thereto by the applicant and the Competent Authority, I am of the view that the potential impacts and mitigation measures in respect of the project and environmental receptors have been adequately identified, considered and addressed. I note that the project, being of short duration and of limited scope, is not expected to provide many job opportunities. I am satisfied, however, that the socio-economic impacts and mitigation measure on inter alia, marine fauna and small scale and commercial fishing have been considered and addressed, moreover as the project is located approximately 218 km from the coastline at its nearest point. I note, too, the applicant's commitment to implement a community engagement protocol and grievance mechanism to

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promote ongoing consultation with affected communities, and to place an experienced Fisheries Liaison Officer on board the seismic or guard vessel for the duration of the survey to facilitate communications with fishing vessels in the vicinity of the seismic survey areas

2.3.69 Importantly, this is not a case in which socio-economic impacts were ignored or deferred for future consideration. The fisheries impacts, livelihood impacts and broader social concerns raised by affected communities were expressly identified, assessed and evaluated during the environmental assessment process. The competent authority was therefore in a position to weigh the potential benefits and impacts of the proposed activity on the information available at the time of the decision. I am satisfied that it did so.

2.3.70 That being said, I am concerned about the plight of small-scale fishers and the communities that they belong to. I appreciate that for some of them, this project presents a cause of concern and anxiety. This is confirmed on pages 110 to 111 of the Social Impact Assessment:

“Although the marine fauna and fisheries specialists have indicated that the impacts on the marine fauna would be negligible, the communities, with generations of experience in the ocean, fear that the behaviour of the fish will change and that this would affect their catch rates and consequently their livelihoods. What is seen as a minor impact in a large ecosystem may be experienced as a major impact by an individual. The marine fauna might not be affected greatly, but the fishing community fear that marine fauna might change its behaviour in response and that is a main concern from a social perspective.

It must be considered that from a social perspective, perceived impacts (something that is believed to be a potential impact rather than something that has been established as being an actual impact) should be treated as real impacts. Perceived impacts affect how people feel about the project and how they feel and behave generally, thus perception is reality for them (Vanclay et al., 2015). While the public’s assessment of risk is perceptual in nature, their fears should not be dismissed as irrational and therefore unimportant. Living with the fear and uncertainty is an impact in itself (Burdge, 1998).”

2.3.71 Whilst I accept that the BAR recommends measures to minimise and mitigate the impacts on

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fisheries and livelihoods to acceptable levels, this does not always remove the uncertainty and concern experienced by affected communities. For many fishing communities, their relationship with the sea extends beyond economics and encompasses cultural identity, heritage, food security and intergenerational livelihoods. I am therefore of the view that ongoing and meaningful engagement with affected fishing communities remains important for the duration of the survey.

2.3.72 In this regard, I note that the Fisheries Assessment already requires the appointment of an experienced Fisheries Liaison Officer (FLO) to facilitate communication between the applicant and affected fishing interests. I consider it appropriate to strengthen that existing mechanism. I am therefore amending the relevant condition to require that the FLO also serve as an accessible point of contact for affected fishing communities, maintain regular communication with those communities, receive and record concerns and complaints, communicate relevant project information, and facilitate the investigation and resolution of issues raised by fishing communities during the survey period.

2.3.73 Accordingly, I am amending the environmental authorisation to strengthen the communication and accountability mechanisms of the appointed Fisheries Liaison Officer (FLO) for the duration of the survey. In this regard, the environmental authorisation must be varied to clarify the roles and responsibilities of the FLO as follows:

2.3.73.1 The FLO must serve as the primary point of contact between the survey operator and affected fishing communities and coastal communities and must perform his or her functions in a fair, transparent and impartial manner;

2.3.73.2 The FLO must maintain regular communication, at least every fortnight, with affected fishing cooperatives, fishing associations, small-scale fishing communities, fishing right holders and affected coastal communities;

2.3.73.3 The FLO must receive, record and maintain a written register of complaints, concerns and reports of interference with fishing activities; coastal socio-economic activities; facilitate the prompt investigation thereof; communicate

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the outcome of investigations and, where appropriate, any corrective measures implemented to affected parties;

2.3.73.4 The FLO must maintain a record of all complaints and actions taken, which must be made available to the competent authority upon request.

2.3.73.5 The FLO may not be a member of the survey crew directly responsible for survey operations and must possess demonstrable knowledge of the fisheries sector operating within the area.

2.3.73.6 In addition, the FLO must submit monthly reports to the competent authority setting out stakeholder engagements undertaken, complaints received, concerns raised by fishers, investigations conducted and corrective measures implemented.

2.3.74 These measures will strengthen transparency, accountability and ongoing communication with affected fishing and coastal communities and provide a practical mechanism through which concerns can be raised and addressed throughout the survey period.

2.3.75 Save for the inclusion of the additional conditions strengthening the role and functions of the fisheries liaison officer in the manner described above, I find that the grounds of appeal have no merit and are accordingly dismissed.

2.4 FOURTH GROUND OF APPEAL: CULTURAL HERITAGE

Appellants' Submissions

The third, sixth seventh, eighth, ninth and tenth appellants raise the following issues in support of this ground of appeal:

2.4.1 The third appellant submits that indigenous communities along the coast have deep cultural and spiritual connections to the ocean. Seismic activities can disrupt these connections,

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leading to cultural loss and community distress.⁵⁹

- 2.4.2 The sixth appellant submits that seismic surveys in the ocean can disrupt the culture and livelihoods of local people who have a covenant with the ocean. This can lead to the erosion of cultural and spiritual heritage that is key to a sense of self, identity and dignity. The cultural and living heritage of communities that participate in fishing and other ocean-related activities could potentially be affected by the proposed project. Research and discussions have shown that the historical economic decline of social cohesion, activities and traditions.
- 2.4.3 The seventh appellant avers that the impacts of the proposed activities on culture and heritage could lead to the destruction of their cultural and spiritual heritage and a significant loss of recreational fishing.
- 2.4.4 The eighth appellant submits that seismic surveys in the ocean can disrupt the culture and livelihoods of local people who have a connection to the ocean. This can lead to the destruction of cultural and spiritual heritage that is key to a sense of self, identity and dignity. An example of this is a significant loss of recreational fishing through changes to fish populations and migrating areas. The BAR notes that the social risk and potential harm to cultural and indigenous rights could have consequences for communities, some of which are already vulnerable. The cultural and living heritage of communities participating in fishing and other ocean-connected activities may be affected by the proposed project. They are a people who identify as members of indigenous communities and may be affected by the proposed project.
- 2.4.5 In addition, the Constitution says that our government must consider international legal frameworks and policies that South Africa is party to. The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) urges government to recognise their indigenous rights to natural resources, lands and waters and to grant them the right to Free, Prior, Informed Consent to developments that impact on lands, resources and waters. They have made it clear

⁵⁹ [oai_citation:1, Major victory for Wild Coast communities: Shell interdicted from ...](<https://www.greenpeace.org/africa/en/press/50259/major-victory-for-wildcoast-communities-shell-interdicted-fromconducting-seismic-operations-with-immediateeffect/>).

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that they do not give their consent to this development. They want renewable, sustainable forms of energy to be promoted from now on. They demand respect for their indigenous rights in terms of UNDRIP. Research and their own indigenous knowledge have shown that the historical economic decline of fisheries has led to the loss of social cohesion, activities and traditions.

- 2.4.6 The ninth appellant contends that the competent authority has failed to meet its obligations to protect the rights of I&AP communities protected under various international and domestic laws who are opposed to and have objected to this application (page 111 of the Social Impact Assessment) on the basis of their living cultural rights, heritage and spiritual well-being.
- 2.4.7 According to the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) which South Africa has ratified (2016), Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied coastal seas (UN 2007). The project could infringe upon these rights, leading to cultural erosion and loss of heritage.
- 2.4.8 The poorly conceived Social Impact Assessment report proposal to, "Re-assess post-project the potential effects on the identified communities and their intangible cultural heritage" demonstrates a mindset of complete disregard for the rights of this heritage. This recommendation is simplistic, reductive and grossly inconsistent with the degree of significance of, and makes a mockery of, the spiritual and cosmological value that the sea holds for coastal, fisher, Indigenous and First People communities. This poorly defined approach used by the heritage specialist does not address the objections raised by I&APs, limiting the ability of the CA to make informed decisions by making no distinction between quantitative and qualitative inputs.
- 2.4.9 The precautionary approach mandates maintaining the status quo unless there is sufficient information to realistically determine impacts. This project has served unjustly as a rationale for halting livelihoods in times of economic difficulty and impacting stakeholder marine-related intangible cultural heritage. The effects to their intangible heritage and relation to the sea

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remain, whether impacts occur close or far from shore.

2.4.10 The competent authority has not applied its mind to the dispossession, which covers the loss of the incorporeal experienced by local communities. Concerns regarding impacts to intangible heritage were evident in both these recent cases, of which the competent authority will be aware:

2.4.10.1 *Sustaining the Wild Coast NPC & Others v Minister of Mineral Resources and Energy & Others*, High Court of South Africa, Eastern Cape Division, Makhanda – Case No. 3491/2021;

2.4.10.2 *Christian John Adams & Others v Minister of Mineral Resources and Energy & Others* (2022, March 1) Case No. 1306/22 in the High Court of South Africa Western Cape Division, Cape Town.

2.4.11 By failing to apply its mind to the objections and rights of Indigenous interested and affected parties the competent authority infringes their rights to intangible, ancestral and tangible marine heritage and has failed to uphold its responsibilities enshrined in the section 15 of the Bill of Rights and international law.

2.4.12 The tenth appellant avers that neither the final BAR nor the Cultural Heritage Report provide any evidence that the concerns raised during previous processes by coastal communities about their cultural and heritage associations with the ocean have been considered.

2.4.13 Furthermore, the proposed and authorised mitigation measures are totally inadequate. The mitigation measure set out in the EMPr is to re-assess impacts post-project.⁶⁰ This is flawed for a number of reasons, including:

2.4.13.1 firstly, it in no way mitigates the impacts of the operations and cannot be described as a mitigation measure;

⁶⁰ Page 32 of the EMPr.

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- 2.4.13.2 secondly, the measure is aimed at providing "resources and support for communities to develop and undertake safeguarding measures or plans to enhance the mitigation capacity of their intangible cultural heritage by fostering dialogue, mutual understanding and reconciliation between and within communities", which in no way holds the applicant accountable for any impacts caused by the reconnaissance activities; and
- 2.4.13.3 thirdly, it fails to comprehend and mitigate any of the economic or other harm to livelihoods, and cultural and heritage practices.
- 2.4.14 The pre-mitigation significance given to this impact is rated as Medium, and then Low post mitigation. If mitigation does not actually change the impact then it cannot change the rating. There is no rational connection between the results of the arbitrary, and somewhat absurd, mitigation measure and any change in the impact caused by the reconnaissance activities on coastal communities.
- 2.4.15 Further, and unacceptably, cumulative impacts on these rights have not been considered: "At this stage, cumulative impacts are purely speculative. Still, the potential for the future increase in cumulative impacts due to current and future seismic surveys and the potential for future Oil and Gas production cannot be excluded but is not quantifiable at this stage for cultural heritage."⁶¹

APPLICANT'S RESPONSE

In response to this ground of appeal, the applicant submits as follows:

- 2.4.16 The third appellant was pre-identified and registered as an I&AP at the outset of the public participation process conducted for the project. No comments were received from the appellant during the entire Basic Assessment process, thus failing to provide an opportunity for the EAP and/or applicant to consider their inputs prior finalisation and submission of the final

⁶¹ Page 195 of the final BAR.

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BAR and application to the competent authority. The appellant, having elected not to participate in the commenting process, despite being specifically invited to do so, has now chosen to raise grounds of appeal which in the applicant's view could easily have been addressed, had the appellant taken up the invitation to engage with the EAP, applicant and specialists during the comments and responses period. While the EAP and applicant are required to create meaningful opportunities for consultations, our courts have held that meaningful consultation is a two-way communication and accordingly an obligation rests on both parties to communicate (refer *Maqoma v Sebe No and Another*⁶²). Accordingly, the obligation to consult meaningfully does not only rest with the EAP and applicant but also with the appellant and the appellant has failed on this obligation.

2.4.17 The third, sixth and ninth appellants also have not challenged any of the findings in the BAR or the mitigation measures contained in the EMPr. The third and ninth appellants have not described any specific aspects relevant to the proposed activities which the applicant can interrogate and analyse in order to respond meaningfully, and accordingly the applicant is left to imply meaning into the grounds of appeal in order to respond to the appellants. The eighth appellant has not raised a meaningful challenge to what has been stated in the BAR or the management and mitigation measures to be implemented.

2.4.18 An environmental authorisation was granted to the applicant on 21 October 2024 by the CA, in accordance with regulation 24 of NEMA and the 2014 EIA Regulations. The environmental authorisation authorises the applicant to undertake three-dimensional seismic survey activities in an area off the west coast of South Africa, approximately 256 kilometres offshore St Helena Bay, extending north along the western coastline to approximately 220 kilometres offshore Hondeklip Bay (the Project Area or survey area). The applicant conducted a prior survey within the Reconnaissance Permit Area approximately 9 months ago (2022 EA), which survey was completed by the applicant and has not resulted in any material adverse effects on the receiving environment. The new survey area will also exclude an area of approximately 9000km² from full fold acquisition as this area has already been surveyed in the previous survey which was completed on 28 April 2024. Full details of the proposed activities are

⁶² *Maqoma v Sebe No and Another* 1987 (1) SA 483 (Ck) at paragraph 426.

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contained in the BAR.

- 2.4.19 All potential impacts which were required to be assessed for purposes of the grant of an environmental authorisation for the proposed activities have been thoroughly and adequately assessed by the independent EAP in the BAR, together with the following specialist reports which are contained in Appendix C to the BAR:
- 2.4.19.1 Underwater Acoustics Modelling Report dated June 2024, which forms Appendix C1 to the BAR (Underwater Modelling Report);
 - 2.4.19.2 Biodiversity and Ecosystem Services Assessment Report dated June 2024, which forms Appendix C2 to the BAR (Marine Biodiversity Assessment Report);
 - 2.4.19.3 Specialist Fisheries Assessment Report dated June 2024, which forms Appendix C3 to the BAR (Specialist Fisheries Report);
 - 2.4.19.4 Social Impact Assessment Report dated April 2024, which forms Appendix C4 to the BAR (the Social Impact Report); and
 - 2.4.19.5 Heritage Impact Assessment Report dated 12 June 2024, which forms Appendix C5 to the BAR (Heritage Impact Assessment Report).
- 2.4.20 All relevant potential impacts of the proposed activities on cultural and spiritual heritage have been thoroughly assessed in the Social Impact Report and the Heritage Impact Assessment Report and are discussed in Sections 8.7, 8.8, 9.3.3, 9.3.4, 11.3.3 and 11.3.4 of the BAR respectively.
- 2.4.21 It is acknowledged in the Heritage Impact Assessment Report that a large section of the affected communities not only view themselves as small-scale fishers but also as indigenous people and, as such, are intrinsically linked to the ocean and the land they have lived on for centuries. In the assessment, marine-related intangible cultural heritage and people's connection to the ocean is relevant. This type of heritage incorporates the unique ethos and identity of specific places linked with fishing villages; oral history; popular memory; cultural

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traditions; indigenous knowledge systems, rituals, beliefs, and practices (e.g., fishing techniques) associated with the ocean. A pre-mitigation negative impact is projected on a regional scale over the long term with a moderate intensity due to the potential indirect impact on the communities and, ultimately, their heritage, with a high probability of this impact occurring. The pre-mitigation impact is rated as medium. The potential residual impact with mitigation measures from the scientific studies is projected as low with a medium confidence factor. The specialist acknowledges that at the current phase, cumulative impacts are purely speculative. Still, the potential for the future increase in cumulative impacts due to current and future seismic surveys and the potential for future Oil and Gas production cannot be excluded but is not quantifiable at this stage for cultural heritage.

- 2.4.22 Considering the assessment based on the findings of the fieldwork as well as the scientific studies, the specialist is of the opinion that the impact of the proposed project on the cultural heritage resources can be mitigated through the implementation of the recommendations in the Heritage Impact Assessment Report and reflected in the BAR, which are based on the UNESCO Intangible Cultural Heritage (ICH) guidelines and is aimed at safeguarding the cultural heritage of the small-scale fishers and cultural groupings in influence of this project. The mitigation measures set out in the Heritage Impact Assessment Report and the BAR include recommendations that the applicant:

2.4.22.1 Re-assess post-project the potential effects on the identified communities and their intangible cultural heritage. This will require consideration of the socio-economic baseline developed during the previous survey and this environmental impact process. Based on the outcomes, provide resources and support to enhance the mitigation capacity of communities' intangible cultural heritage by fostering dialogue, mutual understanding and reconciliation between and within communities; and

2.4.22.2 Based on the outcomes, provide resources and support for communities to develop and undertake safeguarding measures or plans to enhance the mitigation capacity of their intangible cultural heritage by fostering dialogue, mutual

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understanding and reconciliation between and within communities.

2.4.23 The findings of the social impact assessment, as recorded in the Social Impact Report are that in general, communities are not against development, but they want to see it happen in a sustainable way that does not jeopardise their source of livelihood. From a social perspective it is clear that the communities and local people are divided about the oil and gas industry. If the project is considered in isolation, the impacts are negligible. However, the project does not happen in a vacuum, and the social environment is much wider than the footprint of the project. If the social risks and potential damage to cultural and indigenous rights are considered, the impact on the social fabric of already vulnerable communities may be significant. Potential future benefits and the economic development of the country, should the surveys find any significant resources, are not disputed. The recommendation is therefore that the project can only proceed once the social mitigation measures have been implemented and the community are sufficiently informed and educated to enable meaningful engagement. The impact significance (including the impact on livelihoods) was rated as being of medium significance both before and after mitigation measures. Various mitigation measures are also provided in the BAR and EMP, including but not limited to:

2.4.23.1 The applicant should continue to implement the community engagement protocol that the applicant developed in 2023/2024. This protocol aims to address the impact on vulnerable groups and uncertainty, and also have an educational component.

2.4.23.2 Creation of a grievance mechanism available for the duration of the seismic surveys.

2.4.23.3 Contribution by the applicant to continue to assist with collaboration on independent research on how fish species on the West Coast, such as snoek, respond to seismic surveying. Searcher will further contact relevant scientific research institutions to offer the potential of collaborating in independent on-water research during the survey.

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2.4.23.4 Consultation with communities on potential ways in which to make a positive contribution to the communities.

2.4.24 With regards to the appellants' reliance on *Sustaining the Wild Coast and Others v Minister of Mineral Resources and Energy and Others*⁶³ (*Sustaining the Wild Coast*) and *Adams and Others v Minister of Mineral Resources and Energy and Others* (Case No.1306/22) (*Adams and Others*), the facts before the court in those cases are not similar, and in fact vastly different, to the facts which were before the CA when it granted the environmental authorisation to the applicant. Firstly, extensive specialist impact assessment studies such as the Underwater Modelling Report, the Social Impact Report and the Heritage Impact Assessment Report with mitigation measures proposed in the EMPr was before the CA when it granted the environmental authorisation to the applicant.

2.4.25 Secondly, the cases of *Sustaining the Wild Coast* and *Adams and Others* turned on whether or not the public consultation was adequate. The courts did not find, as the appellant is attempting to infer, that cultural and spiritual concerns at all times override secure ecologically sustainable development and use of South Africa's natural resources as stated in section 24 of the Constitution. What the courts did state was that public consultation was required in order to properly assess the impacts of the proposed activities on cultural and spiritual heritage. The criteria therefore remains that the proposed activities must meet the criteria of sustainable development in accordance with section 24 of the Constitution and the principles of NEMA, in that the proposed activities must not result in unacceptable environmental pollution or, degradation, or adverse socio-economic and health impacts, that cannot be avoided or minimised, and it is submitted that the BAR and the EMPr reflects that the proposed activities meets this criteria of sustainable development.

2.4.26 Furthermore, the EAP and the applicant conducted an extensive, detailed and meaningful Public Participation Process (PPP) for the proposed activities as is set out in Section 7 of the BAR and presented in detail in Appendix B. The PPP for the proposed project complied with

⁶³ *Sustaining the Wild Coast NPC and Others v Minister of Mineral Resources and Energy and Others* (3491/2021) [2022] ZAECKHC 55; 2022 (6) SA 589 (ECMk) (1 September 2022).

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and exceeded the legal requirements set out in the NEMA, the 2014 EIA Regulations and the Public Participation Guideline in terms of EIA Regulations (Public Participation Guidelines), and in line with the principles of Integrated Environmental Management (IEM). IEM implies an open and transparent participatory process, whereby stakeholders and other I&APs are afforded an opportunity to comment on the proposed activities and have their views considered and included as part of project planning.

2.4.27 A high-level summary of PPP undertaken includes the following:

- 2.4.27.1 An initial I&AP database was compiled based on known key I&AP's and stakeholder databases available from existing sources and from the previous I&AP database for the 2022 environmental authorisation.
- 2.4.27.2 An initial notification and call to register for a period of 30 days was circulated to all potential I&APs in April 2024.
- 2.4.27.3 Initial newspaper advertisements placed in Cape Times, Sentinel News, Weslander, Ons Kontrei, Die Plattelander as well as in the National Gazette.
- 2.4.27.4 A1 Correx site notices in English, Afrikaans and IsiXhosa were placed at 100 locations along the West Coast, stretching from Hout Bay to Port Nolloth in April 2024.
- 2.4.27.5 A3 posters in English, Afrikaans and IsiXhosa were placed at local public gathering places at various onshore locations, mainly in Cape Town.
- 2.4.27.6 An initial round of Radio advertisements (KFM, Radio NFM, Radio West Coast and Radio Namakwaland) were published in April 2024.
- 2.4.27.7 Notification regarding the availability of the BA Report for public review and the venues and times for planned public meetings.

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- 2.4.27.8 The BAR was made available for public review from 21 June 2024 to 22 July 2024 both online (EIMS Website) and offline (various Libraries along the West Coast).
- 2.4.27.9 A series of public meetings with I&APs were held at various locations along the West Coast from Port Nolloth to Cape Town.
- 2.4.27.10 A virtual meeting was also held with I&APs who could not attend the physical meetings.
- 2.4.28 The entire PPP was undertaken in the three most common languages in the area (English, isiXhosa and Afrikaans).
- 2.4.29 In addition, non-technical summaries were made available to I&APs, which went beyond the executive summary in detail and descriptions.
- 2.4.30 Furthermore, a social facilitator and social specialist were part of the project team during the public participation process.
- 2.4.31 It should also be noted that the EAP specifically consulted with the small-scale fishers and other community members and have given serious consideration to the comments and inputs from the local communities. Small scale fishing communities have been thoroughly consulted as part of the Public Participation process for the project. The impact of the project on small scale fishers has also been assessed in the specialist Fisheries Report, which concludes that with the implementation of the project controls and mitigation measures, the residual impact of the proposed activities is considered to be of low significance for large pelagic longline sector. There is no impact expected on the demersal trawl, midwater trawl, demersal longline, small pelagic purse-seine, tuna pole-line, line fish, west coast rock lobster, netfish and small-scale fishing sectors.
- 2.4.32 Nothing raised by the third and ninth appellants has impugned the transparent, comprehensive

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and inclusive nature of the public consultation and participation process as fully detailed in Section 7 of the BAR and presented in detail in Appendix B and their reliance on the *Sustaining the Wild Coast* case is misplaced.

2.4.33 With regard to the eighth and ninth appellants' reference to the Constitution and international legal frameworks and policies, the applicable legislation on National Policy and Planning Context and International Legislation relating to the proposed activity and receiving environment is highlighted in Section 4.8 of the BAR. The National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) stipulates that cultural heritage resources may not be disturbed without authorisation from the relevant heritage authority. The NHRA provides for the protection of South Africa's natural culture, including wrecks or associated debris or artefacts that may be found or disturbed on the seabed. Section 13 states that the South African Heritage Resources Agency (SAHRA) is the statutory organisation responsible for the protection of South Africa's cultural heritage. According to Section 35 of the NHRA, any person who discovers archaeological objects or material in the course of a development must immediately report the find to SAHRA. No person may, without a permit issued by SAHRA, destroy, damage, excavate, alter, deface or otherwise disturb any archaeological site. Although South Africa voted in favour of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) in 2007 it has not yet ratified ILO Convention No. 169. Convention No. 169 is based on the recognition of indigenous and tribal peoples' aspirations to exercise control over their own institutions, ways of life and economic development and to maintain and develop their identities, languages and religions, within the framework of the States in which they live.⁶⁴

2.4.34 Furthermore, the eighth appellant's personal preference for renewal energy is noted. The proposed activities and the utilisation of South Africa's oil and gas resources is permitted by the MPRDA (and will soon be governed by the Upstream Petroleum Resources Development Act 23 of 2024) and also specifically provided for in NEMA through various listing notices namely Activity 21B of Listing Notice 1, Activity 18 of Listing Notice 2 and Activity 20 of Listing Notice 2 to the 2014 EIA Regulations. In addition, the Integrated Resource Plan (IRP) 2018 re-

⁶⁴ <https://www.iwgja.org/en/south-africa.html#:~:text=Indig,and%20Khoekhoe%20or%20Khoe%2DSan.>

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affirms that "South Africa continues to pursue a diversified energy mix that reduces reliance on a single or a few primary energy sources". This sentiment was reaffirmed in the IRP 2019 as well as the IRP 2023. The 2021 Nationally Determined Contributions (NDCs), which represent South Africa's fair contributions to the decarbonisation commitments of the Paris Agreement, are in turn aligned with the IRP 2019. Furthermore, the National Development Plan 2030 (NDP) states that "the country will explore the use of natural gas as a less carbon intensive transitional fuel". The energy mix contemplated by the South African government comprises both non-renewable and alternative energy sources for South Africa's future energy security. Accordingly, the appellant's personal preference for one source of energy cannot override the needs of the country nor can it override the powers of the legislature, government policy or the laws of this country future and existing. Furthermore, the eighth appellant's personal preference is unsubstantiated and shaped by bias on what the appellant wants government to do, as opposed to an objective assessment of what the laws of the Republic South Africa permit and what has been stated in the BAR.

- 2.4.35 It is assumed that the ninth appellant is referring to the Heritage Impact Assessment report and not the Social Impact Assessment report. The recommendation from the heritage specialist in Section 9.3.3.1 of the BAR is for the applicant to re-assess post-survey, the effects on the identified communities and their intangible cultural heritage as well as of related economic damage and losses, and human development impacts and based on the outcomes of this assessment, provide resources and support for communities to develop and undertake safeguarding measures or plans to enhance the mitigation capacity of their intangible cultural heritage by fostering dialogue, mutual understanding and reconciliation between and within communities. This consultation would be done collaboratively with communities as well as the appropriate heritage or social specialist. This mitigation measure is in addition to consultation undertaken pre-survey and for the duration of the activity. It should be seen as a check and balance or follow-up monitoring event in order to enhance mitigation capacity of intangible heritage for future projects of a similar nature, and to verify the predicted impacts. It should be noted that a similar verification and follow-up consultation was completed by the applicant for the 2023 / 2024 survey. During this follow-up consultation from the previous survey no significant issues were raised with respect to the impacts of the survey on intangible heritage.

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The heritage specialist is of the opinion that the impact of the proposed project on the cultural heritage resources can be mitigated through the implementation of the recommendations in the Heritage Assessment Report and reflected in the BAR. The mitigation to re-assess was only one of the mitigation measures, it should be noted that the significance rating post mitigation considers the implementation of all mitigation measures.

- 2.4.36 An EIA is a risk-assessment based study and is a process of predicting and evaluating the likely environmental impacts of a proposed project or development. Assumptions and limitations, including knowledge gaps are included in the BAR. Keeping these information gaps in mind, the assessment of impacts has adopted a strongly precautionary approach.
- 2.4.37 The ninth appellant is not clear on which incorporeal aspects have been or will be lost.
- 2.4.38 With regard to the tenth appellant's submissions, the Cultural Heritage Impact Assessment and section 9.3.3 of the BAR considers the concerns raised by coastal communities (both during the current Basic Assessment process as well as the previous processes) about their cultural and heritage associations with the ocean.
- 2.4.39 For the previous project, a representative from the applicant consulted with the traditional leadership of the affected communities to establish what their understanding of meaningful consultation is and how communities should be consulted in future. A reassessment post-project was conducted on the potential effects on the identified communities and their intangible cultural heritage, considering the socio-economic baseline developed during this environmental impact process against quantified economic damage and losses and human development impacts in a follow-up socio-economic assessment. This enabled the heritage specialist to evaluate the link between the socio-economic changes induced by the proposed project as it relates to changes in the intangible cultural heritage practices of the communities. The applicant understands that meaningful engagement is critical to its relationships with I&APs and further committed to develop a community engagement protocol based on the San Code of Research Ethics. This was completed in consultation with traditional leaders and the affected communities and was used to inform the PPP. A number of community engagements

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were recommended by the SIA as additional mitigation measures. Efficient engagement with a community involves more than merely setting up a meeting and inviting people. In many communities there is an expectation that outsiders should enter the community via the leadership before a community meeting can take place. The applicant has determined what the most appropriate way would be to interact and engage with the individuals and communities in a decolonised way as part of the mitigation required for the previous approved application.

- 2.4.40 Regarding cumulative impacts associated with future exploration and production activities, there is provision in law for these activities to be assessed prior to implementation on their merits as and when they are proposed. The exploration will not necessarily lead to production. The impact assessment has been conducted on the basis of the activities proposed by the applicant, namely exploration. The environmental authorisation is restricted to these specifically assessed activities. The proposed activities do not include any production activities. Should the applicant or other applicants wish to undertake any additional exploration, or production activities which are not addressed in the current environmental authorisation application, there would be a need to apply for the relevant permissions. These would include a formal application for new environmental authorisation and where relevant an exploration and production right, informed by a comprehensive Environmental Impact Assessment and stakeholder consultation assessing the merits of these specific activities. The impacts of such proposed activities would consequently require specific assessment of the associated impacts and public consultation prior to approval.

PASA'S RESPONSE

In their comments to this ground of appeal, PASA submits that:

- 2.4.41 The potential impacts associated with the authorised activity were assessed and the impacts are of medium significance before mitigation and of low significance after mitigation. This means that the authorised activity will not result in detrimental negative impact on the cultural and spiritual aspects. The issues related to the Shell interdict relate to a specific process

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undertaken for the Shell application and such is still before court.

- 2.4.42 The Department ensured that the correct legislation was followed in assessing the impacts of the proposed activity. In this case, the basic assessment process was followed. Tangible and intangible impacts of the authorised activity were identified assessed, and mitigation measures were recommended. The comments, concerns, objections raised by the I&APs during the public participation process were addressed by the EAP. Responses to public participation comments are included in Appendix 8 of the BAR.
- 2.4.43 The post- project re-assessment is an additional recommendation that will help the environmental authorisation holder to understand how the communities were impacted by the authorised activity. This will also assist the communities in understanding that the impacts of the authorised activity are different from the impacts that have been experienced from the mining operations. Pre-seismic survey operation recommendations or mitigation measures will be implemented during the operation to ensure that impacts are minimised.
- 2.4.44 In reaching the decision, the competent authority considered the principles in section 2 of NEMA, which include the adverse risk approach. In addition, the outcomes of the impact assessment were taken into account, namely that the majority of the impacts were assessed to have low negative significance after mitigation. The outcomes also depicted that the proposed exploration activities will not result in irreparable harm to the environment.
- 2.4.45 With regard to the tenth appellant's contentions, providing evidence for consideration of concerns raised in other projects does not form part of the scope of the impact assessment undertaken for the environmental authorisation in question. This information was not required by the Department to make the decision.
- 2.4.46 In relation to the tenth appellant's submission regarding the pre and post- mitigation significance, the Department is not clear what is being questioned, as it is understood that the medium and the low ratings are not the same.

EVALUATION (Reasons for Decision)

- 2.4.47 I am mindful of the importance of preserving, conserving and respecting cultural heritage of all people within the Republic. I have therefore considered all the submissions made by the appellants with the utmost of gravity. I must however consider these submissions alongside the guiding principles contained in section 2 of NEMA. Moreover, I am guided by the information on record before me.
- 2.4.48 At the outset, I have noted the applicant's submission that certain appellants raise issues on appeal that were not previously raised during the public participation process. There is force in the applicant's observation that the purpose of public participation is to identify and ventilate concerns at the earliest possible stage of the environmental assessment process so that they may be considered, investigated and, where appropriate, addressed by the applicant, specialists and competent authority before a decision is taken. The raising of issues for the first time on appeal may therefore diminish the utility and effectiveness of the public participation process and may deprive the decision maker of the benefit of a comprehensive assessment and consideration of those concerns at the application stage. However, neither NEMA nor the Appeal Regulations preclude an appellant from raising a matter on appeal solely because it was not previously articulated during the public participation process. I have therefore not disregarded any ground of appeal on that basis alone and have considered the substance of the issues raised on their merits.
- 2.4.49 I am mindful of the constitutional importance of culture, heritage, dignity and identity, and of the need to respect and protect both tangible and intangible cultural heritage. In *Sustaining the Wild Coast NPC and Others v Minister of Mineral Resources and Energy and Others; Natural Justice and Another v Minister of Mineral Resources and Energy and Others* [2026] ZACC 33, the Constitutional Court recognised that the relationship between certain coastal communities and the sea extends beyond purely economic considerations and encompasses livelihoods, cultural practices, ancestral traditions, traditional healing and spiritual life. I have therefore considered the submissions under this ground of appeal on the basis that cultural and spiritual connections to the marine environment are matters of genuine significance

which require careful consideration in environmental decision-making.

2.4.50 I note that a Heritage Impact Assessment (Appendix C5 to the BAR) was undertaken for the proposed seismic survey activities and summarised in section 9.3.3 of the BAR. The study acknowledges that a large section of the affected communities not only view themselves as small-scale fishers, but also as indigenous people who are intrinsically linked to the ocean and the land they have lived on for centuries. It states that the resurgence movement, through which Khoi and San descendants are reclaiming their identity has, in recent decades, afforded these communities the ability to re-establish their cultural roots and grounding in an ancient landscape. These communities have emphasised that the ocean is important not only as a source of livelihood through fishing, but also for its spiritual significance, including its role as a place of healing and its perceived healing powers for Indigenous communities. The ocean and its resources further play an important role in the history, cultural identity and heritage of these communities.

2.4.51 Community identity and culture are thus strongly linked to the ocean and what it can provide, physically and spiritually. These communities have coexisted with the ocean for generations. This existence has created a culture and heritage that defines their way of living, community, and kinship unique to the West Coast of South Africa. This is evident in community structures, cultural events, and seasonal activities. The specialist acknowledges that culture is more than just the tangible but is also shared beliefs, values, language, traditions, functionality, meaning and community connections. Considering the various values and heritage significance as listed in section 3(3) of the NHRA, the cultural and living heritage associated with the communities and indigenous people along the southwestern and west coast of South Africa holds significant heritage value. It is part of the national estate and is important as a way of life for small-scale fishers, Khoi, and San descendants alike. The physical and spiritual interaction with the ocean and the shorelines through millennia have resulted in a maritimity (a process whereby the sum of cultural adaptations made by coastal populations becomes imbued with meaning) and culture that developed into the cultural fabric they experience today. Through further research, the significance of such intangible and living cultural heritage features can potentially have a combined heritage grading of

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Grade II or even Grade I. However, grading inevitably implies investigating and considering a Provincial or Heritage declaration of significance for a largely intangible cultural heritage.

2.4.52 I note that the Heritage Impact Assessment was informed by:

- Literature Review and initial analysis of the heritage background of the study area.
- Stakeholder engagement as part of the Public Participation Process conducted by the EAP for the application for environmental authorisation. These public meetings were attended by a heritage specialist to identify heritage themes highlighted by attendees to the meetings. Individuals and groups were then identified to engage with in focused meetings and interviews.
- Data was collated from interviews conducted by the heritage specialist in 2022, 2023 and June 2024 on intangible heritage resources by focussed interviews with identified individuals and cultural group representatives. The aim was to build a database of tangible and intangible cultural heritage that the proposed project could potentially impact.

2.4.53 The background research and initial public participation have shown that the affected communities are largely linked to subsistence and small-scale fisheries along the west coast of the Western and Northern Cape Provinces of South Africa. These communities have expressed their concerns about the effect that the proposed 3D reconnaissance project will have on the fishing stock, which they believe will ultimately impact their livelihoods. They also do not place much faith in the findings of the scientific fishing stock studies for this and other similar projects.

2.4.54 The public meetings and focused discussions with communities and their constituents have shown that they are struggling economically due to decades of turmoil in the fishing industry, which has been plagued by the closing of fish processing plants, fishing licence and quota issues, and diminishing catches due to environmental and industrial impacts, to name a few.

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This economic downturn leads to social challenges within these communities. Foremost are poverty, loss of social fabric, substance abuse, teenage pregnancies, and violence. In all the interviews, the above issues were raised as central to their social existence and community experience.

- 2.4.55 In section 10.2 of the Heritage Impact Assessment, the specialist concludes that the scientific studies (the Marine Biodiversity Assessment and Specialist Fisheries Assessment) conducted for the application for environmental authorisation identified impacts on fishing stock as low for all species. By inference, a potential impact on fishing yield could be expected and thus potential economic impact on communities due to reduced caught fish volumes. The recommended mitigation measures, as listed in the various specialist reports, focus on reducing impacts on fish species and the projected reduction of the impact on the commercial and small-scale fishery catch yield. These mitigation measures should then indirectly reduce the potential negative impacts on the communities' cultural heritage. The pre-mitigation impact on heritage resources is rated as medium significance. The potential residual impact on heritage resources, with mitigation measures from the scientific studies, is projected as low significance with a medium confidence factor.
- 2.4.56 Cumulative impacts are considered in section 9.2 of the Heritage Impact Assessment, drawing on the cumulative impact assessments in the Marine Biodiversity Assessment and Specialist Fisheries Assessment (Appendix C2 and C3 to the BAR, respectively). The specialist finds that at this stage, cumulative impacts are purely speculative. The potential for the future increase in cumulative impacts due to current and future seismic surveys and the potential for future Oil and Gas production cannot be excluded, but is not quantifiable at this stage for cultural heritage.
- 2.4.57 The Heritage Impact Assessment recommends mitigation measures, based on the UNESCO Intangible Cultural Heritage (ICH) guidelines, aimed at safeguarding the cultural heritage of the small-scale fishers and cultural groupings within the influence of the project. These mitigation measures were also presented for implementation during the original heritage assessments undertaken for the 2022 application for environmental authorisation, and are as

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follows:

- Re-assess post-project the potential effects on the identified communities and their intangible cultural heritage. This will require consideration of the socio-economic baseline developed during the previous survey and this environmental impact process. Based on the outcomes, provide resources and support to enhance the mitigation capacity of communities' intangible cultural heritage by fostering dialogue, mutual understanding and reconciliation between and within communities.
- Based on the outcomes, provide resources and support for communities to develop and undertake safeguarding measures or plans to enhance the mitigation capacity of their intangible cultural heritage by fostering dialogue, mutual understanding and reconciliation between and within communities.
- Additional to the above the recommendations as proposed by Boswell et al (2023) should be implemented:
 - It is suggested that particular proposals be put forth to the cross-sectoral and conventional leadership group, to seek rituals or events that could potentially reduce the adverse cultural consequences of the planned activities on cultural heritage.
 - Dedicated resources should be set aside for consultations and the proposed ritual/event, as these may not be once-off ritual processes even if the prospecting operations are short-term.
 - Undertakings ought to be put in place to visibly demonstrate appreciation for regional cultural perspectives, and to work towards realising the indigenous population's entitlement to human dignity, as highlighted by both the Constitution of the Republic of South Africa, 1996, the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and the Protection, Promotion, Development and Management of Indigenous Knowledge Act, 2019 (Act No. 6 of 2019).

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- Any shipwrecks or pieces thereof noted during the survey must be shared with the SAHRA Maritime and Underwater Cultural Heritage (MUCH) Unit for inclusion into the national database.

- 2.4.58 The specialist states that considering the assessment based on the fieldwork findings and the scientific studies relating to the impact on fisheries, it is of the opinion that the proposed project's impact on tangible and intangible cultural heritage resources and practices can be mitigated through the implementation of the recommendations in the Heritage Impact Assessment.
- 2.4.59 The recommendations by the heritage specialist are incorporated in section 13.7 of the EMPr, which requires the holder of the environmental authorisation to comply with all the conditions of the environmental authorisation, including the EMPr.
- 2.4.60 I have also noted that the Social Impact Assessment (Appendix C4 to the BAR, the findings of which are summarised in section 9.3.4 of the BAR) assessed the impacts of the proposed activity on sense and spirit of place, perceived impacts on livelihoods, further marginalisation of vulnerable groups, uncertainty, community expectations and social unrest. Overall, these impacts were assessed as being of medium significance both before and after the implementation of mitigation measures. The mitigation measures recommended in the Social Impact Assessment have been incorporated into section 13.6 of the EMPr.
- 2.4.61 In addition, I have already found (under the third ground of appeal) that a Specialist Fisheries Assessment was undertaken to assess the potential impacts (including the cumulative impacts) of the proposed activity on the fishing industry (Appendix C3 to the BAR). The findings of that assessment were also summarised in section 9.3.2 of the BAR. That study concludes that, with the implementation of the project controls and mitigation measures, the residual impact due to the proposed survey and seismic noise is considered to be of low negative significance for large pelagic longline sector. There is no impact expected on the demersal trawl, midwater trawl, demersal longline, small pelagic purse-seine, tuna pole-line, linefish, west coast rock lobster, netfish and small-scale fishing sectors. Although it is unlikely

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that concurrent seismic surveys would be undertaken in the same area during the same survey window, three seismic surveys of regional extent, undertaken simultaneously, could be expected to result in an impact of medium negative significance on the large pelagic longline sector, both with and without the application of mitigation measures.

- 2.4.62 A central theme emerging from the Heritage Impact Assessment is that much of the asserted cultural and spiritual harm is linked to concerns regarding the future availability of marine resources and the sustainability of fishing livelihoods. To the extent that the alleged cultural impacts depend upon significant adverse impacts on fisheries and fish stocks, I have already found under the previous ground of appeal that such impacts are expected to be low following mitigation. This finding is relevant to the assessment of the likely extent of any indirect impacts on intangible cultural heritage.
- 2.4.63 As noted under the second ground of appeal, the applicant also undertook a Marine Biodiversity Assessment, which found the impacts on marine fauna to be of Low/Negligible Significance (as indicated in section 5.1 of that specialist report and section 9.3.1 of the BAR).
- 2.4.64 With regard to the ninth and tenth appellants' contentions that the heritage specialist's mitigation measure (set out in the EMPr) requiring the re-assessment of impacts post-project is flawed, and that it irrationally reduces the pre-mitigation significance from Medium to Low post-mitigation, I note from the responses of the applicant and competent authority that the recommendation by the applicant's heritage specialist to re-assess the impact post-survey is intended to further mitigate and monitor the effects of the activity on the identified communities, their intangible cultural heritage and related socio-economic impacts. The reassessment is intended to serve as a check-and-balance or follow-up monitoring mechanism to enhance mitigation capacity and to assist the applicant and affected communities in understanding how the authorised activity has impacted these communities.
- 2.4.65 The Heritage Impact Assessment further states that, based on the outcomes of the reassessment, additional resources and support must be provided to enhance the mitigation

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capacity of communities in relation to their intangible cultural heritage, including by fostering dialogue, mutual understanding and reconciliation between and within communities. I note that a similar verification and follow-up consultation was undertaken by the applicant following the previous 2023/2024 survey, and that no significant issues were raised in relation to the impacts of that survey on intangible heritage. I further note that this mitigation measure is proposed in addition to the other mitigation measures recommended by the heritage specialist, that these measures were informed by the UNESCO ICH guidelines, and that, taken together, they are anticipated to reduce the overall heritage impacts of the proposed activity from Medium to Low significance post-mitigation. This applicant has clarified that this mitigation measure requiring the re-assessment of the impact post-survey is in addition to consultation undertaken pre-survey and for the duration of the activity. In addition, the specialist indicates in section 10.2 that the mitigation measures recommended in the other specialist assessments undertaken for the environmental authorisation application should also indirectly reduce the potential negative impacts on the communities' cultural heritage.

2.4.66 I accept that a post-survey reassessment, considered in isolation, does not prevent or avoid an impact that may already have occurred. However, I do not understand the Heritage Impact Assessment to rely solely on post-survey reassessment as the basis for reducing the significance rating from medium to low. The significance rating must be understood in the context of the assessment as a whole, including the public participation process, focused community engagement, ongoing consultation, community engagement protocol, grievance mechanisms, fisheries mitigation measures, the mitigation measures recommended in the Social Impact Assessment, and the specialist conclusion that impacts on fisheries and marine fauna are expected to be low following mitigation. The post-survey reassessment therefore operates as an additional adaptive management and monitoring measure rather than the sole mechanism relied upon to mitigate cultural heritage impacts.

2.4.67 In respect of the tenth appellant's contentions that the concerns raised by coastal communities about their cultural and heritage associations with the ocean during previous survey have not been considered in the final BAR or Heritage Impact Assessment, I am satisfied that the affected communities concerns were considered in the Heritage Impact

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Assessment through the verification and follow-up consultation conducted for the previous 2023 / 2024 survey, as well as through the focused interviews conducted by the heritage specialist with identified individuals and cultural group representatives in 2022, 2023 and June 2024, to build a database of tangible and intangible cultural heritage that the proposed project could potentially impact. These interviews informed the assessment. As I have indicated above, the assessment methodology for the Social Impact Assessment also drew on the public participation records provided by the EAP, as well as on ongoing consultation with affected stakeholders since 2022. This included workshops initiated by the applicant with project-affected communities, during which the process was explained and the communities were afforded an opportunity to indicate their preferred methods of consultation. One of the outcomes of this ongoing consultation resulted in the community engagement protocol that was developed in 2024 with the input of the West Coast communities, which aims to address the impact on vulnerable groups and uncertainty, and also has an educational component. I note further that small scale fishing communities have also been consulted as part of the Public Participation Process for the application for environmental authorisation.

2.4.68 I also take note of the applicant's submission that its previous survey within the current project area, undertaken pursuant to its 2022 environmental authorisation, did not result in any material adverse effects on the receiving environment. I note that the eighth appellant has not submitted any evidence to support its averment that the previous seismic surveys had a negative impact on fishing.

2.4.69 In respect of the appellants' contentions that the Constitution requires government to consider international legal frameworks and policies that South Africa is party to, that the competent authority failed to meet its obligations to protect the rights of I&AP communities protected under various international and domestic laws, including the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and section 15 of the Constitution (which provides that everyone has the right to freedom of conscience, religion, thought, belief and opinion), I note that Chapter 4 of the final BAR identified the legislation and policy context applicable to the activity and considered how the proposed activity complies with and responds thereto, in accordance with the requirements of paragraph 3(1)(e) of Appendix 1 to

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the 2014 EIA Regulations.

- 2.4.70 The Heritage impact assessment also acknowledges that indigenous populations are entitled to human dignity, as highlighted by both the Constitution of the Republic South Africa, 1996, the National Heritage Resources Act, 1999 and the Protection, Promotion, Development and Management of Indigenous Knowledge Act, 2019. Moreover, the assessment bases its recommendations on the UNESCO Intangible Cultural Heritage (ICH) guidelines.
- 2.4.71 I have considered the appellants' submission that the competent authority failed to have regard to their rights under the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). I note that UNDRIP is a non-binding international instrument. This does not, however, render it irrelevant to the consideration of the cultural rights and interests of Indigenous communities. In *Gonggose and Others v Minister of Agriculture, Forestry and Fisheries and Others*,⁶⁵ the Supreme Court of Appeal recognised the relevance of UNDRIP in interpreting and giving effect to customary rights and cultural interests protected under the Constitution.
- 2.4.72 I further note that UNDRIP was not specifically referred to in the Heritage Impact Assessment undertaken as part of the EIA process. I am, however, not satisfied that the absence of an express reference to UNDRIP establishes that the cultural rights and interests relied upon by the appellants were not considered. The Heritage Impact Assessment assessed both tangible and intangible cultural heritage impacts associated with the proposed seismic survey. In respect of marine cultural heritage, the assessment considered, among others, fishing, foraging and seafood practices; environmental knowledge and stewardship; spiritual beliefs and rituals; sense of place; and social practices and artistic expression. It also considered non-marine cultural heritage, including traditional food and beverages; environmental knowledge; social practices and rituals; sense of place; language and oral traditions; and traditional music, sport and games. The impacts on archaeological resources

⁶⁵ *Gonggose & others v Minister of Agriculture, Forestry & Fisheries and others; Gonggose & others v State & others* (1340/16 & 287/17) [2018] ZASCA 87 (at para 58).

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and underwater and maritime heritage were also considered. The Social Impact Assessment further considered impacts on sense and spirit of place, perceived impacts on livelihoods, the marginalisation of vulnerable groups, uncertainty, community expectations and social unrest.

2.4.73 Having considered the Heritage Impact Assessment, the Social Impact Assessment and the other information before me, I am satisfied that the substance of the cultural and heritage interests asserted by the appellants was identified and considered in the Heritage Impact Assessment and decision-making process.

2.4.74 To the extent that the appellants contend that their opposition to the proposed activity or the withholding of their consent is determinative of the application, I am unable to agree. Neither NEMA nor the 2014 EIA Regulations establish a requirement that an environmental authorisation may only be granted with the consent of interested and affected parties. What is required is that affected communities be afforded a meaningful opportunity to participate, that their concerns be properly considered, and that the competent authority evaluate the application in accordance with the applicable legal framework. I am satisfied that those requirements were met in this matter.

2.4.75 In respect of the ninth appellant's contention that the precautionary approach mandates maintaining the status quo unless there is sufficient information to realistically determine impacts, I am unable to agree with the appellant's interpretation. NEMA requires that consideration be given to the most risk averse approach that avoids harms to the environment and where risk cannot be avoided, that such risk be mitigated. It is common cause that there are limits to current knowledge regarding the consequences of decisions and actions associated with the proposed project. However, the impacts and potential risks of the proposed activity to the environment, the probability of these impacts occurring, and the extent to which these potential impacts can be avoided, managed or mitigated, were assessed in the BAR and the specialist reports. The EAP and specialists adopted a precautionary approach to the assessment of potential impacts, particularly in their consideration of the worst-case scenario. The BAR and specialist reports also described any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed in those reports, in accordance with the requirements of

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paragraph 3(1)(o) of Appendix 1 of the 2014 EIA Regulations. I am accordingly persuaded that the competent authority applied a “precautionary approach” in light of the limits to current knowledge regarding the consequences of the decision to grant the environmental authorisation and the subsequent actions flowing from that decision.

2.4.76 Having considered the findings of the Heritage Impact Assessment, I am satisfied that the potential impacts on environmental receptors, including small scale fishers and indigenous persons' tangible and intangible cultural heritage, the communities' relationship with the marine environment, their spiritual beliefs and practices, environmental knowledge, traditional practices, sense of place and socio-economic connection with the sea, have been adequately assessed and mitigated to minimise such impacts.

2.4.77 This ground of appeal is accordingly dismissed.

2.5 FIFTH GROUND OF APPEAL: INADEQUATE PUBLIC PARTICIPATION PROCESS

Appellants' Submissions

The third, fourth and eighth appellants raise this issue as a ground of appeal:

2.5.1 The third and fourth appellants submit that the process of public participation was inadequately advertised and failed to facilitate a comprehensive understanding of the procedures and potential impacts among the affected communities. This lack of effective engagement undermines the legitimacy of the approval process.

2.5.2 The eighth appellant avers that the consultation process was not done correctly. They do not believe that the information that was presented is accurate.

APPLICANT'S RESPONSE

In response to this ground of appeal, the applicant submits as follows:

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- 2.5.3 The third and fourth appellants make a bold and unsubstantiated statement which is simply not supported by the facts and the appellants produce no evidence to support such statement. An extensive, detailed and meaningful Public Participation Process (PPP) was undertaken for the Proposed Activities and is set out in Section 7 of the BAR and presented in detail in Appendix B.
- 2.5.4 It should be noted that the eighth appellant was pre-identified and registered as an I&AP at the outset of the public participation process conducted for the Proposed Activities. No comments were received from the eighth appellant during the entire Basic Assessment process. Thus, failing to provide an opportunity for the EAP and/or applicant to consider their inputs, record their concerns and respond to these prior finalisation and submission of the final report. The appellant, having elected not to participate in the commenting process, despite being specifically invited to do so, has now chosen to raise grounds of appeal which could easily have been addressed had it taken up the invitation to engage with the EAP, applicant and specialists during the comments and responses period. While the EAP and applicant are required to create meaningful opportunities for consultations, our courts have held that meaningful consultation is a two-way communication and accordingly an obligation rests on both parties to communicate (refer *Maqoma v Sebe No and Another*⁶⁶). Accordingly, the obligation to consult meaningfully does not only rest with the EAP and applicant but also with the appellant and the appellant has failed on this obligation.
- 2.5.5 Nothing raised by the appellants has impugned the transparent, comprehensive and inclusive nature of the public consultation and participation process as fully detailed in Section 7 of the BAR and presented in detail in Appendix B.
- 2.5.6 An environmental authorisation was granted to the applicant on 21 October 2024 in accordance with section 24 of NEMA and the 2014 EIA Regulations, 2014 (EIA Regulations). The environmental authorisation authorises the applicant to undertake three-dimensional seismic survey activities in an area off the west coast of South Africa, approximately 256

⁶⁶ *Maqoma v Sebe No and Another* 1987 (1) SA 483 (CK) at paragraph 426.

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kilometres offshore St Helena Bay, extending north along the western coastline to approximately 220 kilometres offshore Hondeklip Bay. The applicant conducted a prior survey within the Reconnaissance Permit Area approximately 9 months ago (2022 EA), which survey was completed by the applicant and has not resulted in any material adverse effects on the receiving environment. The new survey area will also exclude an area of approximately 9000km² from full fold acquisition as this area has already been surveyed in the previous survey, which was completed on 28 April 2024. All potential impacts which were required to be assessed for purposes of the grant of an environmental authorisation for the proposed activities have been thoroughly and adequately assessed by the independent EAP and the public consultation process was a transparent, comprehensive and inclusive process which complied with and exceeded the legal requirements set out in the NEMA, the 2014 EIA Regulations and the Public Participation Guideline in terms of 2014 EIA Regulations.

2.5.7 The PPP was undertaken in accordance with, complied with and exceeded the legal the requirements of the NEMA, the 2014 EIA Regulations, and the Public Participation Guideline in terms of the 2014 EIA Regulations (Public Participation Guidelines), and in line with the principles of Integrated Environmental Management (IEM). IEM implies an open and transparent participatory process, whereby stakeholders and other I&APs are afforded an opportunity to comment on the proposed activities and have their views considered and included as part of project planning. A high-level summary of PPP undertaken includes the following:

2.5.7.1 An initial I&AP database was compiled based on known key I&APs and stakeholder databases available from existing sources and from the previous I&AP database for the 2022 environmental authorisation.

2.5.7.2 An initial notification and call to register for a period of 30 days was circulated to all potential I&APs in April 2024.

2.5.7.3 Initial newspaper advertisements placed in Cape Times, Sentinel News, Weslander, Ons Kontrei, Die Plattelander as well as in the National Gazette.

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- 2.5.7.4 A1 Correx site notices in English, Afrikaans and IsiXhosa were placed at 100 locations along the West Coast, stretching from Hout Bay to Port Nolloth in April 2024.
 - 2.5.7.5 A3 posters in English, Afrikaans and IsiXhosa were placed at local public gathering places at various onshore locations, mainly in Cape Town.
 - 2.5.7.6 An initial round of Radio advertisements (KFM, Radio NFM, Radio West Coast and Radio Namakwaland) were published in April 2024.
 - 2.5.7.7 Notification regarding the availability of the BA Report for public review and the venues and times for planned public meetings.
 - 2.5.7.8 The BAR was made available for public review from 21 June 2024 to 22 July 2024 both online (EIMS Website) and offline (various Libraries along the West Coast).
 - 2.5.7.9 A series of public meetings with I&APs were held at various locations along the West Coast from Port Nolloth to Cape Town.
 - 2.5.7.10 A virtual meeting was also held with I&APs who could not attend the physical meetings.
- 2.5.8 It must be noted that the entire PPP was undertaken in the three most common languages in the area (English, isiXhosa and Afrikaans). In addition, non-technical summaries were made available to I&APs which went beyond the executive summary in detail and descriptions. Furthermore, a social facilitator and social specialist were part of the project team during the public participation process. It should also be noted that the EAP specifically consulted with the small-scale fishers and other community members and have given serious consideration to the comments and inputs from the local communities.

PASA'S RESPONSE

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In their comments to this ground of appeal, PASA submits that:

2.5.9 The project was advertised in the following manner during the public participation process:

2.5.9.1 Notifications in English, Afrikaans and isiXhosa were distributed to pre-identified I&APs through registered mail, fax and email on 19 April 2024.

2.5.9.2 Newspaper advertisements were published in five newspapers i.e., Cape Times (English and IsiXhosa), Sentinel News (English and Afrikaans), Weslander (English and Afrikaans), Ons Kontrei and Die Platterlander (English and Afrikaans) on 18 and 19 April 2024 and between 20 June and 28 July 2024.

2.5.9.3 The proposed project was advertised in the national government gazette on 26 April 2024 and 21 June 2024.

2.5.9.4 Site notices written in English, Africans and isiXhosa were placed at 100 onshore locations along the west coast stretching from Hout Bay to Port Nolloth from 22 to 26 April 2024.

2.5.9.5 Radio advertisements were published in four radio stations i.e., KFM (English), Radio NFM (English and Afrikaans, and isiXhosa), Radio West Coast (English and isiXhosa) and Radio Namaqualand (English and Afrikaans) between 15 to 19 April 2024.

2.5.10 The public participation process offered open day meetings, where the background of the project, legislative requirements, the undertaken assessment process (BA), specialist assessments, potential impacts, timeframes and stakeholders' rights were briefly described. Stakeholder were also provided with more information displaced in posters plugged on the meeting venue walls. Stakeholders were also provided with an opportunity to ask more questions or engage with various experts involved in the project. The Department was satisfied

with the public participation process undertaken, as it meets all the requirements of NEMA.

EVALUATION (Reasons for Decision)

- 2.5.11 The central issue requiring determination is whether the public participation process undertaken in support of the application for environmental authorisation was meaningful and effective. The issue is not simply whether the applicant complied with the requirements contemplated in Chapter 6 of the 2014 EIA Regulations. Rather, the inquiry is whether, viewed holistically, the process afforded interested and affected parties a reasonable and meaningful opportunity to participate in the decision making process. In this regard, I have considered whether, holistically viewed, the process afforded interested and affected parties a reasonable opportunity to understand the proposed activity, to consider its potential implications, and to place their views before the applicant, specialists and ultimately the competent authority.
- 2.5.12 Public participation occupies an important place within the environmental governance framework established by NEMA. Section 2(4)(f) of NEMA provides that *“the participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured”*.
- 2.5.13 The purpose of public participation is therefore not merely to notify affected persons of a proposed activity and to provide them with the documents in support thereof. It is intended to facilitate informed participation in decision-making and to ensure that information, concerns, objections, local knowledge and competing interests are brought to the attention of the decision-maker before a decision is taken. The public participation process must afford people the opportunity to express their views on matters affecting them. This principle was reiterated by the Constitutional Court in *Fuel Retailers Association of Southern Africa v Director General Environmental Management Department of Agriculture and Conservation*

*and Environment Mpumalanga Province.*⁶⁷

- 2.5.14 The adequacy of a public participation process must be assessed contextually. Compliance with the procedural requirements of the 2014 EIA Regulations is an important consideration, but it is not in itself determinative of whether participation was meaningful and effective. The enquiry is whether the process, considered as a whole, was reasonably capable of bringing the proposed activity and its potential impacts to the attention of affected communities and creating a genuine opportunity for engagement.
- 2.5.15 Before I proceed any further, I must clarify that an obligation to consult demands only that the person who is entitled to be consulted, be afforded an effective and meaningful opportunity to exercise that right. It is only if that right is denied that the obligation to consult is breached. This principle was reiterated by the Supreme Court of Appeal in the case of *Minister of Home Affairs and Others v Scalabrini Centre and Others*.⁶⁸
- 2.5.16 I have considered the allegations raised by the appellants together with the applicant's response, the Public Participation Report contained in Appendix B to the BAR, and the documentary record as a whole. I have also considered the requirements of regulations 40 to 44 of the 2014 EIA Regulations.
- 2.5.17 The documentary record demonstrates that the applicant implemented an extensive public participation process. Potentially affected persons were notified through direct written notification, newspaper advertisements, radio advertisements, site notices, posters and publication in the Government Gazette. Site notices were erected across a broad geographic area stretching from Hout Bay to Port Nolloth. Information was disseminated in English, Afrikaans and isiXhosa. Interested and affected parties were afforded the opportunity to register, obtain information, attend meetings, review reports and submit comments.
- 2.5.18 Importantly, the process was not confined to passive notification measures. The BAR and

⁶⁷ *Fuel Retailers Association of Southern Africa v Director General Environmental Management Department of Agriculture and Conservation and Environment Mpumalanga Province* 2007 (6) SA 4 (CC) at para 76.

⁶⁸ *Minister of Home Affairs and Others v Scalabrini Centre and Others* 2013 (6) SA 421 (SCA) para 43.

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Public Participation Report demonstrate that public open days were conducted at multiple locations along the West Coast, a virtual engagement opportunity was provided, non-technical summaries of the BAR were prepared in multiple languages, and social specialists and facilitators participated in the engagement process. Particular effort was made to engage coastal communities and small-scale fishers likely to be affected by, or interested in, the proposed activity.

- 2.5.19 I further note that the information made available to interested and affected parties included descriptions of the proposed activity, the environmental assessment process, specialist studies, potential impacts and mitigation measures. The process therefore sought not merely to announce the project, but to provide sufficient information to enable meaningful participation.
- 2.5.20 The comments received from interested and affected parties were recorded, considered and responded to, and those responses were incorporated into the final documentation submitted to the competent authority. The Public Participation Report reflects that concerns relating to fisheries, marine ecology, heritage, livelihoods, climate change and socio-economic impacts were all placed before the decision-maker and considered as part of the environmental assessment process.
- 2.5.21 Having regard to the totality of the process undertaken, I am not persuaded that the public participation process was inadequate or ineffective. The appellants have not identified any category of affected persons that was excluded from participation, any material information that was withheld from the public, any significant barrier that prevented participation, or any respect in which they were denied a reasonable opportunity to understand and comment on the application. To the contrary, the evidence before me demonstrates sustained and multi-faceted efforts to notify, inform and engage potentially affected persons.
- 2.5.22 While not all interested and affected parties elected to participate during the public participation process, the obligation resting on the applicant is to provide a reasonable opportunity for participation. The fact that a person elects not to utilise that opportunity does not, without more, establish that the process was deficient.

- 2.5.23 I am accordingly satisfied that, viewed holistically, the public participation process was not merely procedurally compliant but was reasonably capable of facilitating meaningful and effective participation by interested and affected parties. The process met the requirements of the 2014 EIA Regulations and substantially advanced the participatory objectives contemplated in section 2 of NEMA.
- 2.5.24 The eighth appellant's assertion that the information presented to the public was inaccurate is unsupported by any evidence identifying specific inaccuracies, omissions or misrepresentations. In the absence of such evidence, there is no basis upon which to conclude that the information provided to interested and affected parties was materially misleading or inadequate.
- 2.5.25 This ground of appeal is dismissed.

2.6 **SIXTH GROUND OF APPEAL: COMPETENT AUTHORITY CONFLICT OF INTEREST, INADEQUATE ENVIRONMENTAL ASSESSMENT PROCEDURES, AND FAILURE TO COMPLY WITH MANDATORY PROCEDURAL REQUIREMENTS**

Appellants' Submissions

The second, third, fourth, ninth and tenth appellants raise this issue as a ground of appeal:

- 2.6.1 The second appellant submits that the environmental authorisation approval process is fundamentally flawed, as the competent authority (DMPR) is acting as judge and jury and secondly is inadequately qualified to evaluate the applications.
- 2.6.2 The third and fourth appellants submit that the authorisation process utilised a Basic Assessment process instead of a comprehensive Environmental Impact Assessment process. This approach is insufficient for addressing the complexities and sensitivities of the marine environment, especially in a context involving seismic activities with potentially far-reaching

ecological impacts.

- 2.6.3 The ninth appellant contends that the decision of the CA fails to account for South Africa's obligations under the Conservation of Migratory Species (CMS) Agreement, to which the country has been a contracting party since 1 April 2002. Specifically, under Resolution 12.14 of the CMS, South Africa is mandated to conduct a comprehensive and thorough Environmental Impact Assessment (EIA) before permitting any noise-emitting activities that may harm marine life.
- 2.6.4 In this case, however, the decision is based on a BAR rather than a full EIA. As a result, PASA's acceptance of the environmental report fails to meet South Africa's international obligations under the CMS Agreement, thereby contravening the country's duty to ensure adequate environmental protection for migratory species.
- 2.6.5 The tenth appellant submits that section 63(1) of NEM:ICMA requires the CA to take account of specific factors when deciding whether or not to grant an environmental authorisation under NEMA for "coastal activities". By virtue of this section, the CA ought to have appreciated that in deciding whether to grant an environmental authorisation or not, he or she was required to consider additional factors specified in section 63 of NEM:ICMA⁶⁹ and whether or not the proposed project "would be contrary to the interests of the whole community". This required an eco-centric consideration of the impacts of the proposed project in an area that must be afforded a particularly high standard of protection given the natural functioning of the dynamic coastal processes.
- 2.6.6 The CA asserts that one of the reasons that led to him granting the environmental authorisation is that the requirements in section 63 of NEM:ICMA were adequately addressed in the final BAR.⁷⁰ However, the final BAR contains no evidence that the factors set out in section 63 were considered or assessed. Neither the final BAR nor the CA's reasons for the decision make reference to section 12 and 21 of the NEM:ICMA.

⁶⁹ S 63(1)(c), s 63(1)(h)(i), s 63(1)(h)(iv) and 63(1)(i).

⁷⁰ Par 3.5. of the Reasons for the decision.

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- 2.6.7 Properly considered, the CA's decision was made without any factual investigation as required by section 63 of NEM:ICMA, including a determination of whether the coastal public property and the coastal protected zone would be impacted, and if so, to what extent is the proposed activity consistent with the goal of establishing or protecting those areas.⁷¹ Furthermore, the management plans which are relevant in these areas, like the Coastal Management Program for the Western Cape Province have not been taken into consideration.
- 2.6.8 The final BAR does not consider the interests of the affected human and non-human communities in any collective way.
- 2.6.9 Consequently, the interests of the whole community had not been presented to the decision-maker and without evidence of specific consideration of these interests in their decision to grant environmental authorisation, the CA has not evaluated these interests in their decision to grant environmental authorisation.
- 2.6.10 Additionally, neither the final BAR nor the CA's decision indicate that the applicant's compliance with its previous permits and environmental authorisation have been considered, as required by section 63.
- 2.6.11 The project area overlaps with several licence blocks, in which exploration activities have been authorised, or are at advanced stages of environmental impact assessment processes. This includes Shell Offshore Upstream South Africa B.V, TotalEnergies's Deep Water Orange Basin project, and Africa Oil's Block 3B/4B project. Additionally, various other projects are proposed in near and adjacent blocks. The tenth appellant contends that none of the cumulative impacts associated with these exploration and production projects have been considered.

APPLICANT'S RESPONSE

⁷¹ Section 63(1)(c) of the NEM:ICMA.

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In response to this ground of appeal, the applicant submits as follows:

- 2.6.12 Section 24(2) of NEMA empowers the Minister and any MEC, with the concurrence of the Minister, to identify activities which must be considered, investigated, assessed and reported on to the competent authority responsible for granting the relevant environmental authorisation. Petroleum activities officially became governable under the NEMA 2014 EIA Regulations in December 2014 with the competent authority identified as the DMPR. DMPR as the designated competent authority for the application, was determined to have the capacity and/or power to perform the designated function for reviewing and deciding on the application.
- 2.6.13 The competent authority considered the relevant factors including the findings of the environmental assessment (including but not limited to proximity to identified marine sensitive environments, impacts on marine environment, socio-economic impacts, potential pollution, the results of the public participation process, and the need and desirability of the proposed activity) when deciding on this application. The reasons for the decision are indicated in Appendix 1 of the environmental authorisation, which was sent to all registered I&APs.
- 2.6.14 The third, fourth and ninth appellants are not correct in law. The assertion that an EIA process should have been followed, as opposed to a Basic Assessment process, is incorrect in law.
- 2.6.15 The process followed for any application for an environmental authorisation is guided by the EIA Regulations. Under NEMA, certain activities that are considered likely to have detrimental environmental impacts require that the person intending to undertake those activities obtain an environmental authorisation which authorises those specific activities prior to their commencement. The 2014 EIA Regulations contain lists of these activities in three EIA Listing Notices (EA Listed Activities), as well as the procedures to be followed to obtain an environmental authorisation. Listing Notice 1, Listing Notice 2 and Listing Notice 3 published in terms of the 2014 EIA Regulations⁷² identify the activities for which a "Basic Assessment" process, or alternatively a full Scoping and Environmental Impact Assessment process ("EIA") must be undertaken pursuant to an application for an environmental authorisation. The

⁷² Government Notice R983, R984, and R985 in Government Gazette 38282 of 4 December 2014.

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process to be undertaken will depend on the specific listed activities which are triggered, with listed activities in Listing Notices 1 and 3 requiring a Basic Assessment and those in Listing Notice 2 requiring an EIA. Regulations 19 and 20, which form Chapter 4, Part 2 of the EIA Regulations, govern Basic Assessment processes and requirements.

- 2.6.16 The BAR was compiled in accordance with the 2014 EIA Regulations, as indicated in Section 1.1 of the BAR. A summary of the report structure, and the specific sections that correspond to the applicable regulations, is provided in Table 2 of the BAR. Table 4 of the BAR identifies the Listed Activities triggered by the Proposed Activities and consequently requires authorisation prior to commencement. In this instance, the Proposed Activities trigger Listed Activity 21(b) of Listing Notice 1, and as such a Basic Assessment was required to be followed, and was followed, in the application for the environmental authorisation by the applicant. It also should be noted that the CMS agreement and associated guidelines make no distinction between a Basic Assessment, EIA and a full Scoping and EIA process. The BAR is considered to be a comprehensive and thorough assessment related to the potential impacts of the proposed seismic survey.
- 2.6.17 The report further indicates in Section 4.3 that the objective of the EIA Regulations is to establish the procedures that must be followed in the consideration, investigation, assessment and reporting of the listed activities that are triggered by the proposed project. The purpose of these procedures is to provide the competent authority with adequate information to make informed decisions which ensure that activities which may impact negatively on the environment to an unacceptable degree are not authorised, and that activities which are authorised are undertaken in such a manner that the environmental impacts are managed to acceptable levels.
- 2.6.18 The stipulated Basic Assessment process was supported by detailed scientific studies on the noise, marine environment, fisheries, socio-economic and heritage themes to assess the environmental conditions, potential impacts and provide adequate mitigation measures for the proposed activities on the receiving environment attached as Appendices C1 – C5 of the BAR. The findings of these studies are presented on Sections 8, 9 and 11 of the BAR. It is crucial to

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note that the activities for this application are short-term, and if viewed in isolation considering only technical risks as discussed in various specialist reports conducted as part of the environmental authorisation process, the impacts will be low to negligible after mitigation is applied. It must also be noted that in addition to subjecting the Marine and Fisheries study for the public review and commenting, the studies were also subjected to peer review (Appendices C2.1 and C.3.1 of the BAR) with the primary objective of ensuring accuracy and completeness of the provided information and interpretations of it. The Marine Biodiversity external peer review (included in Appendix C2) found that the marine biodiversity and ecosystem services assessment is comprehensive, detailed, logically constructed, and consistent in its approach to the impact analyses. It is based on current information and scientific understanding of the various effect levels on the defined receptors and, for acoustic effects, supported by sound transmission loss modelling. No gaps have been identified in this review and it is considered fit for purpose. The Fisheries external peer review (included in Appendix C3) found that the specialist assessment by CapMarine is highly commendable. It was undertaken clinically and with due diligence. The external peer review concurs with all impact significance levels proposed. In addition, an extensive and meaningful consultation process was undertaken for the project.

- 2.6.19 The applicant denies the assertion by the ninth appellant that the decision to grant the environmental authorisation contravenes any of South Africa's international obligations. The potential impacts of the proposed activities on marine ecology have been comprehensively assessed in the BAR, which is compliant with all requisite legislation.
- 2.6.20 With regard to the tenth appellant's submissions, the NEM:ICMA is specifically mentioned in Table 5 of the BAR as additional legislation applicable to the proposed activities. As stated in the BAR, this Act supports the authorisation requirements of NEMA but specifies additional criteria for regulating activities or developments (Section 63) and provides for pollution control within the coastal zone (Sections 69 to 73), where the coastal zone includes the Exclusive Economic Zone defined in the Maritime Zone Act.
- 2.6.21 The BAR does consider the factors specified in Section 63 of the ICMA. In terms of the

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NEM:ICMA the coastal protection zone consists of—

- (a) land falling within an area declared in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), as a sensitive coastal area within which activities identified in terms of section 21(1) of that Act may not be undertaken without an authorisation;*
- (b) any part of the littoral active zone that is not coastal public property;*
- (c) any coastal protection area, or part of such area, which is not coastal public property;*
- (d) any land unit situated wholly or partially within one kilometre of the highwater mark which, when this Act came into force—*
 - (i) was zoned for agricultural or undetermined use; or*
 - (ii) was not zoned and was not part of a lawfully established township, urban area or other human settlement;*
- (e) any land unit not referred to in paragraph (d) that is situated wholly or partially within 100 metres of the high-water mark;*
- (f) any coastal wetland, lake, lagoon or dam which is situated wholly or partially within a land unit referred to in paragraph (d)(i) or (e);*
- (g) any part of the seashore which is not coastal public property, including all privately owned land below the high-water mark;*
- (h) any admiralty reserve which is not coastal public property; or*
- (i) any land that would be inundated by a 1:50 year flood or storm event.*
- (2) An area forming part of the coastal protection zone, except an area referred to in subsection (1)(g) or (h), may be excised from the coastal protection zone in terms of section 26.*

2.6.22 Each component of section 63 of the NEM:ICMA is assessed throughout the BAR. Section 4.6 of the BAR presents an overview of NEM:ICMA. This was placed before the CA for consideration and before registered I&APs during the PPP. Accordingly, the CA was empowered with all the relevant information and factors relating to section 63 of NEM:ICMA and the findings of the EIA process (including but not limited to proximity to identified marine sensitive environments, impacts on marine environment, socio-economic impacts, potential pollution, the results of the PPP, and the need and desirability of the proposed activity) in order

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to reach its decision to grant the environmental authorisation.

- 2.6.23 No impacts on public property would be expected due to the location of the survey area. The proposed project area is located between approximately 256 km offshore of St Helena Bay, extending north along the western coastline to approximately 220 km offshore of Hondeklip Bay. Impacts on coastal resources are identified and assessed in the Marine Biodiversity Assessment (Appendix C2 of the BAR) and Fisheries Assessment (Appendix C3 of the BAR).
- 2.6.24 The mitigation measures in the Marine Biodiversity Report have been identified through international literature on mitigation measures imposed elsewhere, and then adapted to suit the local situation and subsequently fine-tuned with input and the assistance of a number of regular and extremely experienced MMOs. These mitigation measures are in the view the EAP and specialists relevant to the application authorised. The appellant does not clearly indicate which additional or specific mitigation measures they would suggest are included.
- 2.6.25 The BAR does describe and consider the interests of the human and non-human communities. A Social Impact Assessment was conducted as part of the BAR (Appendix C5 of the BAR). The findings from the SIA are included in the BAR and the recommendations from the SIA are included in the accompanying EMPr (Appendix E of the BAR). It should also be noted that the EAP specifically consulted with the small-scale fishers and other community members and have given serious consideration to the comments and inputs from the local communities. The BAR specifically notes and considers the views raised in the PPP.
- 2.6.26 The Fisheries Assessment (Appendix C3 of the BAR) found that impacts on the small-scale fishing sector due to seismic noise is considered to be of low negative significance for the large pelagic longline sector (refer to Section 9.3.2 of the BAR). Sound levels for the seismic survey can notionally be expected to attenuate to below levels for behavioural disturbance at a distance of 4 km from the source. The current assessment is that behavioural disturbance to fish could be expected within this range and that catch rates could therefore also be affected. The spatial extent of the impact of seismic source noise emissions on catch rates is expected to be regional, although localised at any one time. The impact is considered to be fully

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reversible and any disturbance of behaviour that may occur as a result of survey noise would be temporary.

- 2.6.27 The independent Environmental Compliance Officer (ECO) audit reports associated with the previous survey have been forwarded to PASA as required and relevant daily reports are available on the applicant's website.
- 2.6.28 The tenth appellant fails to understand that it is the explicit purpose of NEMA itself, and all related environmental legislation whether primary or subordinate, to protect, preserve and conserve the South African ecosystem, living resources, environment and related matters. While the NEM:ICMA deals more explicitly with coastal matters, its ultimate goal is one and the same as that of NEMA. To adopt a different interpretive approach would undermine the core goals of NEMA and the NEM:ICMA, as it would impel decision-makers to apply these laws in ways that are distinct and thus potentially inconsistent with one another. This is all the more important given that these statutes do overlap in relation to the EIA process. Furthermore, the appellant appears to expect the CA to list its consideration of each and every section of the NEM:ICMA and subsection of section 63 of NEM:ICMA in the environmental authorisation decision, failing which on the appellant's version it must be deemed that the CA did not consider or apply itself to the NEM:ICMA properly or at all. This is an unsustainable allegation. There is no legitimate public purpose in compelling decision-makers to list in their decisions each and every detail of each and every section and subsection it considered as authority for having considered such section and subsection in its decision. This would simply be impractical given the vast legislative and regulatory landscape which is taken into account by the decision-maker in reaching its decision. In any event, as it is evident from the BAR that the NEM:ICMA was assessed by the EAP throughout the BAR. Accordingly, the relevant information was before the CA so as to allow it to meet the requirement to consider the NEM:ICMA. The fact that, on the appellant's version, certain factors set out in the NEM:ICMA are recorded in the environmental authorisation decision specifically points to the competent authority having applied its mind to NEM:ICMA, this alongside the range of other factors across other primary or subordinate environmental legislation relative to the environmental authorisation grant decision.

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- 2.6.29 Cumulative impacts are assessed as part of each specialist study and cumulative noise impacts associated with multiple surveys are discussed in section 9.3.5 of the BAR.
- 2.6.30 *"For cumulative effects analysis to help the decision-maker and inform interested parties, it must be limited to effects that can be evaluated meaningfully"* (Information Series 7; Department of Environmental Affairs and Tourism (DEAT); 2004). It is clear that due to the lack of detail on the extent of current hydrocarbon resources and consequently the nature and extent of future production activities, the potential impacts and effects thereof cannot at this stage be evaluated meaningfully. If there are applications for production in the future then the EIA processes required for these future activities would need to consider and assess the cumulative impacts, considering the planned activities.

PASA'S RESPONSE

In their comments to this ground of appeal, PASA submits that:

- 2.6.31 The Minister of Mineral and Petroleum Resources is identified as a competent authority in terms of section 24C of the National Environmental Management Act (NEMA), 1998. It is not clear what is meant by acting as a judge and the jury, when the DMPR is undertaking its mandate. The appellant did not provide the requirements needed to be qualified to evaluate the applications. It is the Department's view that the professional appointed to evaluate the environmental authorisation application has the expertise to undertake such duties.
- 2.6.32 The environmental impact assessment process is determined by the activity applied for. In this case the environmental authorisation holder applied for a 3D seismic survey under reconnaissance permit. According to the 2014 EIA Regulations, as amended, the said activity is listed in Listing Notice 1, which requires a basic assessment process, which was followed. There is no other legislation that compels the applicants who propose to undertake seismic survey under reconnaissance permit to do a full environmental impact assessment.

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- 2.6.33 The NEMA 2014 EIA Regulations guides the process of impact assessment to be undertaken. This is determined by the triggered listed activity. In this case, offshore seismic survey under a reconnaissance permit is listed in listing notice 1, which triggers a basic assessment. Therefore, the undertaken impact assessment process is the correct legislated process. Furthermore, impacts on migratory species was assessed and mitigation measures provided, which include planning of the survey to avoid migration periods were recommended.
- 2.6.34 In respect of the tenth appellant's submissions, the factors listed in section 63 of the NEM:ICMA were considered in decision making as these factors are not different from NEMA requirements. The decision to grant the environmental authorisation was informed by the outcomes of the EIA assessment and consultation process carried out.
- 2.6.35 The compliance status of the applicant on previous permits is not considered in decision making for an authorisation that is not related to those permits.
- 2.6.36 The impact assessment methodology used in the BAR considered the past and current activities impacts. Which is in line with the current most reliable gauge for cumulative pressure as provided by Sink et al.,(2009). The cumulative impact for the authorised activity was assessed and was found be very low.

EVALUATION (Reasons for Decision)

- 2.6.37 The issue for determination under this ground of appeal is whether the environmental authorisation was granted following a sufficiently rigorous, lawful and informed assessment of the impacts of the proposed activity, including cumulative impacts. In particular, the appellant's challenge the following:
- 2.6.37.1 The impartiality and competence of the competent authority;
- 2.6.37.2 The use of a Basic Assessment (BA) process, rather than a comprehensive scoping and environmental impact reporting ("S&EIR") process. They aver that this

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was inappropriate having regard to the nature and scale of the impacts of seismic activities in the marine environment, and that it failed to take into account South Africa's international obligations under Resolution 12.14 of the Convention on the Conservation of Migratory Species of Wild Animals ("CMS"), which requires a comprehensive EIA process to be conducted before permitting any noise-emitting activities that may harm marine life;

2.6.37.3 The extent to which the CA considered the factors prescribed by section 63 of NEM:ICMA when deciding to grant the environmental authorisation, including the interests of the whole community, the protection and functioning of coastal public property and the coastal protected zone, applicable coastal management plans; and

2.6.37.4 The applicant's compliance with its previous permits and environmental authorisations.

2.6.38 In evaluating these grounds of appeal, I considered the legislative framework governing the environmental impact assessment process and the identification and functions of the competent authority, in particular NEMA and the 2014 EIA Regulations.

Impartiality and competence of the CA

2.6.39 Section 1 of NEMA defines the "competent authority" as follows:

"competent authority" in respect of a listed activity or specified activity, means the organ of state charged by this Act with evaluating the environmental impact of that activity and, where appropriate, with granting or refusing an environmental authorisation in respect of that activity."

2.6.40 The procedure for identifying the relevant competent authority is prescribed in Section 24C of NEMA. Section 24C(2A) provides that the Minister responsible for mineral resources must be identified as the competent authority responsible for granting environmental authorisations,

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where the listed or specified activity is a mining activity.

2.6.41 Section 1 of NEMA defines a “mining activity” as *“an activity which requires a permission, right, permit or consent in terms of the Mineral and Petroleum Resources Development Act, 2002, including hydraulic fracturing and reclamation.”*

2.6.42 As indicated in the BAR, the proposed seismic survey triggered Listed Activity 21B of Listing Notice 1, which reads as follows:

“Any activity including the operation of that activity which requires a reconnaissance permit in terms of section 74 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the reconnaissance permit, excluding—
(a) any desktop study; and
(b) any arial survey.”

2.6.43 The Minister responsible for mineral resources was accordingly the designated competent authority for the proposed activity and was vested with the mandate to evaluate its environmental impacts and, where appropriate, to grant or refuse an environmental authorisation in respect of that activity. The fact that the Minister responsible for mineral resources is both the designated competent authority in terms of section 24C(2A) of NEMA and the authority responsible for certain aspects of the MPRDA regulatory framework does not, without more, establish a lack of impartiality or competence. In this regard, the Minister responsible for mineral resources has the legislative authority, embodied in section 24C of NEMA, to issue environmental authorisation decisions relating to mining and petroleum activities. The lawfulness of that legislative authority cannot be impugned merely because the Minister responsible for mineral resources also exercises functions under the MPRDA. The relevant enquiry is whether the decision-maker exercised the statutory discretion conferred by NEMA lawfully, rationally and on the basis of the information placed before it. No evidence has been placed before me indicating actual bias, predetermination or a failure by the competent authority to independently apply its mind to the application and the environmental impacts of

the proposed activity.

2.6.44 The appellant's contention that the Minister responsible for mineral resources is inadequately qualified to act as the competent authority for purposes of the environmental authorisation is misplaced and cannot be sustained. Section 24C(2A) NEMA expressly provides that the Minister responsible for mineral resources must be identified as the competent authority where the listed or specified activity is a mining activity. The designation of the competent authority is therefore prescribed by statute. It is not dependent upon the Minister personally possessing a particular qualification. The appellant's ground impermissibly seeks to introduce a qualification requirement which does not appear in section 24C or elsewhere in NEMA.

2.6.45 In any event, I am aware that the competent authority also draws on PASA's specialised expertise and recommendations in the exercise of its functions. PASA is the agency delegated by the Minister responsible for mineral resources to perform functions in terms of Chapter 6 of the MPRDA, including, among others, reviewing environmental reports and making recommendations to the Minister regarding the acceptance thereof and the conditions of EAs in terms of section 71(i) of the MPRDA.

Use of a Basic Assessment (BA) process

2.6.46 The procedure for undertaking an environmental impact assessment is prescribed by the 2014 EIA Regulations. Regulation 15 provides for the determination of the assessment process to be applied to an application for environmental authorisation. Regulation 15(2)(a) states that an application must be managed in accordance with regulation 19 and 20 if basic assessment must be applied to the application or when identified and gazetted by the Minister in a government notice.

2.6.47 As I have indicated above, the proposed seismic survey triggered Listed Activity 21B of Listing Notice 1 (published under Government Notice R.983 in Government Gazette 38282 of 4 December 2014). Paragraph 3(2) of Listing Note 1 states that the *"investigation, assessment and communication of potential impact of activities must follow the procedure as prescribed in*

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regulations 19 and 20 of the Environmental Impact Assessment Regulations published in terms of section 24 (5) of the Act."

2.6.48 The applicant was therefore required to undertake a Basic Assessment process in respect of its application for environmental authorisation, and not a full S&EIR process.

2.6.49 In addition, I have noted that Resolution 12.14 (Adverse Impacts of Anthropogenic Noise on Cetaceans and Other Migratory Species) of the Convention on Migratory Species does not prescribe the type of environmental impact assessment process to be undertaken by the parties to the convention. Rather, it recognises the need for environmental impact assessment in assessing and mitigating the impacts of activities (including activities the oil and gas industry) on marine species. Among other, the resolution:

- Urges Parties and invites non-Parties that exercise jurisdiction over any part of the range of marine species listed on the appendices of CMS, or over flag vessels that are engaged within or beyond national jurisdictional limits, to take special care and, where appropriate and practical, to endeavour to control the impact of anthropogenic marine noise pollution in habitats of vulnerable species and in areas where marine species that are vulnerable to the impact of anthropogenic marine noise may be concentrated, to undertake relevant environmental assessments on the introduction of activities that may lead to noise associated risks for CMS-listed marine species and their prey;
- Strongly urges Parties to prevent adverse effects on CMS-listed marine species and their prey by restricting the emission of underwater noise; and where noise cannot be avoided. Further urges Parties to develop an appropriate regulatory framework or implement relevant measures to ensure a reduction or mitigation of anthropogenic marine noise;
- Urges Parties to ensure that Environmental Impact Assessments take full account of the effects of activities on CMS-listed marine species and their prey and consider a more holistic ecological approach at a strategic planning stage;

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- Endorses the “CMS Family Guidelines on Environmental Impact Assessments for Marine Noise-generating Activities” and encourages the use and adoption thereof. Chapter IV of that guideline (EIA Guideline for Seismic Surveys) in turn requires the EIA to include the following components:
 - Description of the area;
 - Description of the equipment and activity (including other simultaneous activities and potential cumulative impacts);
 - Modelling of noise propagation loss;
 - Species impact;
 - Mitigation and monitoring plans;
 - Reporting plans; and
 - Consultation and independent review.
- Stresses the need of Parties to consult with any stakeholder conducting activities known to produce anthropogenic marine noise with the potential to cause adverse effects on CMS listed marine species and their prey, such as the oil and gas industry, shoreline developers, offshore extractors, marine renewable energy companies, other industrial activities and oceanographic and geophysical researchers recommending, how best practice of avoidance, diminution or mitigation of risk should be implemented. This also applies to military authorities to the extent that this is possible without endangering national security interests. In any case of doubt the precautionary approach should be applied; and
- Encourages Parties to facilitate studies on the extent and potential impact on the marine environment of high- intensity active naval sonars and seismic surveys in the marine environment; and the extent of noise inputs into the marine environment from shipping and to provide an assessment, on the basis of information to be provided by the Parties, of the impact of current practices.

2.6.50 It must be noted that a Basic Assessment process under the 2014 EIA Regulations is a one of two types of recognised environmental impact assessment processes. It is still an EIA tool.

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The 2014 EIA Regulations define an “environmental impact assessment” as “a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and S&EIR.” Regulation 2 of the 2014 EIA Regulations confirms that the purpose of the regulations is to “regulate the procedure and criteria as contemplated in Chapter 5 of the Act [NEMA] relating to the preparation, evaluation, submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities, subjected to environmental impact assessment, in order to avoid or mitigate detrimental impacts on the environment, and to optimise positive environmental impacts, and for matters pertaining thereto.” Regulations 19 and 20, read with Appendix 1 to the EIA Regulations, pertaining to the Basic Assessment process, prescribe a detailed process for the assessment, mitigation and monitoring of environmental impacts, including cumulative impacts.

- 2.6.51 I am therefore satisfied that the applicant followed the correct environmental impact assessment procedure, being the Basic Assessment process, in accordance with the requirements of the regulations, and that this process does not contravene the undertakings in resolution 12.4 of the CMS. Instead, it evidently aligns with the objectives thereof. The Marine Biodiversity Assessment also makes reference to the CMS.

NEM:ICMA

- 2.6.52 I note that section 4.6 of the BAR and the Marine Biodiversity Assessment had regard to the NEM:ICMA, including the criteria outlined in section 63(1) of the Act, and its implications for the proposed activity in accordance with the requirements of paragraph 3(1)(e) of Appendix 1 to the 2014 EIA Regulations.
- 2.6.53 Section 12 of the NEM:ICMA requires the state, in its capacity as the public trustee of all coastal public property, to (a) ensure that coastal public property is used, managed, protected, conserved and enhanced in the interests of the whole community; and (b) take whatever reasonable legislative and other measures it considers necessary to conserve and protect coastal public property for the benefit of present and future generations. Section 21 requires

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an organ of state that is legally responsible for controlling or managing any activity on or in coastal waters, to control and manage that activity- (a) in the interests of the whole community; and (b) in accordance with the Republic's obligations under international law.

- 2.6.54 The competent authority has confirmed in paragraph 3.5 on page 16 of the environmental authorisation - and in its responding statement - that the policy and legislative framework relevant to the proposed project was assessed, and that the requirements of the NEM:ICMA (including section 63 thereof) are adequately addressed in the BAR and were taken into account in its decision to grant the environmental authorisation. The absence of a specific reference to each and every section of the applicable legislative framework in the environmental authorisation cannot, without more be deemed as failure of the competent authority to consider such legislative provisions.
- 2.6.55 In assessing this ground, I have considered whether the information before the competent authority enabled it to evaluate the factors identified in section 63 of NEM:ICMA. The specialist assessments considered, among other things, the nature and extent of the proposed activity, its location relative to coastal and marine sensitive environments, potential impacts on marine ecosystems, fisheries, coastal communities, heritage resources and socio-economic interests, the outcomes of the public participation process and the proposed mitigation measures. These are the very considerations which would inform an assessment of whether the activity is consistent with the protection and management of coastal public property and the interests of the broader community contemplated in section 63.
- 2.6.56 I am also aware that in the recent judgment of *Aukotowa Fisheries Primary Co-operative Limited and Others v Director-General: Department of Mineral and Petroleum Resources and Others*⁷³, the court similarly found that while the BAR for TGS Geophysical Company (UK) Ltd's proposed 3D seismic reconnaissance survey did not separately identify each and every factor in section 63(1) of the NEM:ICMA, it addressed all relevant considerations in substance, including the nature of the survey, features of the area, the required public participation

⁷³ *Aukotowa Fisheries Primary Co-operative Limited and Others v Director-General: Department of Mineral and Petroleum Resources and Others* (24492/2024) [2026] ZAWCHC 408 (13 August 2026) (at paragraph 57 to 62).

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process, the environmental baseline, a comprehensive assessment of the proposed seismic activities (including scientific assessments), and its implications on the coastal environment. In addition, the competent authority confirmed that they were provided with the necessary information to ensure that any potentially affected coastal public property be managed in the public interest, pursuant to the state's role as public trustee.

2.6.57 To the extent that the appellants contend that applicable coastal management plans were not considered, no evidence has been placed before me identifying any specific provision of an applicable coastal management programme that is inconsistent with the proposed activity or that would have required a different outcome. In any event, the specialist assessments considered the characteristics of the receiving environment, coastal management objectives and the protection of sensitive marine and coastal resources. I am therefore not persuaded that the absence of an express reference to a particular coastal management programme demonstrates a failure to consider relevant considerations.

2.6.58 In the present matter, the applicant also undertook an impact and risk assessment process, which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity to determine the nature, significance, consequence, extent, duration, and probability of the impacts occurring, and the degree to which these impacts can be reversed, may cause irreplaceable loss of resources and can be avoided, managed or mitigated. This assessment was informed by specialist assessments, including Underwater Acoustic Modelling, Marine Biodiversity, Fisheries, Cultural Heritage and Social Impact Assessments. The Marine Biodiversity and Fisheries assessments were also subjected to external peer review. The BAR and specialist assessments considered the impacts on coastal resources and communities, including the cumulative impacts of three potential surveys occurring concurrently. I have already considered the findings of these specialist assessments under the second, third and fourth grounds of appeal. As confirmed on page 216 of the BAR, the findings of the specialist studies conclude that there are no environmental fatal flaws that should prevent the proposed project from proceeding, provided that the recommended mitigation and management measures are implemented. The EAP and specialists identified

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various and suitable measures to avoid, manage or mitigate identified impacts for the proposed activities on the receiving environment. These mitigation measures were incorporated in the EMPr. The applicant subjected the BAR (including the specialist assessments) and the EMPr to a comprehensive PPP, including targeted consultation with small-scale fishers and Indigenous communities, prior to its submission to the competent authority.

- 2.6.59 I have also considered the appellants' contention that cumulative impacts associated with neighbouring licence blocks and offshore exploration projects were ignored. The BAR and specialist assessments expressly considered cumulative impacts, including the possibility of concurrent surveys and other offshore activities. To the extent that the appellants seek assessment of future exploration or production activities that have not yet been defined or authorised, I am not persuaded that such impacts are presently capable of meaningful assessment. Future exploration or production proposals will require their own environmental assessment and authorisation processes in which cumulative impacts can be reassessed on the basis of defined project parameters.
- 2.6.60 I also take note of the applicant's response that no impacts on coastal public property would be expected due to the location of the survey area between approximately 256 km offshore of St Helena Bay, extending north along the western coastline to approximately 220 km offshore of Hondeklip Bay.
- 2.6.61 I am accordingly satisfied that the BAR and specialist assessments considered the impacts of the activity on the marine and coastal environments, and the affected communities, and recommended measures to mitigate these impacts. The BAR, in substance, reflects how the proposed activities will meet the provisions of section 63(1) of the NEM:ICMA and the competent authority had sufficient information before it to enable it to reach a decision.

Taking a holistic view of the assessment process, I am satisfied that the competent authority was provided with detailed specialist studies addressing marine ecology, fisheries, heritage, socio-economic impacts, cumulative impacts and public participation. Those studies were

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subjected to public scrutiny and, in key instances, external peer review. The information before the competent authority was therefore sufficient to permit an informed evaluation of the likely environmental consequences of the proposed activity and the appropriateness of the proposed mitigation measures.

- 2.6.62 In view of the foregoing, the appellant did not make out a case of failure by the DMPR to consider relevant coastal management considerations or to comply with the NEM:ICMA.

Compliance with previous authorisations

- 2.6.63 I have already considered this issue under the second ground of appeal. Information concerning previous compliance may constitute a relevant consideration under section 63 of NEM:ICMA and section 24O of NEMA to the extent that it informs an assessment of the applicant's ability to comply with conditions of authorisation. However, no evidence has been placed before me demonstrating material non-compliance with previous authorisations or identifying any adverse findings that could reasonably have affected the outcome of the present application. In these circumstances I am not persuaded that the absence of previous compliance reports from the BAR materially affected the decision-making process.

- 2.6.64 This ground of appeal is accordingly dismissed.

2.7 SEVENTH GROUND OF APPEAL: PASA'S ACCEPTANCE OF RECONNAISSANCE PERMIT APPLICATION WAS UNLAWFUL, NO STATUTORY BASIS FOR SPECULATIVE MULTI-CLIENT SEISMIC SURVEY

Appellants' Submissions

The ninth and tenth appellants raise this issue as a ground of appeal:

- 2.7.1 The ninth appellant contends that the decision of the CA fails to meet the requisite procedural requirements as set out under the Mineral and Petroleum Resources Development Act

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(MPRDA). Specifically, Section 74(1)(a) to (c) of the MPRDA defines the “holder” of a reconnaissance permit or exploration right as the person to whom such right or permit has been granted, or that person’s successor in title. Further, Section 74(2)(b) establishes that a reconnaissance application must demonstrate that no other party holds a technical cooperation permit, exploration right, or production right for petroleum over any part of the area in question.

2.7.2 In the present case, the applicant is not the holder of the rights to Blocks 12/1/274 ER, 12/1/343 ER, and 12/1/339 ER. As such, the applicant is unlawfully holding and exercising rights over these blocks.

2.7.3 The CA has failed to provide adequate legal justification for:

2.7.3.1 The Petroleum Agency SA (PASA)’s authority to accept the applicant’s application for seismic acquisition rights; and

2.7.3.2 How the authorisations granted comply with the procedural requirements of the MPRDA, particularly given that the rights are not lawfully held and thus contravene the provisions of the MPRDA.

2.7.4 Therefore, the CA’s decision is unlawful, as it has not been made per the requirements of the MPRDA.

2.7.5 The tenth appellant contends that in their comments to the BAR, they dealt with the applicant’s failure to consider the unlawfulness of PASA’s acceptance of multi-client speculative surveys in detail, however the final BAR does not address their comments in this regard.

2.7.6 They accordingly submit that the acceptance of the applicant’s reconnaissance permit application in circumstances where exploration rights are held by another person/s over the area, is unlawful. In terms of section 74 of the MPRDA, ‘any person’ who wishes to apply to the Minister for a reconnaissance permit must lodge the application as indicated in subsection

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(1)(a) to (c), and PASA must within 14 days accept an application for a reconnaissance permit if, among other things, 'no other person holds a technical co-operation permit, exploration right or production right for petroleum over any part of the area'. If the application does not comply with the requirements of this section, the designated agency must notify the applicant in writing within 14 days of the receipt of the application and provide reasons

2.7.7 In the Searcher judgement referred to above, Thulare J interpreted the meaning of the wording in section 75(1)(c) of the MPRDA. While dealing with the issuing of a reconnaissance permit, the wording of section 75(1) is similar to the wording used in section 74(2): section 75(1) provides that the Minister must issue a reconnaissance permit if the provisions of section 75(1)(c) are met, namely that the reconnaissance will not result in unacceptable pollution, ecological degradation or damage to the environment and that an environmental authorisation is granted. Thulare J explained what is required as follows:

"There must be evidence that the proposed reconnaissance will not result in unacceptable pollution, ecological degradation or damage to the environment, an environmental authorization is mandatory and the Minister would act unlawfully in granting a reconnaissance permit where section 75(1)(c) was not satisfied."

2.7.8 Applying the reasoning of Thulare J to section 74(2) of the MPRDA, it follows that there must be evidence that no other person holds an exploration right for petroleum over any part of the area, and that PASA would be acting unlawfully if it accepted a reconnaissance permit application where section 74(2)(b) was not satisfied.

2.7.9 The final BAR indicates that the survey area covers a number of blocks as follows:

<p>Petroleum Licence Blocks Covered by Application Area</p>	<p>The following licence blocks are covered by the application area:</p> <ul style="list-style-type: none"> • 12/3/274 ER • 12/3/343 ER • 12/3/339 ER
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- 2.7.10 This clearly indicates that three exploration rights have been granted in respect of three of the Petroleum License Blocks covered by the application area. These exploration rights are held by other persons, not the applicant.
- 2.7.11 The appellants further submit that there is no statutory basis in the MPRDA for the granting of reconnaissance permits to seismic survey companies to conduct speculative multi-client seismic surveys in Blocks where exploration rights are held by other persons, and that the Minister would be acting ultra vires the enabling provisions of the MPRDA should he grant a reconnaissance permit to the applicant.

APPLICANT'S RESPONSE

In response to this ground of appeal, the applicant submits as follows:

- 2.7.12 The applicant denies the assertion by the ninth appellant that the decision to grant the environmental authorisation fails to meet the requirements of section 74(2)(b) of the MPRDA.
- 2.7.13 In the instance, the applicant was issued an Acceptance Letter in terms of Section 74(2) of the MPRDA, by the Petroleum Agency of South Africa (PASA). The application for environmental authorisation was initiated based on this acceptance letter.
- 2.7.14 The reference to the MPRDA Section 74 1(a) to (c) does not define the 'Holder' of a permit or right. Rather Section 74 1(a) to (c) lists the requirement for the submission of an application for a Reconnaissance Permit. These requirements were complied with by the applicant.
- 2.7.15 Section 74(2)(b) of the MPRDA, read in its entirety, states that *"the designated agency must, within 14 days of the receipt of the application, **accept** an application for a reconnaissance permit if – no other person holds a technical co-operation permit, exploration right or production right for petroleum over any part of the area..."*

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- 2.7.16 As illustrated above, the provision sets out one of the criteria which, if met, obliges the CA to accept an application for a reconnaissance permit. The provision does not conversely, as the appellant asserts, state that the CA must refuse an application for a reconnaissance permit where another person already holds a technical co-operation permit, exploration right or production right over the area.
- 2.7.17 It is clear that the primary intention of the provision in question is to afford security of tenure to permit/right holders as stated in the preamble of the MPRDA. Consequently, applicants for reconnaissance permits seeking to acquire multi-client seismic data over acreage already encumbered are required to obtain unequivocal and unconditional consent from the permit/right holders for PASA to proceed to process and possibly grant Reconnaissance Permit over such encumbered acreage. It therefore follows that an application for a Reconnaissance Permit can and should be granted if the permit/right holder gives the necessary consent for the acquisition of multi-client data over its acreage. The applicant in this instance has obtained the necessary consent/s from the relevant permit/right holders.
- 2.7.18 Having participated in the applicant's prior environmental authorisation applications, the tenth appellant will be aware that PASA has previously responded to this comment as follows:

"Section 74(2)(b) of the Act provides that the designated Agency must accept an application for a reconnaissance permit on condition that no other person holds a Technical Co-operation Permit, Exploration Right or Production Right for petroleum over any part of the area. It is clear that the primary intention of the provision in question is to afford security of tenure to permit/right holders as stated in the preamble of the Act. Consequently, applicants for reconnaissance permits seeking to acquire multi-client seismic data over acreage already encumbered are required to obtain unequivocal and unconditional consent from the permit/right holders for the Agency to proceed to process and possibly grant Reconnaissance Permit over such encumbered acreage. It therefore follows that an application for a Reconnaissance Permit can and should be granted if the permit/right holder gives the necessary consent for the acquisition of multi-client data over its acreage. Searcher in this instance has obtained the necessary consent/s from the relevant

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permit/right holders.

The applicant was issued an Acceptance Letter in terms of Section 74(2) of the Minerals and Petroleum Resources Development Act (MPRDA), by the Petroleum Agency SA (PASA). The application for environmental authorisation was initiated based on this acceptance letter.”

2.7.19 As the appellant is also aware the applicant conducted a prior survey within the current Reconnaissance Permit Area approximately 9 months ago (2022 EA) which survey was completed by the applicant and has not resulted in any material adverse effects on the receiving environment.

2.7.20 For the reasons set out above, the applicant submits that decision to accept the Reconnaissance Permit application and consequently the decision to grant the environmental authorisation at all times complied with the provisions of the MPRDA. Furthermore, the appellants have not raised a ground of appeal on which the decision of the CA to grant an environmental authorisation can be set aside. The grant of the Reconnaissance Permit in accordance with section 74(2) of the MPRDA must be appealed in terms of the MPRDA and cannot be appealed under NEMA or the 2014 National Appeal Regulations, accordingly this ground of appeal does not fall within the powers of the Minister for Forestry, Fisheries and the Environment to consider an appeal against the grant of a reconnaissance permit.

PASA’S RESPONSE

In their comments to this ground of appeal, PASA submits that:

2.7.21 Section 74(2)(b) of the MPRDA provides that the designated Agency must accept an application for a reconnaissance permit on condition that no other person holds a Technical Co-operation Permit, Exploration Right or Production Right for petroleum over any part of the area. The primary intention of the provision in question, is to afford security of tenure to permit/right holders as stated in the preamble of the MPRDA.

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- 2.7.22 Consequently, applicants for reconnaissance permits seeking to acquire multi-client seismic data over acreage already encumbered are required to obtain unequivocal and unconditional consent from the permit/right holders for the Agency to proceed to process and possibly grant a Reconnaissance Permit over such encumbered acreage.
- 2.7.23 It therefore follows that an application for a Reconnaissance Permit can and should be granted if the permit/right holder gives the necessary consent for the acquisition of multi-client data over its acreage.
- 2.7.24 The environmental authorisation in question was lodged, processed and authorised in terms of the NEMA. Therefore, issues related to the MPRDA cannot be addressed in the appeal. The only requirement that is related to MPRDA is the reconnaissance permit acceptance letter, which was submitted by the applicant with the environmental authorisation application form. The environmental authorisation application was processed because the application requirements were met. The appellant is advised to lodge these issues in terms of the MPRDA so they can be addressed.

EVALUATION (Reasons for Decision)

- 2.7.25 The nub of this ground of appeal is that PASA allegedly acted ultra vires their authority as conferred upon them by the MPRDA (section 74(2)(b)) in accepting a reconnaissance permit application from the applicant in circumstances where exploration rights are already held by another person/s over the area. The premise of this contention is that the environmental authorisation process conducted under NEMA was unlawful.
- 2.7.26 It is apparent that the ninth and tenth appellants' complaints primarily concern processes the application of sections 74 and 75 of the MPRDA, including whether PASA was entitled to accept the reconnaissance permit application in circumstances where other rights holders allegedly hold petroleum right. This issue falls within the remit of the MPRDA.

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2.7.27 These matters do not fall within the ambit of the environmental impact assessment process regulated under NEMA or a specific environmental management Act (SEMA). The NEMA and MPRDA processes are separate and distinct statutory processes governed by different legislative frameworks and serving different purposes. My jurisdiction in this appeal is confined to the determination of appeals lodged under section 43(1A) of NEMA against decisions taken under NEMA or a SEMA by the Minister responsible for mineral and petroleum resources, or a person acting under his or her delegated authority. Matters concerning the acceptance, processing or granting of reconnaissance permits under the MPRDA fall outside the scope of my statutory mandate as appeal authority. I therefore express no view on the merits of the appellants' contentions insofar as they concern the application of the MPRDA, or on the validity of any reconnaissance permit issued under that Act.

2.7.28 This ground of appeal is accordingly dismissed.

2.8 EIGHTH GROUND OF APPEAL: DECISION MADE IN POLICY VACUUM

Appellants' Submissions

The ninth appellant raises this issue as a ground of appeal:

2.8.1 The ninth appellant avers that the decision made by the CA fails to account of the requirement that the authorisation of activities related to seismic survey operations for oil and gas must be carried out with due consideration for their compatibility with other marine uses and objectives within the broader marine environment. Specifically, the decision overlooks the absence of a comprehensive ocean governance framework, required to implement the Constitutional imperative flowing from Section 24 of the Constitution of the Republic of South Africa (1996). This has yet to be implemented:

2.8.1.1 The White Paper on the National Environmental Management of the Ocean (2014) has yet to be promulgated, and

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- 2.8.1.2 The Marine Spatial Planning Act, 16 of 2018, ("MSPA") still requires development of the Marine Area Plans (as defined in the MSPA).
- 2.8.2 This effectively renders the continuation of the environmental authorisation unlawful as it, inter alia, ignores alternate sectoral objectives as well as cumulative pressures to the marine ecosystem itself.
- 2.8.3 Pursuant to Section 3(2) of the MPSA, states:
- "Any right, permit, permission, license or any other authorisation **issued** in terms of any other law must be consistent with the **approved** marine area plans."*
- 2.8.4 Therefore, the CA was never entitled, in law, to award an environmental authorisation to the applicant, until such time as the Marine Area Plans are gazetted, come into law, and become binding. Because the Marine Area Plans have not yet been "approved" as envisaged by section 3(2) of the MSPA, no 'right, permit, permission, license or any other authorisation' (such as the EA) could be deemed to be 'consistent' with the said Marine Area Plans. Therefore, and considering the peremptory language used by the drafters of the MSPA viz the use of the word "must" – the environmental authorisation (i.e., the decisions that are subject to this appeal) granted to Searcher Geodata UK was unlawful and, as such, invalid.
- 2.8.5 The CA failed to take into account the decision to implement Section 6 of the National Energy Act, 2008 (Act. No 34 of 2008) (NEA) into operation with effect from 1 April 2024, announced by President Ramaphosa. The National Energy Act, Section 6 requires the Minister of Mineral Resources and Energy to develop an Integrated Energy Plan (IEP) in the context of the current climate crisis. Without the legislative framework, this application lacks the appropriate guidelines for adopting and implementing performance management systems relating to global warming and international carbon commitments. Offshore exploration for fossil fuels lacks the legislative mandate to proceed whilst the IEP undergoes full public participation and consideration as per the Constitution.

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APPLICANT'S RESPONSE

In response to this ground of appeal, the applicant submits as follows:

- 2.8.6 An environmental authorisation was granted to the applicant in accordance with regulation 24 of NEMA and the 2014 EIA Regulations. The environmental authorisation authorises the applicant to undertake three-dimensional seismic survey activities) in an area off the west coast of South Africa, approximately 256 kilometres offshore St Helena Bay, extending north along the western coastline to approximately 220 kilometres offshore Hondeklip Bay (the Reconnaissance Permit Area). The applicant conducted a prior survey within the Reconnaissance Permit Area approximately 9 months ago (2022 EA), which survey was completed by the applicant and has not resulted in any material adverse effects on the receiving environment. The new survey area will also exclude an area of approximately 9000km² from full fold acquisition as this area has already been surveyed in the previous survey which was completed on 28 April 2024. Full details of the proposed activities are contained in the BAR.
- 2.8.7 The applicant submits that all potential impacts which were required to be assessed for purposes of the grant of an environmental authorisation for the proposed activities have been thoroughly and adequately assessed by the independent EAP in the BAR, together with the following specialist reports which are contained in Appendix C to the BAR:
- 2.8.7.1 Underwater Acoustics Modelling Report dated June 2024 which forms Appendix C1 to the BAR;
 - 2.8.7.2 Biodiversity and Ecosystem Services Assessment Report dated June 2024 which forms Appendix C2 to the BAR;
 - 2.8.7.3 Specialist Fisheries Assessment Report dated June 2024 and which forms Appendix C3 to the BAR;

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- 2.8.7.4 Social Impact Assessment Report dated April 2024 which forms Appendix C4 to the BAR; and
- 2.8.7.5 Heritage Impact Assessment Report dated 12 June 2024 which forms Appendix C5 to the BAR.
- 2.8.8 The applicant notes that the ninth appellant was identified at the initiation of the Basic Assessment process as a key stakeholder. No comments were received from any of its representatives during the public participation process conducted for the BAR. Thus, failing to provide an opportunity for the EAP and/or applicant to consider their inputs prior to finalisation and submission of the final report and application. The appellant having elected not to participate in the commenting process, despite being specifically invited to do so, has now chosen to raise grounds of appeal which could easily have been addressed had the appellant taken up the invitation to engage with the EAP, applicants and specialists during the comments and responses period. While the EAP and applicants are required to create meaningful opportunities for consultations, our courts have held that meaningful consultation is a two-way communication and accordingly an obligation rests on both parties to communicate (refer *Maqoma v Sebe No and Another*⁷⁴) Accordingly, the obligation to consult meaningfully does not only rest with the EAP and applicants but also with the appellant and the appellant has failed on this obligation.
- 2.8.9 With regard to the appellant's assertions regarding the Marine Spatial Planning Act, 16 of 2018 (MSPA), the appellant's reasoning is flawed and fails to take into consideration the general principles of legal interpretation, given that the marine area plans in terms of section 3(2) of the MSPA are, as recorded in the ground of appeal itself, yet to be developed. Furthermore, neither section 3(2), nor any other section of the MSPA, restricts the authority of the CA to grant rights, permits, permissions, licences or authorisations until the marine area plans are developed and approved.
- 2.8.10 In addition, if the appellant's interpretation were to be applied, it would have severe

⁷⁴ *Maqoma v Sebe No and Another* 1987 (1) SA 483 (Ck) at paragraph 426.

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consequences for the South African economy and food security. The implications of the appellant's submissions are irrational in that adopting the approach suggested by the appellant would result in absurd consequences and create a scenario in which:

- 2.8.10.1 the Minister would not be permitted to grant fishing quotas under the Marine Living Resources Act 18 of 1998 which would prevent the commercial and small-scale fishing industries from continuing which would have a significant impact on food security;
 - 2.8.10.2 The South African Maritime Safety Authority could not licence vessels;
 - 2.8.10.3 The Minister could not approve applications for marine aquaculture or abalone ranching; and
 - 2.8.10.4 The Minister could not approve permits to transport cultured products or marine aquaculture fish and fish products.
- 2.8.11 In light of the above, the CA was not prevented from granting the Reconnaissance Permit or the environmental authorisation on the basis that no marine spatial plans had been approved.
- 2.8.12 Without detracting from the above submissions, the applicant further notes that the objectives of the MSPA have nonetheless been taken into account during the Basic Assessment process and this is reflected in the BAR.
- 2.8.13 The MSPA Objectives were considered by the CA in their decision making. It is noted, with reference to Section 9.3 and 9.4 of the BAR, that the findings of the specialist studies are that the significance of the impacts on biodiversity and the fisheries sector in the study area are expected to be low – negligible after mitigation measures are applied.
- 2.8.14 Section 4 of the BAR provides an overview of the governing legislation identified which relates to the proposed project. The CA assessed and processed the application based on the

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relevant legislation including NEMA. The environmental authorisation was granted as the application met the requirements of NEMA and the EIA Regulations. A White Paper is not regarded as an Act but rather a broad statement of government policy that can lead to legislation in South Africa. The White Paper on the National Environmental Management of the Ocean (2014) appears to have informed the Operation Phakisa – Ocean Economy Strategy and the subsequent MSPA.

- 2.8.15 The applicant refers the appeal authority to its submissions above concerning the appellant's flawed reasoning and failure to take into consideration the general principles of legal interpretation, given that no such integrated energy plan has been developed in terms of section 6 of the National Energy Act, 34 of 2008 (NEA). Furthermore, neither section 6, nor any other section of the NEA, restricts the authority of the CA to grant rights, permits, permissions, licences or authorisations until the integrated energy plan has been developed and published. The CA is therefore not prevented from granting the Reconnaissance Permit or the environmental authorisation on the basis that no integrated energy plan has been developed and published.
- 2.8.16 Without detracting from the above submissions, the applicant further notes that the national energy policy has nonetheless been taken into account during the Basic Assessment process and this is reflected in the BAR as described below.
- 2.8.17 The policy and legislative context is described in Section 4 of the BAR. According to the Integrated Resource Plan 2019 (IRP 2019), which is the country's electricity planning strategy, there is a need for gas in South Africa's energy mix in the future. This need is driven in part by the expectation that natural gas may act as a transition fuel, whilst other greener technologies mature. According to the DFFE, targets have been determined to achieve our national greenhouse gas (GHG) Emissions commitments. These targets consider the likely GHG emissions outcome of the implementation of current South African policies including the IRP 2019.

PASA'S RESPONSE

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In their response to this ground of appeal, PASA submits that:

- 2.8.18 The undertaken impact assessment identified and considered all existing sea uses. Furthermore, the I&APs, which include other sea users were consulted during the public participation process. This process allows all the I&APs to raise their concerns about the proposed seismic survey. The department is therefore satisfied with the process undertaken to assess impacts of the seismic survey on the existing sea users.
- 2.8.19 With respect to the failure of the decision to consider a comprehensive framework necessary to implement constitutional imperatives, the appellant seems to be quoting some of the framework and instruments that are not yet promulgated. This therefore means that such cannot be considered otherwise the competent authority will be acting beyond his powers and besides this is generally not allowed in the law. Having said that, the competent authority assessed the application for environmental authorisation in terms of NEMA and this is a principal environmental legislation which is the key in the achievement of the constitutional imperatives. In actual fact, the provisions of sections 2 and 24O of the NEMA are the building blocks necessary and at the heart of ensuring the realisation of the ideal sought to be achieved by section 24 of the Constitution. It is the competent authority's view that NEMA is a piece of legislation that contains the necessary protective mechanism for the realisation of the environmental right as conferred to everyone by the Bill of Rights. It therefore goes without a saying that any prima facie proof of non-compliance with the NEMA protective mechanism is a direct violation of the environmental right in the constitution. Section 24 of the Constitution was taken into account in considering the factors listed in section 24O of the NEMA and the NEMA principles against the proposed activities,. The assessment of the BAR revealed that the proposed exploration activities will not in any way violate the environmental right embedded in section 24 of the Constitution. The majority of the potential impacts associated with the proposed exploration activities were assessed to be of low significance after mitigation. In addition, mitigation measures proposed were considered adequate to ensure that environmental harm is minimised and/or prevented. Accordingly, it is PASA's considered view that the granted seismic surveys will not violate section 24 of the Constitution.

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- 2.8.20 The requirements of the Marine Spatial Planning Act (MSPA) cannot be satisfied without the promulgation of the marine area plans. Furthermore, the mandate to promulgate the marine area plans sits with the DFFE. It is therefore the Department's view that the decision to authorise the environmental authorisation did not contravene the requirements of the Constitution, as there are no marine area plans to comply with.
- 2.8.21 The authorised activity is not affected by the requirements of the National Energy Act. Relevant legislation, including the climate change policy was considered in the impact assessment and in making the decision. However, based on the nature of the authorised activity other legislative instruments are not triggered.

EVALUATION (Reasons for Decision)

- 2.8.22 Under this ground of appeal, the ninth appellant contends that the absence of a comprehensive ocean governance framework required to give effect to the constitutional imperative flowing from Section 24 of the Constitution, and the absence of the Integrated Energy Plan contemplated in section 6 of the National Energy Act, 2008 (Act No. 34 of 2008) (NEA), renders the environmental authorisation unlawful.
- 2.8.23 I am unable to agree with the appellant's submission that the environmental authorisation was granted in a policy vacuum. The premise of the argument is that, because certain future policy instruments or planning tools contemplated in legislation have not yet been finalised, no environmental authorisation may lawfully be granted until such instruments have been adopted. I am aware of no provision in NEMA, the 2014 EIA Regulations, the Marine Spatial Planning Act, 2018, the National Energy Act, 2008 or any other applicable legislation which imposes such a prohibition.
- 2.8.24 Administrative decisions must be taken on the basis of the law in force at the time the decision is made. The absence of future policy instruments, plans or regulatory measures does not suspend the operation of existing legislation or prevent competent authorities from exercising

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powers lawfully conferred upon them by statute. The environmental authorisation was considered under an existing and comprehensive legislative framework which includes, among others, NEMA, the 2014 EIA Regulations, NEM:ICMA, the Marine Spatial Planning Act, the MPRDA and the specialist environmental assessment requirements prescribed by law.

- 2.8.25 While I accept that Marine Area Plans contemplated by the Marine Spatial Planning Act have not yet been approved, section 3(2) of that Act regulates the consistency of authorisations with approved Marine Area Plans once such plans exist. It does not prohibit the granting of environmental authorisations in the absence of approved Marine Area Plans. To interpret the Act otherwise would effectively suspend the exercise of numerous statutory powers across a range of marine sectors until the Marine Area Plans are finalised, a result for which there is no textual support in the legislation.
- 2.8.26 Likewise, I am not persuaded that the absence of an Integrated Energy Plan contemplated by section 6 of the National Energy Act renders the environmental authorisation unlawful. Neither section 6 nor any other provision of the Act provides that environmental authorisations or petroleum-related activities are suspended pending the adoption of such a plan. In any event, existing government energy policy instruments, including the Integrated Resource Plan and other applicable policy frameworks, were before the decision-maker and considered during the environmental assessment process.
- 2.8.27 The appellant's contention also overlooks the fact that the proposed activity was assessed within an existing planning and regulatory framework. The BAR and specialist assessments considered biodiversity, fisheries, heritage, socio-economic impacts, cumulative impacts, marine spatial considerations, public participation and environmental management requirements. The fact that additional policy instruments may be developed in future does not mean that the current legislative framework is incapable of regulating activities in the interim.
- 2.8.28 The appellant has also not identified any specific provision of the White Paper, the Marine Spatial Planning Act or the National Energy Act that was contravened by the granting of the environmental authorisation

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2.8.29 I am therefore satisfied that the environmental authorisation was not granted in a legislative or policy vacuum and that the competent authority was entitled to determine the application on the basis of the statutory and policy framework applicable at the time the decision was taken.

2.8.30 I find that this ground of appeal is without merit and is accordingly dismissed.

3 DECISION

3.1 In reaching my decision on this appeal, I have taken the following into consideration:

3.1.1 The information contained in the Project File with reference number 12/1/048, with specific reference to the environmental authorisation, BAR and EMPr.

3.1.2 The appeals submitted by the appellants during the period of 25 October 2024 to 13 November 2024;

3.1.3 The responding statement submitted by the applicant on 5 December 2024;

3.1.4 The comments submitted by PASA on 14 January 2025;

3.1.5 The applicable legislative and regulatory framework; and

3.1.6 The relevant case law.

3.2 In terms of section 43(6) of NEMA, I have the authority, after considering the appeal, to confirm, set aside or vary the decision, provision, or condition or directive, or to make any other appropriate decision.

3.3 Having carefully considered the appeals and responses to them, together with all other relevant information, I have decided as follows:

3.3.1 The grounds of appeal are dismissed; and

3.3.2 The environmental authorisation dated 23 October 2023 is upheld subject to the inclusion therein of the conditions regarding the roles and responsibilities of the fisheries liaison officer (as discussed in paragraphs 2.3.72 to 2.3.74 above) as follows:

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- 3.3.2.1 The FLO must serve as the primary point of contact between the survey operator and affected fishing communities and coastal communities and must perform his or her functions in a fair, transparent and impartial manner;
- 3.3.2.2 The FLO must maintain regular communication, at least every fortnight, with affected fishing cooperatives, fishing associations, small-scale fishing communities, fishing right holders and affected coastal communities;
- 3.3.2.3 The FLO must receive, record and maintain a written register of complaints, concerns and reports of interference with fishing activities; coastal socio-economic activities; facilitate the prompt investigation thereof; communicate the outcome of investigations and, where appropriate, any corrective measures implemented to affected parties;
- 3.3.2.4 The FLO must maintain a record of all complaints and actions taken, which must be made available to the competent authority upon request.
- 3.3.2.5 The FLO may not be a member of the survey crew directly responsible for survey operations and must possess demonstrable knowledge of the fisheries sector operating within the area.
- 3.3.2.6 In addition, the FLO must submit monthly reports to the competent authority setting out stakeholder engagements undertaken, complaints received, concerns raised by fishers, investigations conducted and corrective measures implemented.

- 3.4 In arriving at my decision on the appeal, I have not responded to every statement set out in the appeal and/or responses thereof, and where a particular statement is not directly addressed, the absence of any response thereto should not be interpreted to mean that I agree with the statement made.

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- 3.5 Should any party hereto be dissatisfied with any aspect of my decision; such party may apply to a competent court to have this decision judicially reviewed. Judicial review proceedings must be instituted within 180 days of notification hereof, in accordance with the provisions of section 7 of the Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000) (PAJA).



DAVID MAYNIER, MP

MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: 25 / 10 / 2021