
APPENDIX 3:
PLAN OF STUDY FOR EIA



**SCOPING AND ENVIRONMENTAL IMPACT
ASSESSMENT FOR PROPOSED EXPLORATION
ACTIVITIES IN VARIOUS INSHORE LICENCE
BLOCKS OFF THE SOUTH-WEST COAST OF SOUTH
AFRICA**

PLAN OF STUDY FOR EIA

Prepared for:
Petroleum Agency of South Africa

On behalf of:
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1. INTRODUCTION

This Plan of Study for Environmental Impact Assessment (EIA) is submitted in accordance with the requirements of Section 2(i) of Appendix 2 of the EIA Regulations 2014, which states that a Scoping Report must include a Plan of Study for EIA which sets out the proposed approach to the environmental impact assessment of the application.

2. DESCRIPTION OF TASKS TO BE UNDERTAKEN IN THE EIA PHASE

If the Scoping Report is accepted by the Petroleum Agency of South Africa (PASA), specialist studies will be undertaken at the commencement of the EIA Phase. Once the specialist studies have been completed they will be integrated into an Environmental Impact Report (EIR). These tasks are discussed in more detail below.

2.1 SPECIALIST STUDIES

Three specialist studies will be undertaken to address key issues relevant to the proposed project, as identified during the Scoping Study. The specialist studies to be undertaken and the specialist details are presented in Table 1. The specialist Terms of Reference for these studies are presented in Sections 2.1.1 to 2.1.3.

Specialists would gather data that is relevant to identifying and assessing environmental impacts that may occur as a result of the proposed project. These impacts would be assessed according to pre-defined rating scales (see Section 3). Specialists would also recommend appropriate mitigation or control measures to minimise potential impacts or enhance potential benefits.

Table 1: List of specialist studies and specialists.

No.	Specialist Study	Specialist	Company
1	Marine fauna (including benthic)	Dr Andrea Pulfrich	Pisces Environmental Services
2	Fisheries	Dave Japp	Capricorn Marine Environmental
		Sarah Wilkinson	

2.1.1 GENERAL TERMS OF REFERENCE FOR THE SPECIALIST STUDIES

The following general terms of reference will apply to the specialist studies:

- Describe the baseline conditions that exist in the study area and identify any sensitive areas that would need special consideration;
- Review the Comments and Responses Report (see Appendix 2.6) to ensure that all relevant issues and concerns relevant to fields of expertise are addressed;
- Identify and assess potential impacts of the proposed operations;
- Identify and list all legislation and permit requirements that are relevant to the development proposal;
- Identify areas where issues could combine or interact with issues likely to be covered by other specialists, resulting in aggravated or enhanced impacts;
- Indicate the reliability of information utilised in the assessment of impacts as well as any constraints to which the assessment is subject (e.g. any areas of insufficient information or uncertainty);
- Where necessary consider the precautionary principle in the assessment of impacts;

- Identify feasible ways in which impacts could be mitigated and benefits enhanced giving an indication of the likely effectiveness of such mitigation and how these could be implemented in the management of the proposed operation;
- To ensure that specialists use a common standard, the determination of the significance of the assessed impacts will be undertaken in accordance with a common Convention (see Section 6.3);
- Comply with DEA guidelines as well as any other relevant guidelines on specialist study requirements for EIAs;
- Include specialist expertise and a signed statement of independence; and
- Comply with Regulation 12 and Appendix 6 of the EIA Regulations 2014, which specifies requirements for all specialist reports.

2.1.2 MARINE FAUNA

The specific terms of reference for the marine faunal assessment are as follows:

- Provide a general description of the local marine fauna (including cetaceans, seals, turtles, seabirds, fish, invertebrates and plankton species) within the proposed exploration licence area and greater South-West Coast. The description to be based on, *inter alia*, a review of existing information and data from the international scientific literature, the Generic EMP prepared for seismic surveys in South Africa, information sourced from the internet, as well as MMO close-out reports prepared for previous surveys undertaken off the coast of South Africa;
- Identify, describe and assess the significance of potential impacts of the proposed exploration activities on the local marine fauna, including but not limited to:
 - > physiological injury;
 - > behavioural avoidance of the survey area;
 - > masking of environmental sounds and communication; and
 - > indirect impacts due to effects on prey.
- Identify practicable mitigation measures to avoid/reduce any negative impacts and indicate how these could be implemented in the start-up and management of the proposed project

2.1.3 FISHERIES

The specific terms of reference for the fisheries assessment are as follows:

- Provide a general description of the fishing activities expected in the proposed exploration licence area and along the greater South-West Coast and areas adjacent to the license area in which fisheries overlap or may be affected;
- Undertake a spatial and temporal assessment of expected fishing effort and catch in the proposed exploration licence area for each sector identified;
- Determine whether there is any correlation between seismic and reported catch of the small pelagic and tuna-pole fisheries using information from surveys off the South-West Coast and taking into consideration the seasonality and variability in catches and abundance for the period for which such data are available. Fine scale environmental effects such as physical and chemical oceanographic characteristics will be excluded from this analysis.
- Assess the risk of the proposed exploration activities on the different fishing sectors taking into consideration as far as possible the historical and current performance of the key fisheries in the area and their expected natural variability;
- Assess the impact of the proposed exclusion zones around the survey vessels and potential disturbance of fish on the fishing activities based on the estimated percentage loss of catch and effort;
- Quantify the approximate economic impact of the estimated percentage loss of catch and effort calculated above for the small pelagic and tuna-pole fisheries; and

- Make recommendations for mitigation measures that could be implemented to minimise or eliminate negative impacts on and enhance any benefits to the fishing industry.

2.2 INTEGRATION AND ASSESSMENT

The specialist information, which addresses the key impacts identified during the EIA process, and other relevant information will be integrated into an EIR. The EIR will be presented in a clear and understandable format, suitable for easy interpretation by Interested and Affected Parties (I&APs) and authorities. The specialist studies will be included as appendices to this report. The EIR will be published for a 30-day I&AP comment period and a notification letter will be sent to all registered and identified I&APs to inform them of the release of the EIR and where the report can be reviewed.

After closure of the comment period, the report will be updated and comments received will be incorporated into an updated Comments and Responses Report that will be appended to the EIR. The EIR will be submitted to PASA for consideration and decision-making. The decision taken by PASA will be distributed to all I&APs on the project database as part of the statutory appeal period.

3. METHOD OF ASSESSING THE ENVIRONMENTAL ISSUES AND ALTERNATIVES

Specialists will consider ten rating scales when assessing potential impacts. These include:

- Extent of impact;
- Duration of impact;
- Intensity of impact;
- Significance of impact;
- Status of impact;
- Probability of impact occurring;
- Degree to which impact can be mitigated;
- Degree to which a resource is lost;
- Reversibility of impact; and
- Degree of confidence of assessment.

In assigning significance ratings to potential impacts before and after mitigation, specialists are instructed to follow the approach presented below:

1. The core criteria for determining significance ratings are “extent” (Section 3.1), “duration” (Section 3.2) and “intensity” (Section 3.3). The preliminary significance ratings for combinations of these three criteria are given in Section 3.4.
2. Additional criteria to be considered, which could “increase” the significance rating if deemed justified by the specialist, with motivation, are the following:
 - Permanent / irreversible impacts (as distinct from long-term, reversible impacts);
 - Potentially substantial cumulative effects (see Item 9 below); and
 - High level of risk or uncertainty, with potentially substantial negative consequences.
3. Additional criteria to be considered, which could “decrease” the significance rating if deemed justified by the specialist, with motivation, is the following:
 - Improbable impact, where confidence level in prediction is high.

4. The status of an impact is used to describe whether the impact will have a negative, positive or neutral effect on the surrounding environment. An impact may therefore be negative, positive (or referred to as a benefit) or neutral (Section 3.5).
5. Describe the impact in terms of the probability of the impact occurring (Section 3.6) and the degree of confidence in the impact predictions, based on the availability of information and specialist knowledge (Section 3.7).
6. Describe the degree to which a resource is impacted (Section 3.8);
7. When assigning significance ratings to impacts *after mitigation*, the specialist needs to:
 - First, consider probable changes in intensity, extent and duration of the impact after mitigation, assuming effective implementation of mitigation measures, leading to a revised significance rating; and
 - Then moderate the significance rating after taking into account the likelihood of proposed mitigation measures being effectively implemented. Consider:
 - Any potentially significant risks or uncertainties associated with the effectiveness of mitigation measures;
 - The technical and financial ability of the proponent to implement the measure; and
 - The commitment of the proponent to implementing the measure, or guarantee over time that the measures would be implemented.
8. Describe the degree to which an impact can be mitigated or enhanced (Section 3.9) and reversed (Section 3.10)
9. The cumulative impacts of a project should also be considered. “Cumulative impacts” refer to the impact of an activity that may become significant when added to the existing activities currently taking place within the surrounding environment.
10. Where applicable, assess the degree to which an impact may cause irreplaceable loss of a resource. A resource assists in the functioning of human or natural systems, i.e. specific minerals, water, etc.

The significance ratings are based on largely objective criteria and inform decision-making at a project level as opposed to a local community level. In some instances, therefore, whilst the significance rating of potential impacts might be “low” or “very low”, the importance of these impacts to local communities or individuals might be extremely high. The importance which I&APs attach to impacts must be taken into consideration, and recommendations should be made as to ways of avoiding or minimising these negative impacts through project design, selection of appropriate alternatives and / or management.

The relationship between the significance ratings after mitigation and decision-making can be broadly defined as follows:

Significance rating	Effect on decision-making
INSIGNIFICANT; VERY LOW; LOW	Will not have an influence on the decision to proceed with the proposed project, provided that recommended measures to mitigate negative impacts are implemented.
MEDIUM	Should influence the decision to proceed with the proposed project, provided that recommended measures to mitigate negative impacts are implemented.
HIGH; VERY HIGH	Would strongly influence the decision to proceed with the proposed project.

3.1 EXTENT

“Extent” defines the physical extent or spatial scale of the impact.

Rating	Description
LOCAL	Extending only as far as the activity, limited to the site and its immediate surroundings. Specialist studies to specify extent.
REGIONAL	Western Cape or Northern Cape. Specialist studies to specify extent.
NATIONAL	South Africa
INTERNATIONAL	

3.2 DURATION

“Duration” gives an indication of how long the impact would occur.

Rating	Description
SHORT-TERM	0 - 5 years
MEDIUM-TERM	6 - 15 years
LONG-TERM	Where the impact will cease after the operational life of the activity, either because of natural processes or by human intervention.
PERMANENT	Where mitigation either by natural processes or by human intervention will not occur in such a way or in such time span that the impact can be considered transient.

3.3 INTENSITY

“Intensity” establishes whether the impact would be destructive or benign.

Rating	Description
ZERO TO VERY LOW	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.
LOW	Where the impact affects the environment in such a way that natural, cultural and social functions and processes continue, albeit in a slightly modified way.
MEDIUM	Where the affected environment is altered, but natural, cultural and social functions and processes continue, albeit in a modified way.
HIGH	Where natural, cultural and social functions or processes are altered to the extent that it will temporarily or permanently cease.

3.4 SIGNIFICANCE

“Significance” attempts to evaluate the importance of a particular impact, and in doing so incorporates the above three scales (i.e. extent, duration and intensity).

Rating	Description
VERY HIGH	Impacts could be EITHER: of high intensity at a regional level and endure in the long term ¹ ; OR of high intensity at a national level in the medium term ; OR of medium intensity at a national level in the long term .
HIGH	Impacts could be EITHER: of high intensity at a regional level and endure in the medium term ; OR of high intensity at a national level in the short term ; OR of medium intensity at a national level in the medium term ; OR of low intensity at a national level in the long term ; OR of high intensity at a local level in the long term ;

¹ For any impact that is considered to be “Permanent” apply the “Long-Term” rating.

Rating	Description
	OR of <i>medium intensity</i> at a <i>regional level</i> in the <i>long term</i> .
MEDIUM	Impacts could be EITHER: of <i>high intensity</i> at a <i>local level</i> and endure in the <i>medium term</i> ; OR of <i>medium intensity</i> at a <i>regional level</i> in the <i>medium term</i> ; OR of <i>high intensity</i> at a <i>regional level</i> in the <i>short term</i> ; OR of <i>medium intensity</i> at a <i>national level</i> in the <i>short term</i> ; OR of <i>medium intensity</i> at a <i>local level</i> in the <i>long term</i> ; OR of <i>low intensity</i> at a <i>national level</i> in the <i>medium term</i> ; OR of <i>low intensity</i> at a <i>regional level</i> in the <i>long term</i> .
LOW	Impacts could be EITHER of <i>low intensity</i> at a <i>regional level</i> and endure in the <i>medium term</i> ; OR of <i>low intensity</i> at a <i>national level</i> in the <i>short term</i> ; OR of <i>high intensity</i> at a <i>local level</i> and endure in the <i>short term</i> ; OR of <i>medium intensity</i> at a <i>regional level</i> in the <i>short term</i> ; OR of <i>low intensity</i> at a <i>local level</i> in the <i>long term</i> ; OR of <i>medium intensity</i> at a <i>local level</i> and endure in the <i>medium term</i> .
VERY LOW	Impacts could be EITHER of <i>low intensity</i> at a <i>local level</i> and endure in the <i>medium term</i> ; OR of <i>low intensity</i> at a <i>regional level</i> and endure in the <i>short term</i> ; OR of <i>low to medium intensity</i> at a <i>local level</i> and endure in the <i>short term</i> .
INSIGNIFICANT	Impacts with: <i>Zero to very low intensity</i> with any combination of extent and duration.
UNKNOWN	In certain cases it may not be possible to determine the significance of an impact.

3.5 STATUS OF IMPACT

The status of an impact is used to describe whether the impact would have a negative, positive or zero effect on the affected environment. An impact may therefore be negative, positive (or referred to as a benefit) or neutral.

3.6 PROBABILITY

“Probability” describes the likelihood of the impact occurring.

Rating	Description
IMPROBABLE	Where the possibility of the impact to materialise is very low either because of design or historic experience.
PROBABLE	Where there is a distinct possibility that the impact will occur.
HIGHLY PROBABLE	Where it is most likely that the impact will occur.
DEFINITE	Where the impact will occur regardless of any prevention measures.

3.7 DEGREE OF CONFIDENCE

This indicates the degree of confidence in the impact predictions, based on the availability of information and specialist knowledge.

Rating	Description
HIGH	Greater than 70% sure of impact prediction.
MEDIUM	Between 35% and 70% sure of impact prediction.
LOW	Less than 35% sure of impact prediction.

3.8 LOSS OF RESOURCES

“Loss of resource” refers to the degree to which a resource is permanently affected by the activity, i.e. the degree to which a resource is irreplaceable.

Rating	Description
LOW	Where the activity results in a loss of a particular resource but where the natural, cultural and social functions and processes are not affected.
MEDIUM	Where the loss of a resource occurs, but natural, cultural and social functions and processes continue, albeit in a modified way.
HIGH	Where the activity results in an irreplaceable loss of a resource.

3.9 DEGREE TO WHICH IMPACT CAN BE MITIGATED

This indicates the degree to which an impact can be reduced / enhanced.

Rating	Description
NONE	No change in impact after mitigation.
VERY LOW	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact.
LOW	Where the significance rating drops by one level, after mitigation.
MEDIUM	Where the significance rating drops by two to three levels, after mitigation.
HIGH	Where the significance rating drops by more than three levels, after mitigation.

3.10 REVERSIBILITY OF AN IMPACT

This refers to the degree to which an impact can be reversed.

Rating	Description
IRREVERSIBLE	Where the impact is permanent.
PARTIALLY REVERSIBLE	Where the impact can be partially reversed.
FULLY REVERSIBLE	Where the impact can be completely reversed.

4. COMPETENT AUTHORITY CONSULTATION

PASA will be consulted at the following stages / steps during the EIA Phase:

- PASA will be notified of the release of the EIR for comment; and
- The updated EIR, together with any comments received, will be submitted to PASA for consideration and decision-making.

5. PUBLIC PARTICIPATION PROCESS

Tasks that will be undertaken to ensure adequate public consultation during the EIA Phase includes the following:

- The EIR will be published for a 30-day review / comment period. The following tasks will be undertaken in order to notify I&APs of the release of the EIR:

- > A notification letter (with an Executive Summary of the EIR) will be sent to all registered and identified I&APs to inform them of the release of the EIR and where the full report can be reviewed.
- > Copies of the full report have been made available on the CCA website (www.ccaenvironmental.co.za) and at the Cape Town Central Library (Drill Hall, Darling Street, Cape Town).
- The decision taken by PASA will be distributed to all registered I&APs on the project database as part of the statutory appeal period.