

## 11 ENVIRONMENTAL AND SOCIAL MANAGEMENT PROGRAMME

This chapter presents the ESMP prepared for the proposed well drilling activities, as required in terms of Appendix 4 of the EIA Regulations 2014, as amended.

### 11.1 INTRODUCTION

#### 11.1.1 Scope and Objectives

The objectives of this ESMP include the following:

- Meet South African EIA legislation, notably Appendix 4 of the EIA Regulations 2014, as amended, and international laws and conventions.
- Operationalise oil and gas industry good practices and the operator’s own project standards.
- Set out mitigation required to ensure the negative impacts associated with the proposed exploration activities (as assessed in Chapters 9 and 0) are avoided and, where they cannot be avoided, are minimised.
- Provide an implementation mechanism, by project phase, for project controls and mitigation measures identified in the ESIA Report (as presented in Chapters 9 and 0).
- Establish a monitoring programme and record-keeping protocol against which the operator and its contractor’s/sub-contractor’s performance can be measured and to allow for corrective actions or improvements to be implemented when needed.
- Provide protocols for dealing with unforeseen circumstances such as unplanned events or ineffective mitigation measures.

#### 11.1.2 ESMP Structure

Description of the structure and content of the ESMP is given in Table 11-1 below.

**TABLE 11-1: DESCRIPTION OF THE STRUCTURE AND CONTENT OF THE ESMP**

Section	Contents
Section 11.1	<b>Introduction</b> Objectives and structure of the ESMP.
Section 11.2	<b>Summary of the Key Environmental and Social Sensitivities</b> Key sensitivities in the study area and implications for the project.
Section 11.3	<b>Supporting Documentation</b> Main documentation supporting the implementation of the ESMP.
Section 11.4	<b>Roles and Responsibilities</b> Key roles and responsibilities for the implementation and management of the ESMP.
Section 11.5	<b>Training, Awareness and Competency</b> Training and awareness provisions for the operator’s staff and Contractors involved in the project.
Section 11.6	<b>Compliance Verification and Corrective Actions</b> Inspections, monitoring and auditing requirements to ensure compliance with the ESMP and implementation of corrective actions.

Section	Contents
Section 11.7	<b>Management of Change</b> Procedure to be followed to respond to changes to the ESMP and/or drilling design.
Section 11.8	<b>Communication</b> Communication channels between the operator, the contractor(s) and external stakeholders.
Section 11.9	<b>Document Control and Reporting</b> Document control and reporting requirements (internal and external).
Section 11.10	<b>Environmental and Social Mitigation Management Commitment Register</b> Commitments that will be implemented to prevent, minimise or manage significant negative impacts and optimise and maximise any potential benefits of the project.

## 11.2 SUMMARY OF THE KEY ENVIRONMENTAL AND SOCIAL SENSITIVITIES

Key sensitivities in the Project's area of influence are provided in Table 11-2 below.

**TABLE 11-2: KEY SENSITIVITIES IN THE PROJECT'S AREA OF INFLUENCE**

Receptor/ Variable	Key sensitivities in the area of influence
<b>1. Bio-physical considerations</b>	
Upwelling	Block 5/6/7 is primarily located within the Southern Benguela system, although the southern portion of the Block falls within the Agulhas Retroflexion area. A major feature of the Benguela Current is coastal upwelling and Block 5/6/7 is located on the western edge of the Cape Point and Cape Columbine upwelling events. This upwelling is associated with extremely high seasonal production of phytoplankton and zooplankton, and can result in low-oxygen water moving up onto the inner shelf and into nearshore waters.
Benthic Habitats and Species	The drilling activities would be undertaken in the offshore marine environment (60 km from the coastline at its nearest point) where the Southeast Atlantic Unclassified Slope Substratum and Upper-, Mid- and Lower Slope ecosystem types have been rated as of 'Least Concern'. Identified CBA1 and CBA2 areas do, however, occur within 5.4% of the area of interest for drilling. These areas are located at the base of the Cape Point Valley (Cape Lower Canyon ecosystem type) and along a section of the Southeast Atlantic mid- and Lower Slope ecosystem types. The southern portion of the CBA (approximately 1% of area of interest) overlaps with an ammunition dump site where no drilling will take place.
Spawning	The major spawning areas are located on the continental shelf, inshore of the area of interest. Seasonally high abundances of ichthyoplankton (hake, sardine and anchovy eggs and larvae), particularly in late winter and early spring may, however, occur in the inshore portions of the area of interest.
Marine Fauna	The taxa most vulnerable to routine operational discharges are pelagic seabirds, turtles, large migratory pelagic fish and marine mammals. Some of the species potentially occurring in the drill area, are considered regionally or globally 'Critically Endangered' (e.g., southern bluefin tuna, leatherback turtles and blue whales), 'Endangered' (e.g., Black-Browed and Yellow-Nosed Albatross, whale shark, shortfin mako shark, fin and sei whales), 'Vulnerable' (e.g., bigeye tuna, blue marlin, loggerhead turtles, oceanic whitetip shark, dusky shark, great white shark, longfin mako and sperm, Bryde's and humpback whales) or 'Near Threatened' (e.g., striped marlin, blue shark, longfin tuna/albacore and yellowfin tuna).

Receptor/ Variable	Key sensitivities in the area of influence
	The area of interest is located in a main marine traffic route and thus is in an area already experiencing increased vessel traffic and associated impacts (e.g., operational discharges, lighting, etc.).
MPAs and other conservation areas	The area of interest avoids all MPAs and EBSAs. As noted above, CBAs overlap with 5.4% of the area of interest for drilling. The area of interest also overlaps marginally with the proposed Atlantic Southeast 19 IBA.
<b>2. Socio-economic considerations</b>	
Fisheries	Four fishing sectors (demersal trawl, demersal long-line, large pelagic long-line and tuna pole) have historically operated within portions of the area of interest. The other sectors, including the small-scale fisheries, fall outside the area of interest and zones of impact for normal operations (noise, sediment plume and safety zones).
Marine traffic	Block 5/6/7 is located in a main route for marine traffic that passes around southern Africa. Thus, a significant amount of ship traffic can be anticipated in the vicinity of the Block and is, therefore, expected to pass through the area of interest.
Ammunition dumps	Two ammunition dumps occur within Block 5/6/7, one of which also occurs in the area of interest for the proposed exploration drilling.
Onshore logistic base location	The City of Cape Town and Saldanha Bay provide a full range of social services and facilities, including: municipal administration; health and education facilities; and water, electricity and sanitation services. Cape Town is a major metropolitan area that support large and diversified economic sectors and a very large employment base. Saldanha is also a well developed port facility.
Tourism	<p>The wider project area falls into the broadly termed City of Cape Town, Cape Overberg, and Garden Route (Mossel Bay to Knysna) regional tourism areas in the Western Cape, and the Jeffrey's Bay to Gqeberha region in the Eastern Cape. Across all these regions the top tourism and recreational activities include outdoor activities, scenic drives, visits to national parks, culture and heritage, beaches, food and wine.</p> <p>Coastal tourism and recreational activities and services are found primarily in and around Cape Town, while the Langebaan/Saldanha Bay area has the second highest concentration of tourism activities. Small pockets of coastal tourism are found scattered along the entire length of the west coast in small towns dotted along the coastline. It should be noted that the bulk of tourism and small-scale fishing is within 1 nm of the coast.</p>
Shipwrecks	At least two suspected wrecks, the Argo (1942) and the Belgian Fighter (1942), may occur within Block 5/6/7, one of which may occur within the area of interest.
Intangible Cultural Heritage	With regard to the proposed project and Block 5/6/7, there is need to consider terraqueous (territorial and watery) territories which refer to and includes inshore archaeological sites and sites of spiritual significance. These waterways are described as 'living' waters and are believed to play a critical role in spiritual and health management in indigenous groups specifically (First Peoples and Nguni), but also the descendant groups of Europeans in the country and immigrant (specifically southern African and Central African) beliefs and ritual practices at the coast.

### **11.3 SUPPORTING DOCUMENTATION / ACTIONS**

This Section lists the plans / documents / Actions that form part of the overall internal Health, Safety and Environment Management System (HSE-MS) and will be prepared in addition to the ESMP, but only prior to exploration being undertaken.

#### **11.3.1 Well Drilling Design**

TEEPSA will develop and finalise the well drilling design, according to TotalEnergies HQ standards and specifications, prior to going out for tender, including: well location, well depth, well architecture, fluid program, onboard treatment, well abandonment strategy, planning and logistic organisation, etc.

The well drilling details will be compiled into a notification document, which will be submitted to PASA at least 30 days prior to mobilisation.

#### **11.3.2 Contractor HSE Plan**

The purpose of the Contractor HSE Plan is to present its company HSE-MS applicable to the specific project. It will detail the specificities and equipment related to the operations and associated environmental, socio-economic and health aspects, as well as the organisation supporting the project (objectives, resources, documentation, risk management and control, etc.). Part of this document are the aspects related to the management of air emissions, discharges to the sea, waste, spill and related log books.

All staff and sub-contractors are required to comply with this document when working on the project.

#### **11.3.3 Contractor Project Plan**

The drill contractor will prepare a Contractor Project Plan, which deals with HSE aspects specific to the project (e.g., operation specificities, project ESIA main outcomes, specific Emergency Response Plan (ERP), waste management with local facilities, planning, organigram, local content, MMO and PAM scope, etc).

#### **11.3.4 Contractor HSE-MS Bridging document**

The drill contractor will prepare a Bridging Document with their sub-contractors. This will provide, through dedicated key procedures, for effective interfacing of the HSE-MS used by the various companies involved in executing the work both on location and throughout the supply chain.

#### **11.3.5 Contractor Kick-Off Meeting and Crew Awareness**

The objective of the Kick-Off Meeting is to introduce the team, understand the project background, the key environmental and social sensitivities, what needs to be undertaken to mitigate risks and impacts, and also agree on how the work should be undertaken to ensure effectively.

Prior to operation, as part of the kick-off meeting, TEEPSA on-board representative and/or contractor will present an HSE awareness introduction training to ensure the project personnel (including project vessels / drilling unit, MMO, PAM operator, etc. where applicable) are appropriately informed of the purpose and requirements of the overall HSE system and plan, including emergency procedures, spill management, etc., as well as the specificities of the project.

The information presented at the HSE training will be communicated by the contractors to any new staff coming onto site after the initial training course and to all suppliers.

### 11.3.6 Commitments Register

Table 11-6 details the specific management commitments that will be implemented during all project phases (planning, mobilisation, operation and demobilisation) to prevent, minimise or manage significant potential negative impacts and optimise and maximise any potential benefits of the project.

### 11.3.7 Plans and Procedures

This ESMP will form part of an overall HSE-MS which will be prepared before the start of the exploration campaign. It will include at least the documents listed below and will include all of the project controls and mitigation measures detailed in the Commitments Register (see Section 11.3.6).

#### 11.3.7.1 Shipboard Oil Pollution Emergency Plan (SOPEP)

Before mobilisation to site, the drilling contractor will submit for approval to TEEPSA and SAMSA a SOPEP and procedures to be implemented in the event of an accidental spill of oil (or other polluting substances) at sea.

This plan will notably require:

- The implementation of measures to immediately stop the spill (sealing the leak, repairing leaking tanks, etc.).
- Recovery of spilled fluids.
- The notification of TEEPSA and the South African authorities on the spill.
- The implementation of external response measures in the event of a large spill.

Any oil or chemical spills in water must be reported immediately to TEEPSA and regular updates must be sent during pollution clean-up operations.

The SOPEP will include procedures in line with international good practice for the accidental release of chemicals and fuels during exploration activities. The plan will include the following:

- Definition of roles and responsibilities.
- Identification of potential sources of accidental pollution (storage, use, etc.).
- Definition of design standards adopted to ensure the integrity and reliability of the equipment.
- Description of the security systems in place to prevent pollution.
- Inspection reports for the proper maintenance of safety equipment and systems.
- Procedures for handling chemicals and fuels to reduce the risk of accidental pollution (also refer to Section 11.3.7.7 for the Chemical Management Plan).
- An action plan with instructions for the oil pollution prevention team. This is a list of duties the crew members have to fulfil in case of a spill.

#### 11.3.7.2 Emergency Response Plan (ERP)

TEEPSA holds the overarching ERP and any gaps with the contractor ERP (site specific) are addressed in a bridging document. The ERP will establish the procedures for addressing potential emergency situations (e.g., fuel / oil spill, injury, damage to or loss of company / private property or equipment, etc.) that could occur during the

project at the various project sites. The ERP addresses these situations and provides information and direction for addressing the situation as quickly as possible.

The ERP will classify emergencies into severity levels and include emergency procedures that address the potential degrees of impact / risk relating to various scenarios (including well control incident, oil / chemical spill, explosion / fire, helicopter incident, vessel incident, man overboard / missing person, medical emergency, loss of office service and road transport incident).

- A low-level emergency (accident or incident) is one that can be handled at the site and involves no serious injuries, no disruptions of operations and no publicity. There are no national or international implications.
- A moderate-level emergency (emergency) may involve a single serious injury, temporary disruption of operations, some publicity or the likelihood thereof, with possible implications at the national level.
- A high-level emergency (crisis) would involve one or more fatalities or multiple serious injuries, sustained disruption of operations, significant publicity or the certainty thereof, plus implications at the national and possibly international level. There might be a potential threat to the viability of a company.

#### 11.3.7.3 Blow-Out Contingency Plan (BOCP)

The BOCP focuses on well control operations and will set out the detailed response plan and intervention strategy to be implemented in the event of a blow-out. It ensures response times are minimised and that the most efficient and effective contingency measures are implemented.

Since potential blow-outs and subsequent intervention techniques may be inherently different, it is impractical to cover all possibilities in a general contingency document. However, for rapid response, a structured organisation and technical guidelines, with examples and trigger mechanisms, is essential. These will be detailed in the BOCP, which is an internal document.

#### 11.3.7.4 Oil Spill Contingency Plan (OSCP)

##### **Introduction**

As standard practice, an OSCP will be prepared for each drilling operation for approval by SAMSA, PASA and DFFE. The OSCP is the operational internal document prepared and aligned with local and national regulations, including the South Africa's National Oil Spill Contingency Plan (NOSCP), applicable international conventions and internal rules. The primary objective of the OSCP is to identify all possible spill scenarios, level of response requirements and set in motion the necessary actions to stop any discharge of oil and to minimise its effects. It also:

- Provides an emergency notification system, including a standardised format for oil spill notification.
- Describes the escalation monitoring process from Tier 1 to Tier 2 and Tier 3 incidents (refer to Box 11-1).
- Outlines the system for command and control of the oil spill response operations and organisation.
- Provides checklists of actions for key personnel during an oil spill.
- Provides strategy and tactics to respond to the different types and levels of oil spills using local and international resources.

**BOX 11-1: TIERED PREPAREDNESS AND RESPONSE**

Oil spill response planning is based on the principal of a tiered response. Tiered Preparedness and Response gives a structured approach to both establishing oil spill preparedness and undertaking a response. It allows potential oil spill incidents to be categorised in terms of their potential severity and the capabilities that need to be in place to respond (IPIECA, 2007). Conventionally the concept has been considered as a function of size and location of a potential oil spill, with three tiers typically defined (see table below). Tier 1 being the lowest category of response and Tier 3 being the highest category requiring response from Government and international assistance (South Africa's NOSCP).

Tier 1	Minor spills that are quickly controlled, contained and cleaned up using local (onsite or immediately available) company/contractor owned equipment and personnel resources. For offshore facilities, local resources could include those at the facility, on nearby support vessels or at a designated shore support base or staging area.
Tier 2	Tier 2 events are more diverse in their scale and by their nature involve potentially a broad range of impacts and stakeholders. Moderate spills, controlled or uncontrolled, requiring activation of significant regional oil spill response resources and all or most of the Spill Management Team. Tier 2 response resources are varied in their provision and application. Management responsibilities are usually shared in a collaborative approach and a critical feature is the integration of all resources and stakeholders in the response efforts.
Tier 3	Major spills, controlled or uncontrolled, requiring activation of large quantities and multiple types of response resources including those from out of the region, and possibly international sources. Tier 3 events are rare, but have the potential to cause widespread damage and affect many people. Tier 3 response resources are concentrated in a relatively few locations, held in readiness to be brought to the country when needed. Such significant events usually call for the mobilisation of very substantial resources and a critical feature is their rapid movement across international borders and the integration of all resources into a well-organized and coordinated response. The entire Spill Management Team will be required and will likely be supplemented by outside organisations.

Thus, the OSCCP provides for a comprehensive response to all oil and chemical pollution emergencies in the marine environment regardless of how costs might be attributed or ultimately recovered. In updating the OSCCP for each well, TEEPSEA will review the capacity of local resources and, where necessary, it will be adjusted/made specific to local context and any short-comings in local resources will be addressed where required.

The OSCCP will be periodically tested in order to ensure an effective and co-ordinated response to oil spill situations.

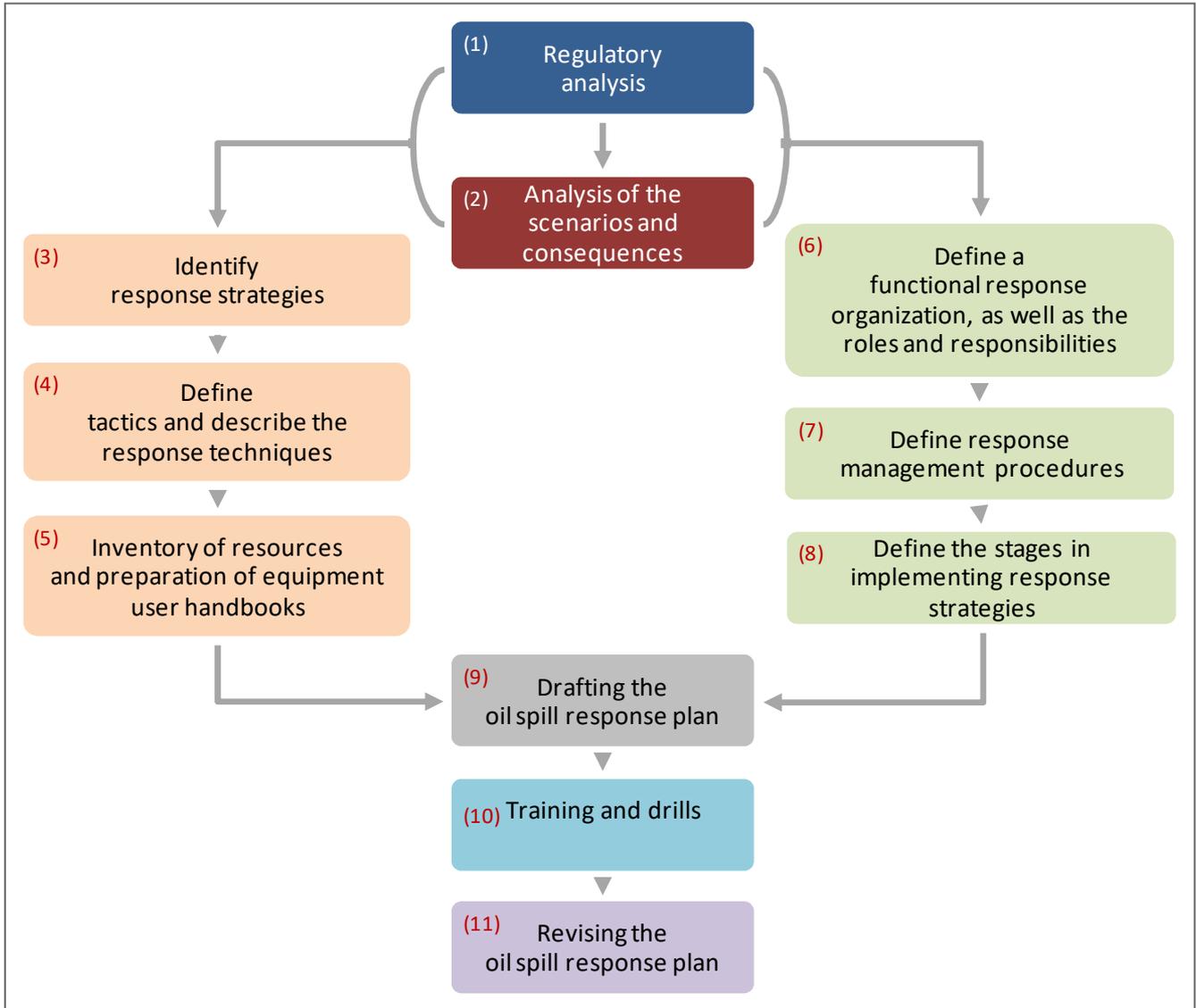
**Spill Contingency Planning Process Overview**

To achieve the objective of developing an effective response through an appropriate preparedness, oil spill contingency planning is based on a structured process (see Figure 11-1), resulting into an OSCCP.

The main steps are listed below:

- **Step one:** Once the operations are defined, the international and national regulatory framework and environmental/societal context are analysed to carefully define the requirements and expectations to be met, during the preparation and in case of a spill.
- **Step two:** All oil spill scenarios are identified and analysed, together with their consequences and classified following the international tiered approach (refer to Box 11-1).
- **Step three/four/five:** For each representative scenario, a response strategy is developed, appropriate tiered response resources are determined for an effective, proportionate and sustainable response and a functional incident management organization is set up to implement the response, to operate effectively at all tier levels, with clear roles and responsibilities for each party involved.
- **Step six:** An OSCCP is developed.

- **Step seven:** Personnel are trained, and the OSCP is tested through drills/exercises to verify the adequacy and effectiveness of the preparation.
- **Step eight:** As operations evolve and/or exercises show a need for, the OSCP is updated.



**FIGURE 11-1: SPILL CONTINGENCY PLANNING PROCESS OVERVIEW**

Source: TEEPSA

## Structure of a standard TotalEnergies OSCP

The structure of a standard TotalEnergies OSCP is outlined in Box 11-2 below.

### **BOX 11-2: STRUCTURE OF A STANDARD TEEPSA OIL SPILL CONTINGENCY PLAN**

#### **Introduction**

The introduction provides the overview and structure of the OSCP, including:

- the generic elements of any emergency document, confirming that the plan is approved and up to date, as well as a circulation list;
- the scope of application and list of previous versions of the oil spill response plan;
- the reference documents related to the oil spill response plan;
- information situating the plan in the more general context of the response, emphasising the priorities concerning the safety and security of the personnel; and
- the instructions for use to ensure that the plan is easy to use, specifying the scope of each volume and the operational supports, as well as the personnel concerned.

#### **Volume 1: Action Plan (Operational Document)**

Volume 1 is an overview of the operational and organisational support structure for oil spill response. It is used by the various Emergency Response teams and it defines:

- “What to do”: through the Action Plans,
- “How to do it” through the Operational Supports.

This volume consists of two Action Plans and Operational Supports. These action plans are the guideline for the various emergency response teams to initiate, sustain and manage the response operations. They provide:

- A description of the overall TEEPSA oil spill response organisation, and its interfaces with the national authorities of South Africa.
- Guidelines on initial response actions.
- A summary of the oil spill response strategy of TEEPSA, according to the various levels of seriousness of the incident (Tier 1, 2 and 3).
- A series of job tickets for the various positions in the emergency teams, to allow personnel to act promptly in case of an incident.

#### **Volume 1.1: Action Plan for personnel at the Incident Command Post (ICP) at TEEPSA headquarters, Cape Town;**

The objective of Volume 1.1 is to set up the initial actions and management of the incident. It helps the ICP staff to:

- Understand the responsibilities of the different actors in the response (headquarter internal teams, national organisms, external support, etc.).
- Rank the event according to the tiered level of severity (Tiers 1 - 3).
- Set up a functional organisation according to the extent of the spill.
- Understand their roles and responsibilities and complete their tasks throughout all the response phases.
- Define and manage operationally the different stages of one or more oil spill response strategies according to the extent and type of spill, on the basis of representative scenarios and/or strategic decision trees and predefined actions.
- Manage the response stages via procedures associated with standard forms and documents (immediate actions, alert, internal and external mobilisation, preparing a response action plan, internal and external communication, managing the end of response operations, etc.).

**BOX 11-2 cont.**

**Volume 1.2: Action Plan intended for personnel in the Advanced Command Post (ACP) on the drilling unit**

Volume 1.2 has the same objectives as Volume 1.1, but scaled for the ACP on the drilling unit.

**Operational supports**

They consist of a series of documents designed to assist the tasks of personnel involved in ICP and in the ACP. The list of Operational Supports for a standard TEEPSA OSCP is presented below.

<b>Operational Support N°1: Description of the Project and Facilities</b>
Description of the drilling operations: characteristics of installations, location maps, logistics support and distance between main facilities.
<b>Operational Support N°2: Characteristics of Oil and Hydrocarbon Products</b>
Characteristics of hydrocarbon products which could be involved in an oil spill.
<b>Operational Support N°3: Fate &amp; Behaviour of Oil at Sea</b>
Assessment of the likely behaviour of hydrocarbon products if spilled at sea. Principles of movements of oil. MetOcean Data – Results of modelling studies.
<b>Operational Support N°4: Material Safety Data Sheets (MSDS)</b>
Material Safety Data Sheets of hydrocarbon products which could be spilled.
<b>Operational Support N°5: IMT Coordination for Offshore Monitoring and Response Strategies</b>
Offshore response options: monitoring, containment and recovery, mechanical dispersion, chemical dispersion
<b>Operational Support N°6: Onsite Coordination of Offshore Spill Response Tactics</b>
Offshore response operations: safety procedures, setup, management and termination.
<b>Operational Support N°7: IMT Coordination for Shoreline Survey and Response Strategies</b>
Port response options: Containment and recovery at the quayside, protection and clean-up. Shoreline response options: shoreline surveys, containment and recovery in the coastal area, shoreline clean-up operations, management of oily wastes collected.
<b>Operational Support N°8: Onsite Coordination of Shoreline Response Tactics</b>
<ul style="list-style-type: none"> <li>• Shoreline response operations: safety procedures, setup, management and termination.</li> <li>• Shoreline protection</li> <li>• Oiled shoreline survey (SCAT)</li> <li>• Shoreline clean-up.</li> <li>• Waste management: technical recommendations.</li> </ul>
<b>Operational Support N°9: Use of Offshore Monitoring, Response Tools and Equipment</b>
Practical guidelines for monitoring and deployment of oil spill resources offshore. Use of tools to assist in the management of the response, including guidelines for the use of GPS, digital camera and dedicated software for documenting and reporting on aerial surveillance, the launching of drifter buoys, the use of dedicated oil spill response software for calculating the trajectories of oil slicks and quantifying oil on the water.
<b>Operational Support N°10: Emergency Directory</b>
Lists of emergency contacts for oil spills.
<b>Operational Support N°11: Inventory of Oil Spill Response Resources</b>
<ul style="list-style-type: none"> <li>• Resources available on site.</li> <li>• Resources existing in South Africa (additional TEEPSA equipment, other operators, national resources, oil spill contractors).</li> <li>• Resources which TEEPSA could mobilise from outside South Africa.</li> </ul>
<b>Operational Support N°12: Forms</b>
Forms which might be needed during an incident, e.g., Notification, mobilisation of resources, etc.
<b>Operational Support N°13: Oiled Wildlife Response</b>
Reference to the arrangements in place in South Africa.
<b>Operational Support N°14: Sensitivity Mapping</b>
Sensitivity maps showing sensitivities on the shoreline and in coastal area.

**BOX 11-2 cont.**

**Volume 2: General context and OSCP management (non-operational document)**

This volume presents the justification for the oil spill response strategies selected for this operation. TEEPSA oil spill response strategies are identified by following a methodology advocated by TotalEnergies Group worldwide and compliant with internal standards and best practices for oil spill response. The methodology takes into account:

- The legal context (international, regional and national).
- An analysis of the environmental context and potential impacts, which is used to identify sensitive areas on the coastline of South Africa, translated into coastal sensitivity maps.

The methodology is also based on a risk analysis which leads to:

- The identification of possible oil spill scenarios.
- The analysis of the behaviour of hydrocarbon products which could be spilled.
- The hierarchy of incidents based on their seriousness and potential impacts (Tier 1, 2 and 3), and the appropriate response strategies to minimise the impacts.

### 11.3.7.5 Stakeholder Engagement Plan

#### **Objectives**

The Stakeholder Engagement Plan, prepared by TEEPSA in collaboration with the contractor, will provide the framework to ensure effective engagement with external stakeholders and detail the planning for information disclosure, stakeholder engagements and dealing with expectations / grievances. It will ensure that the right stakeholders are notified timeously about the project activities with information that is accurate and transparent. The plan will provide for stakeholder concerns and grievances to be responded to in an efficient and coordinated manner.

This plan will set out the specific measures to be taken to ensure the project is communicated to stakeholders and to minimise the potential negative impacts of the Project on human and socio-economic receptors, specifically:

- A public information and disclosure programme covering all TEEPSA activities and phases to ensure that the public are informed of the exploration activities (specifically onshore and nearshore activities).
- Management of community expectations related to local procurement, local content, and local employment opportunities.
- Establishment of a functional grievance mechanism that allows stakeholders to lodge specific grievances related to operation.

The aim of such engagement is to ensure open communication, direct communication and consistent communication with stakeholders that may be affected by operations.

#### **Stakeholder Database**

A stakeholder database will be developed and maintained. At minimum, the database will contain the contact details of:

- Any person that submitted a request to be included in the database at any time.
- Any person that has submitted written comments or attended any public meetings.
- All organs of state which have jurisdiction in respect of the Project.

The database will be built on and customised to accurately cover the stakeholders of each activity. Any and all forms of correspondence between the Project and registered stakeholders will be recorded under a Stakeholder Database.

### **Notifications**

A public information and disclosure programme will be implemented to ensure stakeholders are regularly informed of exploration activities. This will support ongoing engagement and assist in drawing out any ongoing or new issues and concerns. Focus should be placed on Saldanha Bay (if used as the onshore logistics base).

Notifications will provide the details and timing of the drilling, including amongst other:

- Notification to stakeholders (including local authorities, fishing associations, small-scale fisheries, indigenous groupings and leadership, civil society, etc.) prior to and after each drilling campaign.
- Notification during drilling via navigational warnings via Navigational Telex (Navtext) and Cape Town radio (Channel 16 VHF; Call sign: ZSC) for the duration of the activity.
- Meetings with stakeholders, as required.

### **Information Disclosure**

TEEPSA will disclose project information<sup>64</sup> containing all the relevant facts in a truthful and transparent manner. Through the disclosure, relevant information or documentation will be broadly available to stakeholders, including people with limited access to technology, education, or resources. At minimum this will include:

- Placing hardcopies of relevant documents at public venues at beneficiary communities,
- Placing hardcopies of relevant documents at municipal offices,
- Main documents will be prepared in English (as the primary official language),
- Translation of key documents to local indigenous languages where required.
- Meetings with stakeholders, as required.
- Monitoring of and engaging with other vessels.

The drilling unit will be equipped with appropriate radar and communications to ensure that other vessels adhere to the safe operational limits. Other vessels (e.g., fishing, transport, etc.) will be alerted about the drilling operation.

Any fishing vessels at a radar range of 24 nm from the drilling unit will be notified via radio regarding the safety requirements around the vessel / drilling unit.

### **Concerns and Grievances Management**

TotalEnergies adheres to the United Nation Guiding Principles (UNGP) on Business and Human Rights and is, therefore, committed to ensure all its stakeholders have access to an effective Grievance Mechanism. The UNGP give a framework for companies to respect Human Rights through two main principles: (1) avoid causing or contributing to adverse Human Rights impacts through their own activities (directly or through their contractors) and in case of adverse impacts, (2) provide remediation through a Grievance Mechanism at operational level.

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<sup>64</sup> Where information is deemed to be sensitive or private in nature, TEEPSA may elect to not release this information. Nevertheless, sufficient information will be provided for stakeholders to become aware and understand the components of the exploration so as to make informed comments and representations

Thus, outside the ESIA public participation process, TEEPSA will put in place prior to its operations a grievance procedure detailing how to manage stakeholder grievances related to negative or perceived negative impacts caused by Project related activities.

In compliance with international standards, this procedure will protect the complainant's rights to access to information, access to the grievance procedure, and the right to have one's confidentiality and/or anonymity protected, if requested.

This grievance procedure will be promoted among external stakeholders through different possible access points and communication means (TEEPSA grievance administrator, toll free number, web page, email, complaint boxes, posters and leaflets, etc).

The key steps of the process consists of:

- Receiving and registering the grievance;
- Acknowledgement of the grievance received and informing stakeholders about the follow-up actions;
- Assessing and investigating the grievance;
- Proposing a solution;
- Implementing the solution when the solution is approved by the complainant; and
- Closing-out the grievance when no further action is required.

After a solution is proposed to the complainant, different levels of resolution are possible, depending on the acceptance of the solution by the complainant, until a final solution is satisfactory and accepted. TEEPSA will appoint a Grievance Management Committee to support the resolution process internally and will require support from an external party when necessary.

TEEPSA will ensure the complainant is informed and involved all along the resolution process.

All grievances will be documented to ensure they are handled properly and within the timeframe described in the procedure. It must also reflect that Human Rights have been respected all along the process.

#### 11.3.7.6 Waste and Discharge Management Plan

##### **Objectives**

The Waste Management and Discharges Plan establishes procedures for the storage, collection, management, and disposal of waste, including liquid and solid waste and hazardous and non-hazardous wastes. Certain waste will be treated and disposed of offshore, while other waste will be transported ashore. The plan will, therefore, describe the procedures to be followed to ensure the treatment, transfer and/or disposal of waste both offshore and onshore.

##### **Principles**

Waste management during the drilling campaign will be planned in accordance with the waste prevention and management principles described in Table 11-3 below.

**TABLE 11-3: WASTE PREVENTION AND MANAGEMENT PRINCIPLES**

Principle	Rules to be implemented
Minimisation of waste generated	<ul style="list-style-type: none"> <li>In the Project supply policy, select the equipment and supplies that generate the least waste (by minimising packaging).</li> <li>Select the equipment and supplies that generate the least hazardous waste.</li> </ul>
Storage security	<ul style="list-style-type: none"> <li>The waste will be handled and stored according to its nature and its risk class, in compliance with hygiene and safety rules.</li> <li>A waste storage area will be defined on the drilling unit and project vessels. Compatible waste will be stored together.</li> <li>Any hazardous waste will be stored separately, on retention. The area will be adequately ventilated if the waste is flammable.</li> <li>Access to waste storage areas will be controlled.</li> <li>The waste storage areas will be kept in good order and clean.</li> </ul>
Waste management hierarchy	Waste will be managed by applying the following order of priority: <ul style="list-style-type: none"> <li>Avoid generating waste.</li> <li>Minimise the generation of waste.</li> <li>Reuse waste (especially for reusable non-hazardous waste).</li> <li>Recycle waste.</li> <li>Onboard treatment and incineration (when relevant and authorised).</li> <li>Dispose of waste in compliance with applicable regulations and rules of good practice.</li> </ul>
Recording and monitoring of waste generated	<ul style="list-style-type: none"> <li>A register of the waste generated will be kept up to date in order to identify the nature and quantity of the waste generated, ensure its traceability, and identify if possible, the types of waste that can be avoided.</li> <li>This register will include monitoring of waste evacuated ashore and their disposal, specifying the providers mandated for their management, the disposal method agreed. The transfer and waste disposal forms will be kept for traceability.</li> </ul>
Staff training	The workforce will be trained: <ul style="list-style-type: none"> <li>Waste management.</li> <li>Protection of the environment and the impacts associated with poor waste management, and how to avoid these impacts.</li> <li>To promote the reuse and recycling of waste.</li> <li>Treatment waste in accordance with the management plan by type and risk class.</li> <li>Adopting the necessary safety measures when handling hazardous waste.</li> <li>Maintaining traceability records.</li> </ul>

**Compliance with International Conventions**

The drilling unit and all project vessels will have equipment, systems and protocols in place for prevention of pollution by oil, sewage and garbage in accordance with the MARPOL convention. MARPOL 73/78 was developed by the IMO with an objective to minimise pollution of the oceans and seas, including dumping, oil and air pollution.

Specific MARPOL requirements are included in the detailed Environmental and Social Mitigation Management Commitment Register (see Section 11.10).

## Management of Discharges and Emissions

The Waste and Discharge Management Plan will also provide for the management of discharges linked to activities. The plan will include procedures that comply with national regulations and international good practice guides. The plan will include the following:

- Identification and characterisation of discharges and emissions.
- Definition of qualitative and quantitative treatment objectives for discharges and emissions.
- Definition of responsibilities for the measurement, recording and reporting of discharge / emission characteristics.
- Definition of resources, tools and methods to be used to measure, record and report discharges and emissions.
- Definition of the means (equipment and procedures) used to treat these discharges and emissions in accordance with the defined limits.

### 11.3.7.7 Chemical Management Plan

A Chemical Management Plan will be developed by the contractor to detail the measures to minimise potential pollution. The plan will be applied to all phases of the Project and will include all hazardous products used during the Project, including drilling fluids and cement used during well drilling. The Chemical Management Plan is based on the principles of life cycle assessment. A standard plan will include:

- Inventory of chemical products (identification, classification, quantification and method of delivery);
- Product properties (dangerousness, toxicity, health and safety recommendations) based on product safety sheets (Safety data sheets, eco-toxicological data);
- Evaluation of the use of alternative products;
- Storage and handling procedures including personal protective equipment for personnel;
- Emergency procedures;
- Evaluation of recycling possibilities; and
- Disposal procedures for unused products (return to the supplier for example).

### 11.3.7.8 Preventive Maintenance Plan

A Preventive Maintenance Plan will be available on board the drilling unit and all project vessels in order to minimise the risk of mechanical failure likely to lead to reduced efficiency (e.g., sewage treatment plan, incinerator, macerator/grinder, oil/water separator, etc.) and other unplanned events (e.g., oil leaks or diesel spills). Control and maintenance procedures will be implemented at regular intervals by the various service providers.

This plan will provide for the implementation of leak detection and maintenance programmes for:

- valves, flanges, fittings, seals, hydraulic systems, hoses, etc.
- all diesel motors and generators receive adequate maintenance to minimise soot and unburnt diesel released to the atmosphere.
- Waste treatment facilities, e.g., sewage treatment plan, incinerator, macerator/grinder, etc.

This plan will also detail the procedure to follow if certain facilities (e.g., oil/water separator) are not available due to maintenance or overload.

This plan will also ensure that all equipment (e.g., wellheads, BOPs, etc.) that has been used in other regions is thoroughly cleaned prior to deployment.

#### 11.3.7.9 Ballast Water Management Plan

Ballast water discharge will follow the requirements of the IMO 2004 International Convention for the Control and Management of Ships' Ballast Water. All ships engaged in international traffic are required to manage their ballast water to a certain standard, according to a ship-specific Ballast Water Management Plan. This plan deals with the ballast water management system on each of the project vessels, including how it operates and procedures for monitoring and reporting, including ballast log book.

#### 11.3.7.10 Marine Faunal Management Plan

##### **Objectives**

The Marine Fauna Management Plan will set out the specific measures to be taken to minimise the impacts of the Project on marine fauna for specific activities (e.g., VSP activities). These impacts are essentially:

- The impacts linked to noise emissions in the marine environment, mainly during the operation of VSP.
- Possible impacts related to direct collisions with cetaceans or turtles.

This plan will implement the relevant mitigation measures described in the detailed Environmental and Social Mitigation Management Commitment Register (see Section 11.10).

##### **Monitoring and detection of marine faunal**

At least two MMOs (one with PAM training) will be on board the drilling unit during VSP operations. Their function will be to identify and monitor the presence of marine fauna in the mitigation zone and to inform the contractor when measures must be taken to avoid or reduce the potential impacts on these species.

During the VSP survey, as a minimum, one MMO will be on watch during daylight hours for the pre-shoot observations and when the acoustic source is active, and one possible PAM operator (subject to a risk assessment indicating that the PAM equipment can be safely deployed considering the metocean conditions) will be on duty during daylight and night-time hours for the pre-shoot observations and when the acoustic source is active.

The roles, responsibilities and necessary qualifications/experience of the MMOs and PAM operators are defined in Sections 11.4.3 and 11.4.4, repetitively.

##### **Reporting**

Once the VSP acquisition is complete, the MMOs (and possibly PAM operator) will compile a report summarising their findings and observations during the survey/acquisition, and compliance levels with achieving the performance objectives as detailed in the commitment register. This report will be included as part of the ESMP close-out compliance report, which will be submitted to competent authority at the end of the drilling campaign.

#### 11.3.7.11 Corrective Action Plan

Events (incidents / accident) will undergo a root cause analysis, while non-compliances identified during audit findings (see Section 11.6.2) will be investigated to identify underlying causes to non-compliance situations and then rectified. Management actions will be taken to correct the underlying causes behind the audit findings and

improvements will be made before another audit is conducted. This audit process allows for problems to be corrected, compliance to be improved and prevention of the same findings during subsequent audits.

Where corrective actions are deemed necessary, specific measures will be developed, with designated responsibility and timing, and implemented. In this way, continuous improvement in performance will be achieved. Corrective actions will be captured in a Corrective Action Plan, which will document the actions to correct an issue, problem, non-compliance or underperformance. It is essentially a plan to improve performance and/or reduce risk.

#### **11.4 ROLES AND RESPONSIBILITIES**

The project will have dedicated, competent personnel that will manage and oversee the HSE aspects over the project lifecycle. TEEPSA, as operator of the block, will retain the primary responsibility for meeting environmental and social commitments throughout the project life span.

The key HSE management roles and responsibilities supported by a project specific organogram will be defined by the drilling contractor and validated by the operator prior to the commencement of any exploration activities.

##### **11.4.1 TEEPSA**

TEEPSA will be responsible for the overall implementation of the ESMP and meeting the environmental and social commitments. TEEPSA will have the following key responsibilities:

- Develop the drilling design for the Tender Document(s), which will include this ESMP.
- Selecting the preferred contractor(s) and ensuring that the ESMP forms part of the contract for all contractors.
- Ensuring the contractors implement the ESMP and any additional approval conditions contained in the EA issued by DMRE.
- Ensuring that environmental audits are undertaken to measure compliance with the agreed environmental performance objectives.
- Ensuring that environmental monitoring and reporting are undertaken by all contractors.
- Engaging with DMRE, PASA and relevant stakeholders when necessary at key stages of the project.
- Coordinating with contractors to ensure that key stakeholders are timely informed about the project activities, and that concerns and questions are responded to and grievances are managed properly, as per the Stakeholder Engagement Plan.
- When considered necessary, appoint a TEEPSA representative onboard the drilling unit to ensure compliance with the various commitments and supervise contractor coordination, especially with MMO and PAM personnel.

##### **11.4.2 Drilling Contractor**

The drilling contractor, appointed by TEEPSA, shall have overall responsibility for the specified exploration activities and the management of any sub-contractors. All obligations endorsed by TEEPSA shall apply to the contractors and any sub-contractors. TEEPSA shall inform the contractors of these obligations in the appointment contract.

The contractor shall:

- Be responsible for and convey the requirements of the ESMP to all staff and any sub-contractors (including MMOs, PAM operators and other subcontractors, e.g., support vessels, helicopter, emergency support, catering, etc.), and ensure that they comply with their obligations.
- Ensure that sufficient resources are deployed in order to efficiently implement this ESMP.
- Ensure that personnel with responsibilities (e.g., MMOs, PAM operators, etc) are adequately trained and experienced and are supported with essential resources.
- Ensure that all staff are given an environmental and social induction and that further training is undertaken at crew changes.
- Conduct monitoring, auditing and implement corrective actions as per the requirements of the ESMP.
- Establish and maintain a functional grievance mechanism that allows stakeholders to submit specific grievances related to operations, by ensuring they are informed about the process and that resources are mobilized to manage the resolution of all grievances.
- Be responsible for ensuring the health and safety of all personnel on the drilling unit and project vessels.

#### 11.4.3 Marine Mammal Observers (MMOs)

MMOs are a requirement for VSP operations. As a minimum, the MMOs must have the following qualifications / experience:

- Experience in seabird, turtle, large pelagic fish and marine mammal identification and observation techniques.
- Certification from the Joint Nature Conservation Committee (JNCC) or an equivalent body, e.g., Bureau of Ocean Energy Management (BOEM).
- The lead MMO should have an appropriate graduate degree and relevant seafaring experience.
- Safety certificate (BOSIET or equivalent).
- Medical certificate (OGUK, ENG1 or equivalent).

The MMO shall have the following responsibilities during VSP operations:

- Provide effective regular briefings to crew members, and establish clear lines of communication and procedures for onboard operations.
- Record airgun activities, including sound levels, “soft-start” procedures and pre-firing regimes.
- Observe and record responses of marine fauna to VSP operations from optimum vantage points, including penguin, large pelagic fish (e.g., shoaling tuna, sunfish, sharks), turtle and cetacean incidence and behaviour and any mortality or injuries of marine fauna as a result of VSP operations. Data captured should include species identification, position (latitude/longitude), distance/bearing from the drilling unit, swimming speed and direction (if applicable) and any obvious changes in behaviour (e.g., startle responses or changes in surfacing/diving frequencies, breathing patterns) as a result of the VSP activities. Both the identification and the behaviour of the animals must be recorded accurately along with current VSP sound levels. Any attraction of predatory seabirds, large pelagic fish or cetaceans (by mass disorientation or stunning of fish as a result of VSP activities) and incidents of feeding behaviour among the hydrophone streamers should also be recorded.
- Record meteorological conditions at the beginning and end of the observation period, and whenever the weather conditions change significantly.

- Request the delay of start-up or temporary termination of VSP operations, as appropriate. It is important that MMO decisions on the termination of firing are made confidently and expediently, and following dialogue between the observers on duty at the time. A log of all termination decisions must be kept (for inclusion in both daily and “close-out” reports).
- Use a recording spreadsheet (e.g., JNCC, 2017) in order to record all the above observations and decisions.
- Prepare a close-out report summarising the findings of the MMO observations with the records database appended.

#### 11.4.4 PAM Operators

A PAM operator is required during VSP operations at night and during period of poor visibility (this requirement is subject to a risk assessment, being undertaken ahead of the VSP operation, indicating that PAM equipment can be safely deployed considering the metocean conditions). As a minimum, the PAM operators must have the following qualifications/experience:

- Experience in marine mammal detection and identification techniques.
- Experience in appropriate deployment of PAM equipment.
- Certification from JNCC or an equivalent body (e.g., BOEM)
- The lead PAM operator should have an appropriate training certificate and relevant seafaring experience.
- Safety certificate (BOSIET or equivalent).
- Medical certificate (OGUK, ENG1 or equivalent).

The PAM operator will have the following responsibilities during VSP operations:

- Provide effective regular briefings to crew members, and establish clear lines of communication and procedures for onboard operations.
- Ensure that the PAM hydrophone cable is optimally placed, deployed, tested and repaired / replaced (when necessary) for acoustic detections of marine mammals.
- Recording all airgun activities, including timeline log, sound levels, “soft-start” procedures and pre-firing regimes.
- Confirm that there is no marine mammal activity within 500 m of the airgun array prior to commencing with “soft-start” procedures.
- Record species identification, position (latitude/longitude), distance and bearing from the vessel and acoustic source, where possible.
- Record general environmental conditions.
- Request the delay of start-up and temporary shut-down of VSP operations, as appropriate.

#### 11.5 TRAINING, AWARENESS AND COMPETENCY

TEEPSA and the contractor will implement environmental awareness and training as well as ensuring the competency of staff with responsibilities in terms of the ESMP.

TEEPSA will, at the Kick-Off meeting, highlight the contractor’s responsibility in terms of identifying, planning, monitoring, and recording the training needs of personnel whose work may have a significant adverse impact upon safety, the environment and in the community. Employees at all levels will be made aware of the potential impacts of their activities, and the roles and responsibilities in achieving conformance with the ESMP and internal policy and procedures.

The personnel with responsibilities in specific HSE practices will be adequately trained to ensure effective implementation of the work instructions and procedures for which they have responsibilities. This training will include awareness and competency with respect to the following:

- General awareness relating to exploration activities, including environmental and social impacts that could potentially arise from project activities.
- Legal requirements in relation to safety and environmental performance.
- Necessity of conforming to the requirements of the Environmental Authorisation and ESMP, including reporting requirements (i.e. such as incident reporting).
- Activity-specific training (i.e. waste management practices, grievance management).
- Roles and responsibilities to achieve compliance, including change management and emergency response.

Training will take cognisance of the level of education, designation and language preferences of the personnel.

The appointed contractor (and any sub-contractors) will also be required to institute training programmes for its personnel. The contractor will be responsible for site HSE awareness training for personnel working on the project and for identification of any additional training requirements to maintain required competency levels. The contractor training programme will be subject to approval by the operator, and it will be audited to ensure that:

- Training programmes are adequate and all personnel requiring training have been trained; and
- Competency is being verified.

## **11.6 COMPLIANCE VERIFICATION AND CORRECTIVE ACTIONS**

Monitoring and auditing will be undertaken to confirm adequate implementation of the ESMP, as well as the effectiveness of mitigation measures in avoiding or minimising impacts. TEEPSA's and contractor's HSE staff will implement a formal tracking procedure for investigating cause and identifying corrective actions in response to accidents, HSE and/or social non-compliances. Corrective actions include those intended to improve performance, non-compliances and non-conformances.

### **11.6.1 Monitoring**

Monitoring will be conducted to ensure compliance with regulatory requirements and the performance objectives specified in the ESMP, as well as to evaluate the effectiveness of operational controls and mitigation measures. Monitoring will include, but not limited to, those criteria listed in Table 11-4. The main objectives of the monitoring programme include:

- Gathering, recording and analysing data required for regulatory and ESMP purposes.
- Verifying the predictions and conclusions made in the ESIA Report.
- Identifying changes in the physical, biological and social environment.
- Producing information to evaluate environmental performance specified in the ESMP.
- Producing information about emergencies that require an immediate response.
- Obtaining information on the actual and potential environmental and social impacts of exploration activities.
- Using monitoring results as a source of information and as grounds for decision making regarding the design of new mitigation measures.

- Describing whether and to what extent discharges from exploration activities have had impacts on the marine environment.

As a general approach, TEEPSA will ensure that all monitoring programmes comprise the following:

- A formal procedure.
- Use of appropriately calibrated equipment.
- The date, time and monitoring point of each sample is to be recorded.
- Where samples require analysis, these will be preserved according to laboratory specifications.
- Accredited laboratories will be used to undertake sample analyses and/or internal laboratory results will periodically be checked by independent and accredited laboratories.
- Analysis, where relevant, must be carried out in accordance with methods prescribed by the South African National Standards, in terms of the Standards Act, 2008 or similar.
- Monitoring data will be stored in an appropriate database.
- Data will be interpreted and reports on trends in the data will be compiled on a regular basis.
- Both the data and the reports will be kept on record for the duration of operations.

#### 11.6.2 Auditing

Contractors will be required to conduct routine HSE inspections (internal and independent) to monitor compliance and implement conditions stipulated in this ESMP. The results of the inspection and monitoring activities will be reported to the operator.

Beyond the routine inspection and monitoring activities conducted by the contractors, formal audits will be carried out internally by TEEPSA's on-board HSE representatives to ensure compliance with the ESMP and its own HSE standards and policies. The audit data will include the contractor's monitoring and inspection records.

The audit will include amongst other things, checking:

- Completeness of HSE documentation, including planning documents and inspection records.
- Conformance with monitoring requirements.
- Efficacy of activities to address any non-conformance with monitoring requirements.
- Training activities and record keeping.

Findings will be documented in audit reports, which will be submitted to the relevant Manager for action and follow-up.

**TABLE 11-4: MONITORING REQUIREMENTS**

No.	Risk	Criteria to be monitored	Inspections	Accountability (indicative)
<b>M1</b>	<b>Waste and Discharge Management Plan</b>			
M1-1	Galley waste and air emissions	<ul style="list-style-type: none"> <li>Type and volume of waste discharged/incinerated</li> <li>Estimate volume of air emissions from incineration (subject to obtaining an AEL)</li> </ul>	Recorded daily in the operational log inspection	Contractors (Vessel Captain / Offshore Installation Manager)
M1-2	General waste	<ul style="list-style-type: none"> <li>Type and volume of waste generated daily</li> <li>Type and volume transferred for onshore disposal and possibly incinerated (subject to obtaining an AEL if relevant)</li> <li>Compliance with Waste Management Plan</li> </ul>	Prior to waste transfers to supply vessel / port	Contractor (Vessel Captain)
M1-3	Hazardous waste	<ul style="list-style-type: none"> <li>Type and volume of waste generated</li> <li>Volume transferred for onshore disposal</li> <li>Compliance with Waste Management Plan</li> </ul>	Prior to waste transfers to supply vessel / port	Contractors (Vessel Captain / Offshore Installation Manager)
M1-4	Fuel usage and air emissions	<ul style="list-style-type: none"> <li>Type and volume on board</li> <li>Volume consumed</li> <li>Air emissions from fuel combustion, including CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> levels (calculated based on Tier 2 or 3 methodologies) annually via South African Greenhouse Gas Emissions Reporting System (SAGERS) as required in terms of NEM: AQA for oil and gas exploration activities (Code 1B2) under Annexure 1 of the amended Regulations</li> </ul>	Daily operational log inspection Fuel transfer log sheet	Contractors (Vessel Captain / Offshore Installation Manager / Pilot)
M1-5	Sewage	<ul style="list-style-type: none"> <li>Discharge volumes</li> <li>Residual chlorine concentration</li> </ul>	Recorded daily in the operational log inspection	Contractors (Vessel Captain / Offshore Installation Manager)
M1-6	Drilling fluids (WBM)	<ul style="list-style-type: none"> <li>Volume on board drilling unit</li> <li>Volume used</li> <li>Volume discharged</li> <li>Toxicity, barite contamination and zero oil content</li> <li>Residual muds sent to shore (at end of drilling)</li> </ul>	Recorded daily in the operational log inspection	Contractors (Offshore Installation Manager)

No.	Risk	Criteria to be monitored	Inspections	Accountability (indicative)
M1-7	NADF fluids and associated drill cuttings	<ul style="list-style-type: none"> <li>Volume on board drilling unit</li> <li>Volume used</li> <li>Volume discharged or shipped to shore</li> <li>Oil content in drill cuttings (&lt;6% oil on cuttings)</li> <li>Gamma ray results to assess radioactivity, if the risk of radioactivity exists</li> </ul>	Recorded daily in the operational log inspection	Contractors (Offshore Installation Manager)
M1-8	Cement	<ul style="list-style-type: none"> <li>Volume used (total volume, including volume discharged onto seabed)</li> <li>Pressure testing on abandonment cement plugs</li> </ul>	During cementing operations using ROV	Contractors (Offshore Installation Manager)
M1-9	Flaring	<ul style="list-style-type: none"> <li>Record daily flare and cumulative flare volumes</li> <li>Continuous visual monitoring of the flare for security and efficiency</li> </ul>	During flaring	Contractor (Offshore Installation Manager)
M1-10	Produced water	<ul style="list-style-type: none"> <li>Discharge volume or volume sent for onshore treatment</li> <li>Oil content in produced water</li> </ul>	During produced water discharge	Contractor (Offshore Installation Manager)
<b>M2</b>	<b>Preventive Maintenance Plan</b>			
M2-1	Deck drainage/ machinery space/ bilge water	<ul style="list-style-type: none"> <li>Correct operation of oil separating / filtering equipment and oil content meter (compliance with MARPOL 73/78 standards)</li> </ul>	Prior to drilling and once during campaign	Contractors (Vessel Captain / Offshore Installation Manager)
M2-2	Sewage discharge	<ul style="list-style-type: none"> <li>Correct operation of sewage treatment system (compliance with MARPOL 73/78 standards)</li> </ul>	At start and once during campaign	Contractors (Vessel Captain / Offshore Installation Manager)
M2-3	Galley waste and air emissions	<ul style="list-style-type: none"> <li>Correct operation of macerator</li> </ul>	At start and once during campaign	Contractors (Vessel Captain / Offshore Installation Manager)
M2-4	Equipment fouling	<ul style="list-style-type: none"> <li>Ensure all equipment (e.g., wellhead, BOP, etc.) that has been used in other regions is thoroughly cleaned prior to deployment.</li> </ul>	Prior to deployment	Contractors (Vessel Captain / Offshore Installation Manager)

No.	Risk	Criteria to be monitored	Inspections	Accountability (indicative)
M2-5	Lighting	<ul style="list-style-type: none"> <li>Ensure lighting on the drilling unit and project vessels is reduced to a minimum compatible with safe operations whenever and wherever possible.</li> </ul>	At start and once during campaign	Contractors (Vessel Captain / Offshore Installation Manager)
M2-6	Cranes	<ul style="list-style-type: none"> <li>Ensure loads are lifted using the correct lifting procedure and within the maximum lifting capacity of crane system.</li> </ul>	Prior to lifting operations	Contractors (Vessel Captain / Offshore Installation Manager)
M2-7	Emissions	<ul style="list-style-type: none"> <li>Ensure diesel motors and generators are in good working order to minimise soot and unburnt diesel released to the atmosphere.</li> </ul>	Ad hoc during operation	Contractors (Vessel Captain / Offshore Installation Manager)
<b>M3</b>	<b>Marine Faunal Management Plan</b>			
M3-1	Sensitive seabed structures	<ul style="list-style-type: none"> <li>Hard substrate and rocky outcrops mapping within 1 000 m of a proposed well site</li> <li>Type and quantity of benthic biota</li> </ul>	ROV inspection prior to drilling	Contractor (Offshore Installation Manager) Expert review of ROV footage
M3-2	Fauna interaction	<ul style="list-style-type: none"> <li>Presence of marine faunal activity (cetaceans, penguins, shoaling large pelagic fish or turtles) within 500 m of the vessel prior to commencing with the “soft-start” procedures (visually during the day) during VSP operations</li> <li>Record airgun activities, including sound levels, “soft-start” procedures and pre-firing regimes</li> <li>Responses of marine fauna to VSP operations</li> <li>A log of all VSP activity and shut-down decisions</li> </ul>	During VSP operations	Marine Mammal Observer (MMO)
M3-3		<ul style="list-style-type: none"> <li>Presence of cetacean activity detected by PAM within 500 m prior to commencing with the “soft-start” procedures and during operations (subject to risk assessment)</li> <li>Species, position (latitude/longitude) and distance from the vessel, where possible</li> <li>A log of all VSP (seismic) activity and shut-down decisions</li> </ul>	During VSP operation (at night and periods of poor visibility)	Passive Acoustic Monitoring (PAM) Operator

No.	Risk	Criteria to be monitored	Inspections	Accountability (indicative)
<b>M4</b>	<b>Stakeholder Engagement Plan</b>			
M4-1	Grievances	<ul style="list-style-type: none"> <li>Registering of all grievances, solution and outcome</li> </ul>	Continuous throughout operations	TEEPSA
<b>M5</b>	<b>Emergency Response Plan, SOPEP, OSCP and BOCP</b>			
M5-1	Faunal Strikes	<ul style="list-style-type: none"> <li>Vessel transit speed between the drill site and port - maximum of 12 knots (22 km/hr), except within 25 km of the coast where it is reduced further to 10 knots (18 km/hr), as well as when sensitive marine fauna are present in the vicinity</li> </ul>	Continuous during transit	Vessel Captains
M5-2	Lost equipment	<ul style="list-style-type: none"> <li>Scan seafloor for any dropped equipment around the well site.</li> <li>Retrieve these objects, where practicable, after assessing the safety and metocean conditions</li> </ul>	Prior to drilling unit leaving site using ROV	Contractor (Offshore Installation Manager)
		<ul style="list-style-type: none"> <li>Establish a hazards database listing:                             <ul style="list-style-type: none"> <li>&gt; the type of gear lost / left on the seabed</li> <li>&gt; date of abandonment/loss</li> <li>&gt; location</li> <li>&gt; where applicable, the dates of retrieval</li> </ul> </li> </ul>	Ongoing through daily operational log and incident reporting system	Contractors (Vessel Captain / Offshore Installation Manager)
M5-3	Oil / fuel spill	<ul style="list-style-type: none"> <li>Bunkering operations log</li> <li>Weather conditions and sea state during bunkering operations</li> </ul>	During bunkering	Contractors (Vessel Captain / Offshore Installation Manager)
M5-4	Oil / fuel spill	<ul style="list-style-type: none"> <li>Record of all spills (Spill Record Book), including spill reports and use of dispersants; emergency exercise reports; contacts update, audit reports</li> </ul>	Ongoing through daily operational log and incident reporting system	Contractors (Vessel Captain / Offshore Installation Manager)
M5-5	Blow-out	<ul style="list-style-type: none"> <li>BOP certifications / tests</li> <li>Emergency response equipment availability</li> </ul>	At start of campaign	Offshore Installation Manager

No.	Risk	Criteria to be monitored	Inspections	Accountability (indicative)
<b>M6</b>	<b>Ballast Water Management Plan</b>			
M6-1	Ballast water	<ul style="list-style-type: none"> <li>Volume discharged and location (start and finish coordinates)</li> <li>Start and finish times for pumping water during an exchange</li> <li>Actual pumping times</li> <li>Residual volume remaining in the tank at the end the empty cycle prior to refill (empty refill method only)</li> </ul>	During and after de-ballasting	Contractor (Offshore Installation Manager)
<b>M7</b>	<b>Chemical Management Plan</b>			
M7-1	Chemicals and hazardous materials	<ul style="list-style-type: none"> <li>Volume stored</li> <li>Volume consumed</li> </ul>	Routine operational inspection of the: <ul style="list-style-type: none"> <li>Storage area</li> <li>Management and transfer procedures</li> <li>Log sheet update</li> </ul>	Contractors (Vessel Captain / Offshore Installation Manager)
M7-2	Radioactive sources	<ul style="list-style-type: none"> <li>Test to determine leak levels</li> <li>Record sources lost down hole</li> </ul>	At start and once during campaign	Contractor (Offshore Installation Manager)
M7-3	Accidental oil and chemical spills	<ul style="list-style-type: none"> <li>Type of chemical spilled</li> <li>Volume</li> </ul>	Ongoing through daily operational log and incident reporting system	Contractors (Vessel Captain / Offshore Installation Manager)

### 11.6.2.1 Audit methodology

An audit methodology, programme and protocol will be developed for the internal audits and the external ESMP close-out compliance audits. These audits are an integral part of the implementation of the ESMP and audit findings can be used as a basis to measure compliance and confirm the efficacy and efficiency of the mitigation measures. The proposed approach to auditing consists of four basic steps:

- Planning the audit.
- Conducting the audit.
- Producing audit findings (measuring compliance and identifying problems).
- Reporting audit findings for management action.

A four-level rating scale is proposed to assess the performance of the ESMP against each individual element. Elements are rated individually as “full compliance”, “partial compliance”, “non-compliance” or “not applicable” as per the Table 11-5 below.

**TABLE 11-5: AUDIT RATING SCALE**

<b>Full compliance</b>	All of the requirements of the ESMP element have been fulfilled. Element has been documented and monitored and upon verification is found to be fully implemented.
<b>Partial compliance</b>	Only certain of the key requirements have been fulfilled and a plan is in place to progress to full compliance. Element has been documented and monitored but not consistently or completely implemented.
<b>Non-compliance</b>	The requirements of the ESMP have not been fulfilled. No evidence or incomplete evidence of compliance.
<b>Not applicable</b>	The ESMP elements are not applicable.

### 11.6.3 Corrective Actions

TEEPSA's and contractor's HSE staff will implement a formal non-compliance and corrective action tracking procedure for investigating cause and identifying corrective actions in response to accidents, HSE and/or social non-compliances.

Audit findings will undergo a root cause analysis to identify underlying causes to non-compliance events. Management actions will be taken to correct the underlying causes behind the audit findings and improvements will be made before another audit is conducted. This process allows for problems to be corrected, compliance to be improved and prevention of the same findings during subsequent audits.

Where corrective actions are deemed necessary, specific measures will be developed and documented in a Corrective Action Plan, with designated responsibility and timing, and implemented. In this way, continuous improvement in performance will be achieved.

TEEPSA's and contractor's HSE staff will be responsible for keeping records of corrective actions and for overseeing the modification of environmental or social protection procedures and/or training programmes to avoid repetition of non-conformances and non-compliances.

## 11.7 MANAGEMENT OF CHANGE

The development and implementation of the ESMP is an ongoing process that is iterative in nature. This document must thus be seen as a 'living' document and amendments may need to be implemented during the course of the project. Typical changes that can affect the ESMP include:

- A material project design change that occurs after the ESMP has been compiled and approved.
- Changes in the feasibility/availability of specific mitigation measures.
- Personnel changes and/or planning on the project.
- Equipment failure during the survey or drilling.

This document is the first version of the ESMP. Certain aspects of this document may be expanded/made more specific during the detailed design stage to ensure, firstly, that it includes all conditions of approval and, secondly, that it addresses all impacts related to the detailed design. It may also need to be amended if audit findings indicate:

- insufficient mitigation of environmental impacts associated with the undertaking of the activity; or
- insufficient levels of compliance with the Environmental Authorisation or ESMP.

These changes will be subject to a management of change procedure. Further detail on the management of change procedure, including levels of change and associated actions, is presented in Section 3.4.

The ESMP will also be reviewed at intervals not exceeding five years, as well as after the promulgation of new legislation. Where use of the ESMP results in suggestions for revisions or updates, these should be directed to the HSE Department. Any significant revisions to the ESMP document must be approved by DMRE before the revised ESMP is implemented. As per EIA Regulation 36, amendments to Management Actions specified in an ESMP may be effected immediately and communicated to the DMRE later. Amendments to Management Outcomes of an ESMP may only be effected on application to the DMRE. When the ESMP is updated, the relevant responsible persons must be informed thereof.

## 11.8 COMMUNICATION

### 11.8.1 Internal Communication

Channels of communication will be established between TEEPSA, the contractors, project personnel (e.g. MMOs and PAM operators) and external stakeholders. TEEPSA will establish and implement procedures for internal communication between the various levels and functions of the project staff organisation.

### 11.8.2 Stakeholder Engagement

As noted in Section 11.3.7.5, the contractors will develop and implement a Stakeholder Engagement Plan in coordination with TEEPSA, providing the framework to guide the establishment of an effective engagement with external interested parties and detailing the plan for engagements, in accordance with local requirements. Notification documents, meetings and expressed concerns will be recorded.

A grievance procedure will also be established and implemented by the contractors, and overseen by TEEPSA, to deal with concerns and grievances and shall exist throughout operations through to the end of project life (see Section 11.3.7.5).

### 11.8.3 PASA Communication

The well drilling details will be compiled into a notification document, which submit to PASA at least 30 days prior to mobilisation.

TEEPSA will submit an ESMP close-out compliance report to competent authority (DMRE/PASA) within 90 days of the end of each drilling campaign (see Section 11.9.4).

## 11.9 DOCUMENT CONTROL AND REPORTING

### 11.9.1 Documentation

TEEPSA will control HSE documentation, including project licences, approvals, management plans, associated procedures, checklists, forms, audits, and reports, through a formal procedure. The document control procedure will describe the processes that the project will employ for official communication of both hardcopy and electronic documents and the requirement for electronic filing, document tracking and version control numbers.

Contractors will be required to develop a system for maintaining and controlling its own HSE documentation and describe these systems in their respective HSE plans.

### 11.9.2 Incident Reporting

Following every HSE incidents, TEEPSA will conduct an incident investigation and prepare a report detailing the events, root causes of the incident(s) and corrective and preventative measures implemented as a result. All incidents where local regulatory standards are exceeded will be reported to DMRE / PASA, as well as SAMSA for any spill related incidents.

### 11.9.3 Audit Reports

Audit findings (see Section 11.6.2) will be documented in audit reports, which will be submitted to the relevant Manager for action and follow-up.

### 11.9.4 ESMP Close-Out Compliance Report

TEEPSA will submit an ESMP close-out compliance report to competent authority (DMRE/PASA) at the end of each drilling campaign. Amongst other things, this report will outline the implementation of the mitigation measures and compliance levels with achieving the performance objectives as detailed in the ESMP.

This report will be submitted to the competent authority within 90 days of activity completion.

## 11.10 ENVIRONMENTAL AND SOCIAL MITIGATION MANAGEMENT COMMITMENT REGISTER

Table 11-6 details the specific management commitments that will be implemented to prevent, minimise or manage significant potential negative impacts and optimise and maximise any potential benefits of the project.

These tables are structured in the following manner so that the mitigation measures have a clear and logical context within which they are designed, implemented, monitored and evaluated:

- **Activities:** Activities are the operational activities that occur as a result of project implementation.

- **Aspect:** Environmental and social aspects are defined as ‘an element of an organisation’s activities, products or services that can interact with the natural and human environment’ e.g., atmospheric emissions, underwater noise levels or discharge of waste to sea.
- **Environmental and Social Performance Objectives / Impact Management Outcomes or Targets:** Every environmental and social management requirement must be translated into an objective, namely an outcome or target that is to be achieved. This is not to say that every requirement must be expressed as an objective, but requirements can be combined as appropriate into single objectives. If the outcome / target is met then the objective will have been deemed to be met, but if the target is not achieved then suitable corrective action must be defined and implemented so as to ensure that the performance is improved to the point that the target is met and the performance is sustained.
- **Associated Plan and Procedure:** The corresponding plan or procedure to which the commitment relates is listed in this column.
- **Mitigation / Management Actions:** A key component of the ESIA process is to explore practical ways of avoiding or reducing potentially significant impacts of the proposed exploration programme. These are commonly referred to as mitigation measures and are incorporated into the project as part of the ESMP. Mitigation is aimed at preventing, minimising or managing potential negative impacts to as low as reasonably practicable (ALARP) and optimising and maximising any potential benefits of the proposed project.
- **Responsibility:** Defining who is responsible for the implementation, monitoring and recording of the mitigation measure.
- **Timing:** Timing refers to the schedule. The ‘timing’ can be specified in terms of a specific date or relative to other actions (i.e. before project mobilisation, or during operation, as examples) or frequency.
- **Monitoring and Record Keeping:** Monitoring and record keeping requirements must be defined, whereby the organisation responsible for implementing the action/s is given a prescribed reporting mechanism, limited as far as possible to documents plans, correspondence, records, registers, etc.

**TABLE 11-6: ENVIRONMENTAL AND SOCIAL MITIGATION MANAGEMENT COMMITMENT REGISTER**

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>1. PLANNING PHASE</b>							
<b>1.1 PREPARATION OF SUBSIDIARY PLANS</b>	Planning and Management	Identification of all parties and their responsibilities documented and communicated	BOCP  OSCP	All efforts to be made to avoid scheduling drilling operations during the periods when the likelihood of shoreline oiling for a blow-out is highest (namely the Austral Winter). In the case of exploration wells drilled in a sequence covering this period, response needs to be enhanced.	TEEPSA, Drilling Contractor	30 days prior to commencement of operation	Copies of all plans
				Develop a well-specific response strategy and plans (OSCP and BOCP), aligned with the National OSCP, TotalEnergies' requirements and International Industry best practice, for each well location that identifies the resources and response required to minimise the risk and impact of oiling (shoreline and offshore). This response strategy and associated plans must take cognisance to the local oceanographic and meteorological seasonal conditions, local environmental receptors and local spill response resources. The development of the site-specific response strategy and plans must include the following:			
				<ul style="list-style-type: none"> <li>Assessment of onshore and offshore response resources (equipment and people) and capabilities at time of drilling, location of such resources (in-country or international), and associated mobilisation / response timeframes.</li> </ul>			
				<ul style="list-style-type: none"> <li>Selection of response strategies that reduce the mobilisation / response timeframes as far as is practicable. Use the best combination of local and international resources to facilitate the fastest response.</li> </ul>			

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
1.1 PREPARATION OF SUBSIDIARY PLANS	Planning and Management	Identification of all parties and their responsibilities documented and communicated	OSCP BOCP	<ul style="list-style-type: none"> <li>• Should there be any significant changes in the existing modelling input data closer to the spud date of the well, update the modelling report taking into consideration site- and temporal-specific information accordingly in order to guide the final response strategy and associated resources.</li> <li>• Develop intervention plans for the most sensitive areas to minimise risks and impacts and integrate these into the well-specific response strategy and associated plans.</li> <li>• If modelling and intervention planning indicates that the well-specific response strategy and plans cannot reduce the response times to less than the time it would take oil to reach the shore, additional proactive measures must be committed to. For example:                         <ul style="list-style-type: none"> <li>– Implement measures to reduce surface response times (e.g., pre-mobilise a portion of the dispersant stock on the support vessels, contract additional response vessels and aircrafts, minimise the time it takes to install the SSDI kit (have the kit on standby), improve dispersant spray capability, etc.).</li> <li>– Deploy and/or pre-mobilise shoreline response equipment (e.g., response trailers, shoreline flushing equipment, shoreline skimmers, storage tanks, shoreline booms, skirt booms, shore sealing booms, etc.) to key localities for the full duration of drilling operation phase to proactively protect sensitive coastal habitats and areas.</li> </ul> </li> </ul>	TEEPSA, Drilling Contractor	30 days prior to commencement of operation	Copies of all plans

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>1.1 PREPARATION OF SUBSIDIARY PLANS</b>	Planning and Management	Identification of all parties and their responsibilities documented and communicated	See Section 11.3.7	Ensure the following subsidiary plans are also in place: <ul style="list-style-type: none"> <li>• TEEPSA's Emergency Procedures document and Medical Emergency Response Plan</li> <li>• Drilling Contractor Emergency Response Plan (including MEDIVAC plan)</li> <li>• Shipboard Oil Pollution Emergency Plan (SOPEP) as required by MARPOL</li> <li>• Stakeholder Engagement Plan</li> <li>• Waste and Discharges Management Plan</li> <li>• Chemical Management Plan</li> <li>• Preventive Maintenance Plan</li> <li>• Ballast Water Management Plan</li> <li>• Marine Faunal Management Plan</li> <li>• Corrective Action Plan</li> </ul>	Drilling Contractor	30 days prior to commencement of operation	Copies of all plans and certificates
				In addition to the above, ensure that: <ul style="list-style-type: none"> <li>• Drilling unit must have Pollution Safety Certificate(s) issued by SAMSA.</li> <li>• There is a record of drilling unit / vessels seaworthiness certificate and/or classification stamp. Submit copies of all certificates to PASA (see Row 2.1).</li> <li>• A valid International Sewage Pollution Prevention Certificate (ISPPC), as required by vessel class.</li> <li>• International Oil Pollution Prevention (IOPP) Certificate, as required by vessel class.</li> </ul>			Confirm compliance and justify any omissions  Copies of all plans and certificates  Confirm compliance and justify any omissions  Correspondence to PASA

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>1.2 PREPARATION FOR DRILLING</b>	Increased hard substrate on seafloor	Minimise impact on demersal trawl sector	Drilling design	Avoid drilling within the boundaries of the current demersal trawl "ring fenced" area (see Figure 9-14) or plan to remove wellhead structures located within this area.	TEEPSA / Drill Contractor	During well design	ROV footage
	Ammunition dump	Avoid impact on drilling unit and crew		<ul style="list-style-type: none"> <li>Avoid ammunition dump area within the area of interest.</li> <li>Adjust the well location to avoid any obstructions / objects identified in pre-drilling ROV surveys.</li> </ul>			
	Drilling personnel for faunal observations / detections during VSP	Minimise impact on and disturbance of marine fauna	Marine Faunal Management Plan	<ul style="list-style-type: none"> <li>Make provision for the placing of at least two dedicated Marine Mammal Observer (MMO), with a recognised MMO training course, on board for marine mammal observation (360 degrees around drilling unit), distance estimation and reporting.</li> <li>One MMO should also have Passive Acoustic Monitoring (PAM) training, should a risk assessment, undertaken ahead of the VSP operation, indicate that the PAM equipment can be safely deployed considering the metocean conditions (specifically current).</li> </ul>	Drilling Contractor	Prior to commencement of VSP operations	MMO monitoring (see Row M3-2 & M3-3 in Table 11-4)  MMO / PAM report
	Equipment	Ensure drilling unit vessel is fitted with PAM technology (one or more hydrophones), which detects animals through their vocalisations, should it be possible to safely deploy PAM equipment.					
	Identification and appointment of suppliers	Ensure fair, transparent and reasonable preferential contracting of local companies	Societal Management Plan	Apply fair, transparent, and reasonable preferential contracting of local companies with the suitable expertise and proven transformation track record to maximise benefits. Disclose tender awards.	Drilling Contractor	During contracting	Contracts (see Row M4-2 in Table 11-4)
		Include as a condition of contracting that any non-local service providers will apply reasonable preferential sub-contracting of companies (depending on which location is selected as the logistics base). Ensure contractors		TEEPSA			

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
				demonstrate their commitment to maximisation of local employment, service awards and sub-contracting.			
				Engage coastal community(ies) that are oriented towards small-scale fishing within the direct area of influence for beneficiation from local economic development and corporate responsibility programmes, or similar.	TEEPSA	Prior to and throughout operations	
<b>1.2 PREPARATION FOR DRILLING</b>	Oil spill planning	Minimise impact of a well blow-out by implementing response procedures efficiently	OSCP	Undertake a drilling unit inspection that is specifically focused on well control equipment. A specific BOP inspection, and relevant upgrades / refurbishment should be completed prior to the unit operating in South African waters.	TEEPSA	Prior to drilling unit hire	Inspection report and Peer review report (see Row M5-5 in Table 11-4)
				Ensure that both the well design and well construction plans (Drilling Programme) are peer reviewed internally by HQ specialists, prior to spudding the well.		Prior to finalising drilling programme	
				Contract arrangements and service agreements are in place to implement the OSCP, e.g., capping stack in Saldanha Bay and other international locations, SSDI kit, surface response equipment (e.g., booms, dispersant spraying system, skimmers, etc.), dispersants, response vessels, etc.	Drilling Contractor	Prior to commencement of drilling operations	Contracts
				Ensure there is adequate protection and indemnity insurance cover for oil pollution incidents. Submit all forms of financial insurance and assurances to PASA to manage all damages and compensation requirements in the event of an unplanned pollution event.			
				Ensure a standby vessel is within 30 minutes of the drilling unit and equipped for dispersant spraying and can be used for mechanical dispersion (using the propellers of the ship and/or firefighting equipment). It			

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
				should have at least 10 m <sup>3</sup> of dispersant onboard for initial response.			
<b>2. MOBILISATION PHASE</b>							
<b>2.1 STAKEHOLDER CONSULTATION AND NOTIFICATION FOR DRILLING</b>	Interaction, engagement & communication with national authorities and key stakeholders	Inform PASA about the commencement of drilling	Stakeholder Engagement Plan	Compile the well drilling details into a notification document and submit to PASA. The notification should provide: <ul style="list-style-type: none"> <li>• Drilling programme (timing, co-ordinates and duration).</li> <li>• Contractor details.</li> <li>• Drilling unit and support vessel specifications (including relevant certification and indemnity insurance).</li> </ul>	TEEPSA, Drilling Contractor	Notification to be submitted 30-days prior to drilling commencement	Correspondence to PASA
		Ensure that other users of the sea are aware of drilling activities and navigational safety and parties are aware of the mechanism to follow for raising concerns  Minimise disruption to drilling and other users of the sea	Stakeholder Engagement Plan	Notify key stakeholders of the navigational co-ordinates of the operational area (including navigational co-ordinates of well location, timing and duration of proposed activities), timing and duration of the activities, and safety zone requirements: <ul style="list-style-type: none"> <li>• Fishing industry / associations: SA Tuna Association; SA Tuna Longline Association, Fresh Tuna Exporters Association, South African Deepsea Trawling Industry Association (SADSTIA), and South African Hake Longline Association (SAHLLA).</li> <li>• South African Navy Hydrographic Office (HydroSAN).</li> <li>• South African Maritime Safety Association.</li> <li>• DFFE Vessel Monitoring, Control and Surveillance Unit in Cape Town.</li> </ul>	TEEPSA, Drilling Contractor	3 weeks prior to commencement of operations	Copies of all correspondence and list of those to whom it was sent

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>2.1 STAKEHOLDER CONSULTATION AND NOTIFICATION FOR DRILLING</b>	Interaction, engagement & communication with national authorities and key stakeholders	<p>Ensure that other users of the sea are aware of drilling activities and navigational safety and parties are aware of the mechanism to follow for raising concerns</p> <p>Minimise disruption to drilling and other users of the sea</p>	Stakeholder Engagement Plan	Implement a public information and disclosure programme covering all TEEPSA exploration activities to ensure the public are regularly informed of the exploration activities. As part of the public information and disclosure programme, disclose project information via local media and communication channels – e.g., newspaper articles, public notices, newsletters, websites and meetings as required. Focus should be placed on the Saldanha Bay in particular (if selected as the location for onshore logistics base).	TEEPSA	Prior to each well drilling campaign commencement	Copies of any newspaper articles, public notices, newsletters and websites
				Implement a comprehensive, consistent and regular consultation with indigenous groupings and leadership, as well as those who fall outside this category. The aim of such engagement should ensure open communication, direct communication and consistent communication with stakeholders that may be affected by operations.			Copies of all correspondence, meetings, etc.
				Implement, where necessary based on the outcome of the consultation process, a ritual event(s) that permits engagement with ancestral spirits and nature to alleviate potential and future negative impacts of non-consultation and poor cultural/nature respect.			Details of all events undertaken
				Engage with local community forums, business chambers, tourism offices and other collective organisations on a regular basis in order to disclose information to key stakeholders and draw out any ongoing issues and concerns. Focus should be placed on the Saldanha Bay in particular (if selected as the location for onshore logistics base).			Prior to and during each well drilling campaign

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>2.1 STAKEHOLDER CONSULTATION AND NOTIFICATION FOR DRILLING</b>	Interaction, engagement & communication with national authorities and key stakeholders	Ensure that other users of the sea are aware of drilling activities and navigational safety and parties are aware of the mechanism to follow for raising concerns  Minimise disruption to drilling and other users of the sea	Stakeholder Engagement Plan	Request, in writing, the HydroSAN to broadcast a navigational warning via Navigational Telex (Navtext) and Cape Town radio (Channel 16 VHF; Call sign: ZSC) for the duration of the drilling campaign.	Drilling Contractor	7 days prior to drilling unit being on drill site	Confirm that request was sent to the SAN Hydrographer
				Maintain a functional grievance mechanism / procedure for recording any complaints or comments received from the public prior to and during the drilling campaign. Include resources to permit the investigation, resolution and close-out of all grievances.	TEEPSA, Drilling Contractor	Throughout the drilling campaign	Grievance monitoring (see Row M4-1 in Table 11-4)
	Interaction, engagement & communication with national authorities and key stakeholders	Manage community expectations related to local procurement, local content, and local employment opportunities		Ensure that all service providers/contractors actively manage community expectations related to local procurement, local content, and local employment opportunities, with support from TEEPSA. This should include a co-ordinated and approved public message / statement prepared jointly with TEEPSA and communicated as and when necessary.	TEEPSA, Drilling Contractor	30 days prior to drilling commencement and during drilling as required	Copy of public messages / statements
<b>2.2 PREPARATION FOR DRILLING</b>	Oil spill planning	Minimise impact of a well blow-out by implementing response procedures efficiently	OSCP	Schedule joint oil spill exercises including TEEPSA and local departments/organisations to test the Tier 1, 2 & 3 responses.	Drilling Contractor	Prior to commencement of drilling	Copy of attendance register and training records
				Deploy response equipment, as specified in the site-specific response strategy (OSCP and BOCP) - refer to Row 1.1 above.			Contracts

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>2.3 MOBILISATION OF PROJECT STAFF</b>	Training and allocation of responsibilities	Project staff have the capability and competence to achieve the ESMP objectives and know what the ESMP environmental requirements are  All staff receive HSE training as part of their HSE induction, refresher training and an ongoing awareness and behaviour system	Environmental and Social awareness	Ensure that a copy of the ESIA Report and ESMP is supplied to the contractor and sub-contractors and is on board all project vessels during the operation.	TEEPSA	At drilling commencement meeting and before new staff commence with work	
				Undertake HSE Awareness Training, including induction training to ensure the project personnel (including drilling and support vessels, MMO, PAM operator) are appropriately informed of the purpose and requirements of the ESMP, including emergency procedures, spill management, etc.	TEEPSA Drilling Contractor	At drilling commencement meeting (Kick-off Meeting) and before new staff commence with work on the project	Copy of attendance register and training records
				Ensure that ESMP responsibilities are clearly defined in Job Descriptions of relevant staff.			
				Establish training and exercise programmes to ensure that the response activities can be effectively executed.			
				Ensure that MMOs are briefed on the area-specific sensitivities and on the VSP planning (including roles and responsibilities, and lines of communication).			
<b>2.4 EQUIPMENT TRANSFER</b>	Introduction of non-indigenous invasive marine species	Control the spread of non-native invasive species to vulnerable ecosystems Ships' Ballast Water	Preventive Maintenance Plan	Ensure all equipment (e.g., wellheads, BOPs, riser, etc.) that has been used in other regions is thoroughly cleaned prior to deployment	Drilling Contractor	Prior to entry into South African waters	Equipment checking (see Row M2-4 in Table 11-4)

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>2.5 EXCHANGE OF BALLAST WATER</b>	Introduction of non-indigenous invasive marine species	Control the spread of non-native invasive species to vulnerable ecosystems by fulfilling the requirements of the International Convention for the Control and Management of Ships' Ballast Water and Sediments ("the Ballast Water Management Convention")	Ballast Water Management Plan	Implement the Ballast Water Management Plan.	Contractors	During ballast water discharge	Waste monitoring (see Row M6-1 in Table 11-4)
				<ul style="list-style-type: none"> <li>Avoid the unnecessary discharge of ballast water.</li> <li>No discharging of ballast water in harbour / port.</li> </ul>			
				Use filtration procedures during loading in order to avoid the uptake of potentially harmful aquatic organisms, pathogens and sediment that may contain such organisms.			
				Whenever possible, conduct the exchange of ballast water at least 200 nm ( $\pm$ 370 km) from the nearest land and in water of at least 200 m depth when arriving from another maritime region. Where this is not feasible, the exchange should be as far from the nearest land as possible, and in all cases a minimum of 50 nm ( $\pm$ 93 km) from the nearest land and preferably in water at least 200 m in depth.			Copy of Ballast Water Management Plan and ballast water management certificate
				Ensure that routine cleaning of the ballast tank is carried out, where practicable, in mid-ocean in accordance with Ballast Water Management Plan.		During ballast tank cleaning	Maintain a complete and accurate Ballast Water Record System
							Records are to be maintained of ballast water uptakes, discharges and exchanges as per the Ballast Water Management Plan
<b>2.6 AIR POLLUTION CONTROL DURING MOBILISATION</b>	Emissions to the atmosphere	As per operation phase – refer to Row 3.7 below.					

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>2.7 POLLUTION CONTROL AND WASTE AND DISCHARGES MANAGEMENT DURING MOBILISATION</b>	Discharge of liquid and solid waste to sea	As per operation phase – refer to Row 3.9 below.					
<b>2.8 LIGHT POLLUTION CONTROL DURING MOBILISATION</b>	Increased ambient lighting	As per operation phase – refer to Row 3.11 below.					
<b>3 OPERATIONAL PHASE</b>							
<b>3.1 STAKEHOLDER CONSULTATION AND NOTIFICATION OF VESSEL OPERATIONS</b>	Safety zone around drilling unit	Ensure other users of the sea are notified and navigational safety, and prevention of emergencies / accidents	Stakeholder Engagement Plan	If necessary, distribute an <u>updated</u> Notice to Mariners to fishing companies and directly onto vessels. The notice should give updated notice of: <ul style="list-style-type: none"> <li>☑ the co-ordinates of the drill site; and</li> <li>☑ an indication of the proposed drilling timeframes.</li> </ul>	TEEPSA, Drilling Contractor	7 days prior to establishment at drill site	Copies of all correspondence
		Minimum disruption to drilling and other users of the sea		Maintain a functional grievance mechanism / procedure for recording any complaints or comments received from the public prior to and during the drilling campaign. Include resources to permit the investigation, resolution and close-out of all grievances.			
<b>3.2 PREVENTION OF ACCIDENTS</b>	Presence of drilling unit	Ensure navigational safety, prevention of accidents, preparation for emergencies and	Stakeholder Engagement Plan	Maintain standard vessel watch procedures.	Drilling Contractor	Throughout operation	Provide record of any incidents and interaction with other vessels.
				Enforce the 500m safety zone around the drilling unit.			
				Notify any fishing vessels at a radar range of 24 nm from the drilling unit via radio regarding the safety requirements around the drilling unit.			

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
		minimise the chance subsequent damage to the environment occurring		<p>Manage the lighting on the drilling unit to ensure that it is sufficiently illuminated to be visible to fishing vessels and compatible with safe operations</p> <p>Practice weekly emergency response drills.</p>			Provide record of safety drills
<b>3.2 PREVENTION OF ACCIDENTS</b>	Presence of drilling unit	Ensure navigational safety, prevention of accidents, preparation for emergencies and minimise the chance subsequent damage to the environment occurring	Stakeholder Engagement Plan	<p>Ensure access to and use of current meteorological and oceanographic information in management of drilling activities (part of TEEPSA's Technical Risk Assessment procedures).</p> <p>Use flares or fog horn where necessary.</p>	Drilling Contractor	Throughout operation	Provide record of any incidents and interaction with other vessels.
	Presence and operation of support vessel	Minimise risk of collision with large cetaceans	Marine Faunal Management Plan	<p>Ensure vessel transit speed between the drill site and port is a maximum of 12 knots (22 km/hr), except within 25 km of the coast where it is reduced further to 10 knots (18 km/hr), as well as when sensitive marine fauna are present in the vicinity.</p> <p>Keep a constant watch for marine mammals and turtles in the path of the vessel. Alter course and avoid animals when necessary.</p>	Drilling Contractor	Throughout transit	Vessel speed (see Row M4-2 in Table 11-4)

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.3 SPUDDING</b>	Physical disturbance of the seabed sediments	Protect sensitive seabed habitats	Marine Faunal Management Plan  Drilling design	<ul style="list-style-type: none"> <li>Undertake pre-drilling site surveys (with ROV) to ensure there is sufficient information on seabed habitats, including the mapping of sensitive and potentially vulnerable habitats within 1 000 m of a proposed well site.</li> <li>Limit the area directly affected by physical contact with infrastructure to the smallest area required.</li> <li>Ensure the ROV does not land or rest on the seabed as part of normal operations.</li> </ul>	Drilling Contractor	Prior to finalising of drill sites and spudding	Seabed monitoring (see Row M3-1 in Table 11-4)  ROV footage
		Protect sensitive seabed habitats	Marine Faunal Management Plan  Drilling design	Ensure that, based on the pre-drilling site survey and expert review of ROV footage, well sites are not located within a 1 000 m radius of any sensitive and potentially vulnerable habitats. Alternatively, implement appropriate technologies, operational procedures and monitoring surveys to reduce the risks of, and assess the damage to, vulnerable seabed habitats and communities.	Drilling Contractor, Marine faunal specialist		
		Protect shipwrecks	Drilling design	Adjust the well location to avoid any shipwrecks identified in pre-drilling ROV surveys.	Drilling Contractor	During spudding, if wreck is identified	ROV footage  Correspondence with SAHRA
			Stakeholder Engagement Plan	If any historic shipwreck objects are found during the pre-drilling seafloor survey or after drilling commencement, which could potentially be impacted by the activity, work in the directly affected area should cease (if identified after drilling commencement) until the SAHRA has been notified and the operator has complied with any additional mitigation as specified by the SAHRA, including any recommended buffer.	Drilling Contractor		

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.4 WELL DRILLING - DISCHARGE OF DRILL CUTTINGS AND CEMENT</b>	Physical disturbance of the seabed sediments and increased sediment in the water column	Protect sensitive seabed fauna / habitats and pelagic fauna	Waste and Discharges Management Plan Chemical Management Plan Waste and Discharges Management Plan Chemical Management Plan	<ul style="list-style-type: none"> <li>Use WBMs for drilling, as far as possible.</li> <li>Use only low-toxicity and partially biodegradable additives in drilling fluid.</li> <li>Maintain a full register of Material Safety Data Sheets (MSDSs) for all chemical used, as well as a precise log file of their use and discharge.</li> </ul>	Drilling Contractor	Throughout drilling, if using WBMs	Monitor fluids and cuttings and - see Row M1-6 in Table 11-4
				Should the WBMs not be able to provide the necessary characteristics, use a low toxicity Group III NADF. When using NADF: <ul style="list-style-type: none"> <li>Use only low-toxicity and partially biodegradable additives in drilling fluid.</li> <li>Use high efficiency solids control equipment to reduce the need for fluid change out and minimise the amount of residual fluid on drilled cuttings.</li> <li>Treat NADF cuttings to reduce oil content to &lt;6% Oil On Cutting (OOC) prior to discharge overboard.</li> <li>Ensure regular maintenance of the onboard solids control package and avoid inappropriate discharge of NADF cuttings.</li> </ul>	Drilling Contractor	Throughout drilling, if using NADFs	Monitor fluids and cuttings and - see Row M1-7 in Table 11-4
				Discharge of risered cuttings via a caisson at greater than 10 m below surface.	Drilling Contractor	Throughout drilling	
				Use only low-toxicity and partially biodegradable additives in cement.	Drilling Contractor	Throughout drilling	

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.4 WELL DRILLING - DISCHARGE OF DRILL CUTTINGS AND CEMENT</b>	Physical disturbance of the seabed sediments and increased sediment in the water column	Protect sensitive seabed fauna / habitats and pelagic fauna	Waste and Discharges Management Plan Chemical Management Plan Waste and Discharges Management Plan Chemical Management Plan	<ul style="list-style-type: none"> <li>Avoid excess cement usage during the initial riserless drilling and plugging stages by monitoring (by ROV) for discharges during cementing. If significant discharges are observed on the seafloor terminate cement pumping.</li> <li>Monitor (using ROV) hole wash out to reduce discharge of fluids as far as possible.</li> </ul>	Drilling Contractor	During cementing	Monitor cement returns - see Row M1-8 in Table 11-4
	Increased levels of radioactivity	Protect the environment and workers	Waste and Discharges Management Plan	If seabed radioactivity was not confirmed as part of the Environmental Baseline Study, analyse Gamma ray results for radioactivity during logging and / or during cuttings treatment. If any issues with regard to radioactivity are detected, undertaken appropriate treatment and disposal.	Drilling Contractor	During initial cutting treatment / logging	Monitor cuttings and - see Row M1-7 in Table 11-4
<b>3.5 TRANSPORT, STORAGE AND HANDLING OF RADIOACTIVE DEVICES AND EXPLOSIVES</b>	Increased levels of radioactivity	Protect the environment and workers	Preventive Maintenance Plan	Designate competent person/s in charge and to handle radioactive devices and/or explosives. <ul style="list-style-type: none"> <li>Comply with necessary regulations for the transport, storage and handling of radioactive devices.</li> <li>Transport and store radioactive devices in specially designed secured (locked) storage containers.</li> </ul>	Drilling Contractor	Throughout drilling operations	Training certificates

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.5 TRANSPORT, STORAGE AND HANDLING OF RADIOACTIVE DEVICES AND EXPLOSIVES</b>	Increased levels of radioactivity	Protect the environment and workers	Preventive Maintenance Plan	<ul style="list-style-type: none"> <li>Follow radioactive sources procedure.</li> <li>When radioactive sources are to be used, secure the area between and around the storage containers and the floor and only allow key personnel in the area.</li> </ul>	Drilling Contractor	Throughout drilling operations	
				Set up incident and emergency reporting procedures for actual or suspected individual over-exposure, theft or loss, logging tools stuck downhole in wells, and release or spillage into the environment.			
				Routinely test the sources according to industry requirements to document leak levels.			Test results
<b>3.6 VERTICAL SEISMIC PROFILING (VSP)</b>	Increased ambient underwater noise levels	Reduce disturbance of marine fauna, particularly cetaceans (whales and dolphins), seals, seabirds (particularly penguins) and turtles	Marine Faunal Management Plan	Undertake a risk assessment ahead of the VSP operation to determine if PAM equipment can be safely deployed considering the metocean conditions (specifically current. If so, implement PAM during pre-watch as well as during operation.	Drilling Contractor	During VSP operations	MMO monitoring (see Row M3-2 in Table 11-4)  MMO report
<b>3.6 VERTICAL SEISMIC PROFILING (VSP)</b>	Increased ambient underwater noise levels	Reduce disturbance of marine fauna, particularly cetaceans (whales and dolphins), seals, seabirds (particularly penguins) and turtles	Marine Faunal Management Plan	<u>Pre-start Protocols:</u> <ul style="list-style-type: none"> <li>Commence VSP profiling, as far as possible, during daylight hours with good visibility. However, if this is not possible due to prolonged periods of poor visibility (e.g., thick fog) or unforeseen technical issue which results in a night-time start, refer to "periods of low visibility" below.</li> <li>Undertake a 60-minute (as water depths &gt; 200 m) pre-shoot visual scan (prior to soft-starts / airgun tests) within the 500 m radius mitigation zone in order to confirm there is no cetaceans, turtles, penguins and shoaling large pelagic fish activity close to the source.</li> </ul>	Drilling Contractor	During VSP operations	MMO monitoring (see Row M3-2 in Table 11-4)  MMO report

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.6 VERTICAL SEISMIC PROFILING (VSP)</b>	Increased ambient underwater noise levels	Reduce disturbance of marine fauna, particularly cetaceans (whales and dolphins), seals, seabirds (particularly penguins) and turtles	Marine Faunal Management Plan	<ul style="list-style-type: none"> <li>Implement a “soft-start” procedure of a minimum of 20 minutes’ duration when initiating the VSP acoustic source (except if testing a single airgun on lowest power). This requires that the sound source be ramped from low to full power rather than initiated at full power, thus allowing a flight response by marine fauna to outside the zone of injury or avoidance.</li> <li>Delay “soft-starts” if cetaceans, turtles and shoaling large pelagic fish are observed / detected within the mitigation zone during the pre-shoot visual / acoustic scan. A “soft-start” should not begin until 20 minutes after cetaceans depart the mitigation zone or 20 minutes after they are last seen or acoustically detected by PAM in the mitigation zone. In the case of penguins, shoaling large pelagic fish and turtles, delay the “soft-start” until animals move outside the 500 m mitigation zone.</li> <li>Maintain visual observations and possibly acoustic detections within the 500 m mitigation zone continuously during VSP operation to identify if there are any cetaceans present.</li> </ul> <p><u>Shut-Downs</u></p> <ul style="list-style-type: none"> <li>Shut down the acoustic source if cetaceans, penguins, shoaling large pelagic fish or turtles are sighted within 500 m mitigation zone until such time as the mitigation zone is clear of cetaceans for 20 minutes or, in the case of penguins, shoaling large pelagic fish or turtles, the animals move outside the 500 m mitigation zone before the soft-start procedure and production may commence.</li> </ul>	Drilling Contractor	During VSP operations	MMO monitoring (see Row M3-2 in Table 11-4)  MMO report

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.6 VERTICAL SEISMIC PROFILING (VSP)</b>	Increased ambient underwater noise levels	Reduce disturbance of marine fauna, particularly cetaceans (whales and dolphins), seals, seabirds (particularly penguins) and turtles	Marine Faunal Management Plan	<p><u>Breaks in Airgun Firing: Breaks of less than 20 minutes</u></p> <ul style="list-style-type: none"> <li>There is no requirement for a soft-start and firing can recommence at the same power level as at prior to the break (or lower), provided no cetaceans, penguins, shoaling large pelagic fish or turtles were detected in the mitigation zone during the breakdown period.</li> <li>If a cetacean is detected in the mitigation zone during the breakdown period, there must be a minimum of a 20-minute delay from the time of the last detection within the mitigation zone and a soft-start must then be undertaken. In the case of penguins, shoaling large pelagic fish or turtles, the animals move outside the 500 m mitigation zone within the 20 minute period.</li> </ul>	Drilling Contractor	During VSP operations	MMO monitoring (see Row M3-2 in Table 11-4)  MMO report
				<p><u>Breaks in Airgun Firing: Breaks longer than 20 minutes</u></p> <ul style="list-style-type: none"> <li>If it takes longer than 20 minutes to restart the airguns, a full pre-watch and soft-start should be carried out before the survey re-commences. If an MMO/PAM operator has been monitoring during the breakdown period, this time can contribute to the 60-minutes pre-watch time.</li> </ul>			

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.6 VERTICAL SEISMIC PROFILING (VSP)</b>	Increased ambient underwater noise levels	Reduce disturbance of marine fauna, particularly cetaceans (whales and dolphins), seals, seabirds (particularly penguins) and turtles	Marine Faunal Management Plan	<p><u>Period of low visibility</u></p> <p>Ensure that during periods of low visibility (where the mitigation zone cannot be clearly viewed out to 500 m), including night-time, the VSP source is only used if PAM technology is used to detect vocalisations (subject to a risk assessment indicating that the PAM equipment can be safely deployed considering the metocean conditions) or:</p> <ul style="list-style-type: none"> <li>there have not been three or more occasions where cetaceans, penguins, shoaling large pelagic fish or turtles have been sighted within the 500 m mitigation zone during the preceding 24-hour period; and</li> <li>a two-hour period of continual observation of the mitigation zone was undertaken (during a period of good visibility) prior to the period of low visibility and no cetaceans, penguins, shoaling large pelagic fish or turtles were sighted within the 500 m mitigation zone.</li> </ul>	Drilling Contractor	During VSP operations	<p>MMO &amp; PAM Operator monitoring (see Row M3-2 &amp; M3-3 in Table 11-4)</p> <p>MMO / PAM report</p>
<b>3.7 AIR POLLUTION CONTROL DURING GENERAL OPERATION</b>	Emissions to the atmosphere during operation	Reduce volume of diesel burned and emissions to the air	Drill and logistics design	Optimise drilling unit positioning, drilling unit movement and the logistics (number of trips required to and from the onshore logistics base) in order to lower fuel consumption.	Drilling Contractor	Throughout operations	Fuel consumption monitoring (see Row M1-4 in Table 11-4)
			Waste and Discharges Management Plan	Use a low sulphur fuel that has a maximum sulphur content as specified by MARPOL.			

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.7 AIR POLLUTION CONTROL DURING GENERAL OPERATION</b>	Emissions to the atmosphere during operation	Reduce volume of diesel burned and emissions to the air	Waste and Discharges Management Plan	Report CO <sub>2</sub> , CH <sub>4</sub> and N <sub>2</sub> O levels (calculated based on Tier 2 or 3 methodologies) annually via SAGERS as required in terms of NEM: AQA for oil and gas exploration activities (code 1B2) under Annexure 1 of the amended Regulations.	TEEPSA	Annually	Fuel consumption monitoring (see Row M1-4 in Table 11-4)
				Submit an annual Carbon Tax environmental levy in July of each year after operations commence		Annually	
				Ensure no incineration of waste (subject to obtaining an atmospheric emissions licence, AEL) occurs within the port limits.	Drilling Contractor	Throughout operations	Incineration monitoring (see Row M1-1 & 1-2 in Table 11-4)
			Maintenance Plan	Implement a maintenance plan to ensure all diesel motors and generators receive adequate maintenance to minimise soot and unburnt diesel released to the atmosphere (as well as noise emissions).			
			Waste and Discharges Management Plan	Optimise well test programme to reduce flaring as much as possible during the test.	Drilling Contractor	During flaring	Flaring monitoring (see Row M1-9 in Table 11-4)
				Commence with well testing during daylight hours, as far as possible.			
				Use a high-efficiency burner for flaring to maximise combustion of the hydrocarbons in order to minimise emissions and hydrocarbon 'drop-out' during well testing.			

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.8 AIR POLLUTION CONTROL DURING WELL TEST</b>	Emissions to the atmosphere during flaring	Reduce volume of hydrocarbons burned and emissions to the air	Waste and Discharges Management Plan	Monitor flare (continuous) for any malfunctioning, interruption, etc.	Drilling Contractor	During flaring	Flaring monitoring (see Row M1-9 in Table 11-4)
				Report CO <sub>2</sub> , CH <sub>4</sub> and N <sub>2</sub> O levels (calculated based on Tier 2 or 3 methodologies) annually via SAGERS as required in terms of NEM: AQA for oil and gas exploration activities (code 1B2) under Annexure 1 of the amended Regulations.	TEEPSA	Annually	
				Submit an annual Carbon Tax environmental levy in July of each year after operations commence			
<b>3.9 POLLUTION CONTROL AND WASTE AND DISCHARGES MANAGEMENT DURING GENERAL OPERATION</b>	Discharge of liquid and solid waste to sea	Reduce discharges and improve quality of liquid and solid waste to sea by fulfilling the requirements of MARPOL 73/78 standards	Waste and Discharges Management Plan	Implement the following plans: <ul style="list-style-type: none"> <li>Waste and Discharges Management Plan.</li> </ul>	Drilling Contractor	Throughout operations	Copy of all plans
				Waste and Discharges Management Plan		Prohibit operational discharges when transiting through the Table Mountain National Park and Robben Island offshore MPAs and Cape Canyon and Seas of Good Hope EBSA.	Throughout operations
			Waste and Discharges Management Plan			Drilling unit and project vessels will have: <ul style="list-style-type: none"> <li>an onboard sewage treatment plant;</li> <li>a sewage comminuting and disinfecting system, and/or</li> <li>a sewage holding tank.</li> </ul>	Throughout operations
				Ensure sewage discharges comply with: <ul style="list-style-type: none"> <li>a BOD of &lt;25 mg/l (if the treatment plant was installed after 1/1/2010,) or &lt;50 mg/l (if installed before this date); and</li> <li>minimal residual chlorine concentration of 0.5 mg/l.</li> </ul>		Throughout operations, during discharges	Sewage Certificate containing the test results of

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.9 POLLUTION CONTROL AND WASTE AND DISCHARGES MANAGEMENT DURING GENERAL OPERATION</b>	Discharge of liquid and solid waste to sea	Reduce discharges and improve quality of liquid and solid waste to sea by fulfilling the requirements of MARPOL 73/78 standards	Waste and Discharges Management Plan	Sewage discharge to comply with the following: <ul style="list-style-type: none"> <li>No visible floating solids must be produced or discolouration of the surrounding water must occur.</li> <li>Sewage must be comminuted and disinfected for discharges between 3 nm and 12 nm from the coast.</li> <li>Disposal of sewage from holding tanks must be discharged at a moderate rate while the ship is proceeding on route at a speed not less than 4 knots.</li> </ul>	Drilling Contractor	Throughout operations, during discharges	the sewage treatment plant
			Waste and Discharges Management Plan	Galley waste discharge to comply with the following: <ul style="list-style-type: none"> <li>No disposal to occur within 3 nm of the coast.</li> <li>Disposal at &gt;3 nm from coast to be comminuted to particle sizes smaller than 25 mm.</li> <li>Disposal overboard without grinding can occur greater than 12 nm from the coast when the vessel is sailing. As the drilling unit will be stationary, food waste will need to be comminuted prior to discharge at the drilling site.</li> </ul>	Drilling Contractor	Throughout operations, during discharges	Waste monitoring (see Row M1-1 & 1-2 in Table 11-4) Inventory of volume of waste discharged and discharge location
				Minimise the discharge of waste material should obvious attraction of fauna be observed.			
Ensure all relevant deck and machinery drainage is routed to: <ul style="list-style-type: none"> <li>sump tanks on board for treatment prior to discharge to ensure MARPOL compliance.</li> <li>oil residue holding tanks.</li> </ul>	Waste monitoring (see Row M1-3 & M2-2 in Table 11-4) Oil Record Book						

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.9 POLLUTION CONTROL AND WASTE AND DISCHARGES MANAGEMENT DURING GENERAL OPERATION</b>	Discharge of liquid and solid waste to sea	Reduce discharges and improve quality of liquid and solid waste to sea by fulfilling the requirements of MARPOL 73/78 standards	Waste and Discharges Management Plan	Oil in water concentration in normal discharges (not produced water) must be less than 15 ppm prior to discharge overboard. The oil discharge monitoring and control system must ensure that any discharge of oily mixtures is stopped when the oil content of the effluent exceeds 15 ppm.	Drilling Contractor	Throughout operations, during discharges	Waste monitoring (see Row M1-3 & M2-1 in Table 11-4) Oil Record Book
				<ul style="list-style-type: none"> <li>Ensure all process areas are bunded to ensure drainage water flows into the closed drainage system.</li> <li>Use drip trays to collect run-off from equipment that is not contained within a bunded area and route contents to the closed drainage system.</li> </ul>			Waste monitoring (see Row M1-3 & M2-1 in Table 11-4)
				Use low-toxicity biodegradable detergents in deck cleaning.			Quantity of oil residue (sludge) produced.
				Implement leak detection and maintenance programmes for valves, flanges, fittings, seals, hydraulic systems, hoses, etc.			Record all discharges, together with date, time and method of discharge, disposal route, any system failure and accidental oil spills in the Oil Record Book
				Initiate a waste minimisation system, which includes awareness of reduced water usage.			
				No disposal overboard of general waste (e.g., domestic waste, cooking oil, plastics and incinerator ash)			
							Throughout operations

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.9 POLLUTION CONTROL AND WASTE AND DISCHARGES MANAGEMENT DURING GENERAL OPERATION</b>	Discharge of liquid and solid waste to sea	Reduce discharges and improve quality of liquid and solid waste to sea by fulfilling the requirements of MARPOL 73/78 standards	Waste and Discharges Management Plan	Ensure on-board solid waste storage is secure.	Drilling Contractor		Row M1 in Table 11-4)  Inventory volume of waste generated Inventory of volume transferred for onshore disposal / incinerated Waste receipts
				When authorized, incinerate (non-hazardous only subject to obtaining and AEL) waste or transport to a licensed onshore waste management facility for disposal/recycling. Retain waste receipts.			
				<ul style="list-style-type: none"> <li>Segregate, classify and store all hazardous waste in suitable receptacles on board in order to ensure the safe containment and transportation of waste</li> <li>Dispose of hazardous waste at a facility that is appropriately licensed and accredited.</li> </ul>			
<b>3.10 POLLUTION CONTROL AND WASTE AND DISCHARGES MANAGEMENT DURING WELL TESTING</b>	Discharge of liquid waste to sea	Reduce discharges and improve quality of liquid waste to sea by compiling with TEEPSA standards	Waste and Discharges Management Plan	Treat produced water prior to discharge.	Drilling Contractor	During discharge of produced water	Produced Water monitoring (see Row M1-10 in Table 11-4)
				<ul style="list-style-type: none"> <li>If following onboard treatment, the hydrocarbon content is &lt;30 mg/l, the produced water may be discharged overboard.</li> <li>If the content is &gt;30 mg/l, it should either undergo a second treatment (see bullet above) or be transferred to shore for treatment and disposal.</li> </ul>			
	Flaring off some of the oil and gas brought to the surface	Minimise the risk of hydrocarbon 'drop-out'	Waste and Discharges Management Plan	Optimise well test programme to reduce flaring as much as possible during the test.	Drilling Contractor	During flaring	Flaring monitoring (see Row M1-9 in Table 11-4)
				Commence with well testing during daylight hours, as far as possible.			
				Use a high-efficiency burner for flaring to maximise combustion of the hydrocarbons in order to minimise emissions and hydrocarbon 'drop-out' during well testing.			
			Monitor flare (continuous) for any malfunctioning, etc. (including any drop-out).				

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>3.11 LIGHT POLLUTION CONTROL DURING GENERAL OPERATION AND FLARING</b>	Increased ambient lighting	Protect marine fauna, migratory birds and seabirds by managing illumination of the project vessels Zero fatalities of marine fauna, migratory birds and seabirds	Marine Faunal Management Plan	<ul style="list-style-type: none"> <li>Reduce lighting to a minimum compatible with safe operations whenever and wherever possible.</li> <li>Positioning light sources, if possible and consistent with safe working practices, in places where emissions to the surrounding environment are minimised.</li> </ul>	Drilling Contractor	Throughout operations	Lighting monitoring (see Row M2-5 in Table 11-4)
				Keep disorientated, but otherwise unharmed, seabirds in dark containers (e.g., cardboard box) for subsequent release during daylight hours.	Drilling Contractor	As required	Record information on patterns of bird reaction to lights and real incidents of injury/death, including stray land birds resting on the project vessels
				Report ringed/banded birds to the appropriate ringing/banding scheme (details are provided on the ring).			
<b>3.12 BUNKERING / REFUELLING AT SEA</b>	Spill of hydrocarbons to sea	Protect marine environment  Minimise disturbance / damage to marine life	Stakeholder Engagement Plan	Transfer of oil at sea is not permitted within the economic zone (i.e. 200 miles from the coast) without the permission of SAMSA.  Submit an application (including location, supplier and timing) in terms of Regulation 14 to the SAMSA Principal Officer at the port nearest to where the transfer is to take place.	Contractors	As required, 5 days prior to refuelling	Provide copies of the correspondence with SAMSA and approval for bunkering

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
3.12 BUNKERING / REFUELLING AT SEA	Spill of hydrocarbons to sea	Protect marine environment  Minimise disturbance / damage to marine life	Contractor HSE Plan  Contractor Bridging Document  SOPEP	Offshore bunkering should not be undertaken in the following circumstances: <ul style="list-style-type: none"> <li>• Wind force and sea state conditions of <math>\geq 6</math> on the Beaufort Wind Scale;</li> <li>• During any workboat or mobilisation boat operations;</li> <li>• During helicopter operations;</li> <li>• During the transfer of in-sea equipment; and</li> <li>• At night or times of low visibility.</li> </ul>	Contractors	During bunkering	Bunkering (see Row M5-3 in Table 11-4)  Spill monitoring (see Row M5-2 in Table 11-4)  Record of all spills (Spill Record Book), including spill reports; emergency exercise reports; audit reports.
3.13 OPERATION OF HELICOPTERS for crew changes, servicing, etc.	Increased ambient noise levels	Minimise disturbance / damage to marine and coastal fauna  All pilots are briefed on sensitivity of bird and seal colonies and whale breeding areas	Flight path design	Ensure all flight paths avoid (except in medical emergency) the False Bay (Seal Island and Boulders Beach) and Robben Island seal and penguin colonies.	Helicopter contractor	All flights between drilling unit and Cape Town airport	Copy of set flight path (including altitude)  Helicopter logs  Deviations from set flight paths
				Maintain a flight altitude of at least 1 000 m, except when taking off and landing or in a medical emergency.	Helicopter contractor		
				Avoid extensive low altitude (<762 m or 2 500 ft)) coastal flights by ensuring that the flight path is perpendicular to the coast, as far as possible.	Helicopter contractor		
			Environmental Awareness Training	Comply with aviation and authority guidelines and rules especially on fauna harassment.	Helicopter contractor		
				Brief of all pilots, as part of the HSE indication for pilots, on the ecological risks associated with flying at a low altitude along the coast or above marine mammals.	TEEPSA and Helicopter contractor		

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>4. DEMOBILISATION PHASE</b>							
<b>4.1 ABANDONMENT OF WELLS</b>	Sealing and testing of wells	Isolate permeable and hydrocarbon bearing formations and avoid leakages	Drilling design	Seal well by inserting cement plugs in the well bore at various levels according to good oilfield practice.	Drilling Contractor	On completion of well drilling	Log on pressure testing the abandonment cement plugs
				Test for integrity.			Test results
				Remove BOP stacks and any other equipment that may have dropped on the seafloor.			ROV footage
				Install monitoring gauges on appraisal wells to monitor pressure and temperature where TEEPSA plan to return in the future for additional appraisal / production purposes.			
				Remove wellhead structures located within current demersal trawl "ring fenced" area.			
	Increased hard substrate on seafloor		Place an over-trawlable abandonment cap over wellhead, subject to site-specific risk assessments (and where a decision is taken to abandon on the seafloor), to minimise the risk of damage to demersal trawl gear, as well as potential damage to the wellheads. Note: if site-specific risk assessment concludes there is a danger or risk to other marine users, the wellheads will be removed.				
	Waste Management Plan			Ensure any excess cement onboard the drilling unit is shipped to shore for storage or disposal.			Waste receipts

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>4.1 ABANDONMENT OF WELLS</b>	Increased hard substrate on seafloor	Minimise impact on demersal trawl sector	Stakeholder Engagement Plan	Ensure abandoned well locations are surveyed and accurately charted with the SAN Hydrographer.	Drilling Contractor	On completion of well drilling	Correspondence with the SAN Hydrographer
		Ensure navigational safety	Emergency Response Plan	<ul style="list-style-type: none"> <li>Undertake final clearance survey by ROV to confirm the status of seafloor around the well to ensure no dropped equipment remain.</li> <li>Retrieve of lost objects / equipment, where practicable, after assessing the safety and metocean conditions.</li> <li>Refer to lost equipment in Row 5.2 for equipment that can't be retrieved.</li> </ul>	Drilling Contractor	On completion of well drilling	Seafloor monitoring (see Row M5-2 in Table 11-4)
<b>4.2 STAKEHOLDER CONSULTATION</b>	Safety zone around drilling unit	Ensure navigational safety	Stakeholder Engagement Plan	Inform all key stakeholders including HydoSAN (refer to Row 2.1) that the drilling unit and support vessels are off location and provide details of wellhead abandonment.	TEEPSA	Within two weeks after completion of drilling	Copies of notification documentation required
		Notification of all key maritime stakeholders		Maintain a functional grievance mechanism / procedure for recording any complaints or comments received from the public prior to and during the drilling campaign. Include resources to permit the investigation, resolution and close-out of all grievances.	TEEPSA, Drilling Contractor	Throughout the drilling campaign	Grievance monitoring (see Row M4-1 in Table 11-4)  Copy of grievance register and responses
<b>4.3 AIR POLLUTION CONTROL</b>	Emissions to the atmosphere	As per operation phase – refer to Row 3.7 above.					
<b>4.4 POLLUTION CONTROL AND WASTE AND DISCHARGES MANAGEMENT</b>	Discharge of liquid and solid waste to sea	As per operation phase – refer to Row 3.9 above.					

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>4.5 LIGHT POLLUTION CONTROL</b>	Increased ambient lighting	As per operation phase – refer to Row 3.11 above.					
<b>5. UNPLANNED EVENTS</b>							
<b>5.1 ACCIDENTAL OIL SPILLS</b>	Diesel spills from refuelling or from tank failure	Minimise impact to the marine fauna and the environment by implementing response procedures efficiently	SOPEP  Emergency Response Plan	Implement emergency plans in Row 1.1 above.	Contractors	In event of spill	Spill monitoring (see Row M5-4 in Table 11-4)  Record of all spills (Spill Record Book), including spill reports; emergency exercise reports; audit reports  Incident log
				Ensure personnel are adequately trained in both accident prevention and immediate response, and resources are available on each vessel.			
				<ul style="list-style-type: none"> <li>Mop up any spills onboard immediately with biodegradable low toxicity detergents.</li> <li>Use oil absorbent.</li> </ul>			
				Attempt to control and contain the spill at sea, as far as possible and whenever the sea state permits, using suitable recovery techniques to reduce the spatial and temporal impact of the spill.			
				Where diesel, which evaporates relatively quickly, has been spilled, the water should be agitated or mixed using a propeller boat/dinghy to aid dispersal and evaporation.			
				Use low toxicity dispersants, with the permission of DFFE, that rapidly dilute to concentrations below most acute toxicity thresholds.			
				Ensure adequate resources are provided to collect and transport oiled birds to a cleaning station.			

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping	
<b>5.2 EQUIPMENT LOSS</b>	Obstruction on seafloor or in water column	Protect sensitive seabed habitat	Preventive Maintenance Plan	Ensure containers are sealed / covered during transport and that loads are lifted using the correct lifting procedure and within the maximum lifting capacity of crane system.	Contractors	During operation	Equipment monitoring (see Row M2-6 and M5-2 in Table 11-4)  Establish a hazards database listing: <ul style="list-style-type: none"> <li>the type of gear lost</li> <li>date of abandonment / loss</li> <li>location; and</li> <li>where applicable, the dates of retrieval</li> </ul>	
				Minimise the lifting path between vessels.				
				Maintain an inventory of all equipment and undertake frequent checks to ensure items and equipment are stored and secured safely on board each vessel.				
		Minimise risk of collision / accident / entanglement and inform relevant parties	Emergency Response Plan	<ul style="list-style-type: none"> <li>Undertake a post drilling ROV survey to scan seafloor for any dropped equipment near to the well.</li> <li>Retrieve of lost objects / equipment, where practicable, after assessing the safety and metocean conditions.</li> </ul>		As required		
		When any item that constitute a seafloor or navigation hazard is lost on the seabed, or in the sea, complete a standard form which records the date and cause of loss, details of equipment type, vessel Sea Control location, sea state and weather, and the nature of the seabed. Pass information to PASA and SAMSA.	Drilling Contractor	As required				Copies of all correspondence

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
<b>5.3 FAUNAL COLLISIONS WITH PROJECT VESSELS</b>	Vessel strikes	Minimise risk of collision with large cetaceans	Marine Faunal management Plan	Ensure vessel transit speed between the drill site and port is a maximum of 12 knots (22 km/hr), except within 25 km of the coast where it is reduced further to 10 knots (18 km/hr), as well as when sensitive marine fauna are present in the vicinity.	Drilling Contractor	During transit	Vessel speed (see Row M5-2 in Table 11-4)
				Keep a constant watch from all vessels (Vessel Captain and crew) for cetaceans and turtles in the path of the vessel. Alter course and avoid animals when necessary.			
				Report any collisions with large whales to the International Whaling Commission (IWC) database, which has been shown to be a valuable tool for identifying the species most affected, vessels involved in collisions, and correlations between vessel speed and collision risk.		As required	
<b>5.4 WELL BLOW-OUT</b>	Oil spill from well blow-out	Minimise impact to the marine fauna and the environment by implementing response procedures efficiently	BOCP OSCP ERP SOPEP	Implement emergency plans in Row 1.1 above.	Drilling Contractor	In event of loss of well control or well blow-out	Spill monitoring (see Row M5-2 in Table 11-4)  Record of all spills (Spill Record Book), including spill reports; emergency exercise reports; audit reports  Incident log
				Ensure a standby vessel is within 30 minutes of the drilling unit and equipped for dispersant spraying and can be used for mechanical dispersion (using the propellers of the ship and/or firefighting equipment). It should have at least 10 m <sup>3</sup> of dispersant onboard for initial response.			
				In the event of a large spill, use drifter buoys and satellite-borne Synthetic Aperture Radar (SAR)-based oil pollution monitoring to track the behaviour and size of the spill and optimise available response resources.			
				Take all efforts, when the sea state permits, to attempt to control and contain the spill at sea with suitable recovery techniques to reduce the spatial and temporal impact of the spill.			

Project Activities	Aspect	Environmental and Social Performance Objectives / Impact Management Outcomes or Targets	Associated Plan and Procedure	Mitigation / Management Actions	Responsibility	Frequency / Timing	Monitoring and record keeping
		Minimise impact that may result in a financial loss to individuals, companies and other organisations.	Stakeholder Engagement Plan	Plan for and implement responses in terms of IPICEA-IOGP guideline document for the economic assessment and compensation for marine oil releases.	TEEPSA		