



Exploration Drilling within Block ER236, off the East Coast of South Africa

Draft Scoping Report – V2

January 2018

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Exploration Drilling within Block ER236, off the East Coast of South Africa

Eni

Draft Scoping Report

January 2018

Compiled by: Claire Alborough and Lindsey Bungartz

For and on behalf of Environmental Resources
Management

Approved by: Ingeborg McNicoll

Signed:

Position: Senior Partner

Date: 19 January 2017

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List of Abbreviations, Acronyms and Units

ADI	Area of Direct Influence
AEL	Atmospheric Emissions Licence
AII	Area of Indirect Influence
ALARP	As Low As Reasonably Practicable
AOI	Area of Influence
BAR	Basic Assessment Report
CH₄	Methane
CO	Carbon monoxide
CO₂	Carbon dioxide
CRR	Comments and Response Report
CSP	Concentrated Solar Power
DAFF	Department of Agriculture, Forestry and Fisheries
DC	Direct Current
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DOE	Department of Energy
DP	Dynamic Positioning
DPS	Dynamic Positioning System
DSR	Draft Scoping Report
DWS	Department of Water and Sanitation
E	East
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EIS	Ecological Importance and Sensitivity
EMBF	Enhanced Mineral Oil Based Fluid
EMP	Environmental Management Plan
EMPr	Environmental Management Plan report
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
Eps	Equator Principles
ERM	Environmental Resources Management
EEZ	Exclusive Economic Zone
FSR	Final Scoping Report
GDARD	Gauteng Department of Agriculture and Rural Development
GEMSS	Generalized Environmental Modelling System for Surfacewaters
GHG	Greenhouse Gas
GJ	Giga Joules
GNR	Government Notice Regulation
ha	Hectares
HSE	Health, Safety, Environment
I&APs	Interested & Affected Parties
IAEA	International Atomic Energy Agency
ICRC	International Commission on Radiological Protection
IDZ	Industrial Development Zone
IEM	Integrated Environmental Management
IEP	Integrated Energy Plan

IFC	International Finance Corporation
m	Meters
mamsl	Meters Above Mean Sea Level
MAP	Mean Annual precipitation
MARPOL	International Convention for the Prevention of Pollution from Ships
MES	Minimum Emissions Standards
MGO	Marine Gas Oil
MPRDA	Mineral and Petroleum Resources Development Act
MPRDAA	Mineral and Petroleum Resources Development Amendment Act
NADF	Non-Aqueous Drilling Fluids
NDP	National Development Plan
NEMA	National Environmental Management Act
NEMAA	National Environmental Management Amendment Act
NEMAQA	National Environmental Management: Air Quality Act
NEMBA	National Environmental Management: Biodiversity Act
NEMWA	National Environmental Management: Waste Act
NEMICMA	National Environmental Management: Integrated Coastal Management Act
OPRC	International Convention on Oil Pollution Preparedness, Response and Co-operation
PASA	Petroleum Agency South Africa
PM	Particulate Matter
POB	People on Board
PoS	Plan of Study
PPE	Personal Protective Equipment
PPP	Public Participation Process
PS	Performance Standard
PSVs	Platform Supply Vessels
ROV	Remote Operated Vehicle
S&EIR	Scoping and Environmental Impact Report
SAHRA	South African Heritage Resources Agency
SBF	Synthetic Based Fluids
SDFP	Spatial Development Framework Plan
SO₂	Sulphur Dioxide
SO_x	Sulphur Oxides
SRE	Solids Removal Efficiency
ToR	Terms of Reference
UNCLOS	United Nations Convention on Law of the Sea
VOCs	Volatile Organic Compounds
VOS	Voluntary Observing Ships
WBDF	Water-Based Drilling Fluids
WML	Waste Management Licence
%BFROC	Percent Base Fluid Retained On Cuttings

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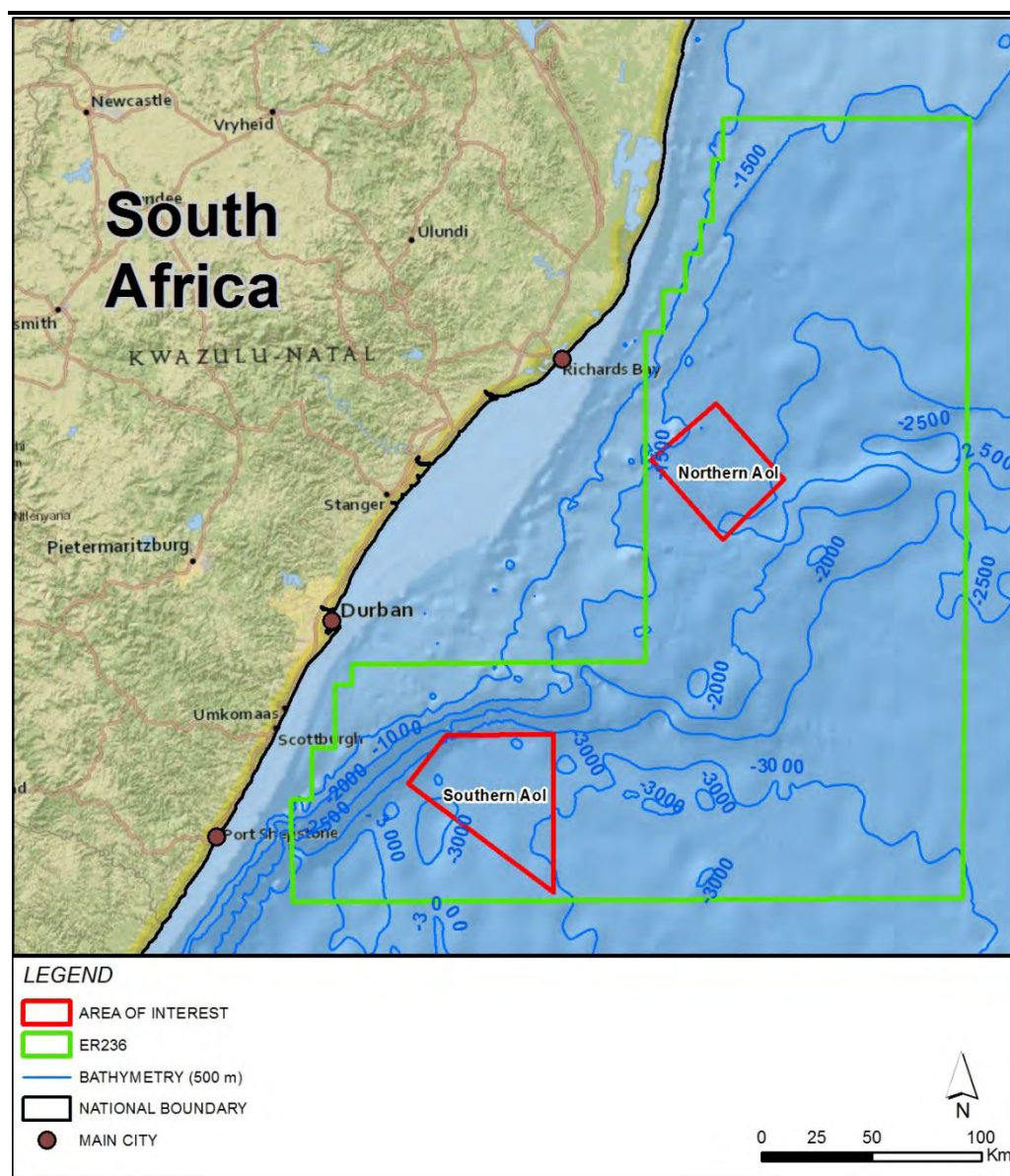
1.1 PROJECT BACKGROUND

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an Exploration Right off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER236 (12/3/236) to assess the commercial viability of the hydrocarbon reservoir for future development.

Eni is considering drilling up to six deep water wells within Block ER236, four wells within a northern 1,840 km² area of interest, in water depths ranging between 1,500 m and 2,100 m and two wells within a southern 2905 km² area of interest (Figure 1.1), in water depth ranging between 2,600 m and 3,000 m. The specific number of wells and their locations would be based on a number of factors, including further analysis of seismic data, the geological target (the hydrocarbon bearing geology into which the well is to be drilled), and the presence of any seafloor obstacles. In addition, the success (if valuable hydrocarbon is discovered) of the first well in each area will determine whether or not subsequent wells are drilled.

The drilling of the first exploration well is planned in 2019. The expected drilling depth would be approximately 3,800 m and 4,100 m from the sea surface to target depth in the northern area, while at around 5,450 m in the southern one. The drilling of one well is expected to take in the order of two months to complete. Depending on the success of the first well within the northern area of interest, up to three additional wells comprising an additional exploration well at a second location and the possibility of one appraisal close to each exploration well location, may be drilled to establish the quantity and potential flow rate of any hydrocarbon present. The time sequence of these possible additional wells will be dependent on the results of the first exploration well, and will not occur immediately after the drilling of the initial well. Within the southern area of interest one potential exploration well will be drilled and a possible appraisal well depending on the results of the first well. Well testing may be conducted on the appraisal wells if they present potential commercial quantities of hydrocarbon.

Figure 1.1 Locality Map



1.2 PURPOSE OF THIS PROJECT

ERM has been appointed by Eni to undertake the full Environmental Impact Assessment (EIA) Process as per the National Environmental Management Act (NEMA) (Act No. 107 of 1998) Regulations, 2014 (as amended in 2017). The project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR), through the Petroleum Agency South Africa (PASA). The authorisation would be under NEMA. Since this is an offshore oil and gas project, the DMR is the competent authority, which means that it has powers to either authorise the development or refuse it.

Applications must be submitted to PASA, who is responsible for evaluating applications, entering into negotiations with applicants and making recommendations to the Minister of Mineral Resources on their acceptability.

A typical EIA is usually undertaken in three phases namely Scoping Phase, Specialist Study Phase and Impact Assessment. This Scoping Report documents the findings of the Scoping Phase.

The Scoping Report identifies the potentially significant environmental and social issues relating to the establishment/construction, operation and decommissioning of the proposed project that should be addressed in the EIA. This was done through a desktop review of available project and baseline information, and initial public engagement.

Copies of the draft Scoping Report will be available for public comment for 30 days. Comments will be addressed in a Comments and Responses Report and included in the final Scoping Report submitted to PASA for review.

The Scoping Report includes a description of the proposed project infrastructure and activities, alternatives considered, and the EIA methodology. A description of the stakeholder engagement process and the key issues raised by stakeholders through the consultation activities are also presented. These issues have informed the development of the Plan of Study for EIA which defines the detailed studies to be undertaken as part of the specialist studies phase.

1.3 PROJECT PROPONENT

The contact details for the applicant are presented below:

Box 1.1 Contact Details of Project Applicant / Proponent

Eni South Africa BV
1st Floor, Icon Building c/o Cube WS
Cnr Lower Long St. & Hans Strijdom Rd.
Foreshore, 8001, Cape Town, South Africa
Wrk: +27 21 412 1582
Contact: Alessandro Gelmetti, Managing Director

1.4 THE EIA TEAM

ERM is a global environmental consulting organisation employing over 5,000 specialists in over 150 offices in more than 40 countries. In South Africa, ERM Southern Africa employs over 150 environmental consultants out of offices in Johannesburg, Durban and Cape Town.

The requirement for environmental consultants to act independently and objectively is a well-established principle in South African law and elsewhere. The EIA regulations (GN R.982, as amended), specifically state that an EAP (environmental assessment practitioner) (must have) no business, financial, personal or other interest in the activity, application or appeal in respect of which that EAP is appointed in terms of these Regulations other than fair remuneration for work performed in connection with that activity; or that there are no circumstances that may compromise the objectivity of that EAP in performing such work.

ERM is a privately owned company registered in South Africa. ERM has no financial ties to, nor is ERM a subsidiary, legally or financially, of Eni. Remuneration for the services by the Proponent in relation to this EIA is not linked to an approval by the decision-making authority. Furthermore, ERM has no secondary or downstream interest in the development.

The role of the environmental consultants is to provide credible, objective and accessible information to government and other stakeholders, so that an informed decision can be made about whether the project should proceed or not.

The ERM team selected for this project possess the relevant expertise and experience to undertake this EIA. As such, ERM has signed the legally required declaration of independence to function as an objective Environmental Assessment Practitioner (EAP). The CVs and details of the Independent Environmental Practitioner are presented in *Annex A*.

The contact details of the EAP for the application are presented in **Box 1.1**

Box 1.2

Contact Details of the EAP

Environmental Resources Management Southern Africa (Pty) Ltd.

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The core EIA team members involved in this EIA are listed in *Table 1.1*.

Table 1.1 **The EIA Team**

Name	Role	Qualifications, Experience
Ingeborg McNicoll	Project Director	BSc (Hons) Marine Biology. 35 years' experience
Claire Alborough	Project Manager	BSc (Hons), MPhil, 10 years' experience
Lindsey Bungartz	Stakeholder Engagement Specialist	BSocSc (Hons), 10 years' experience

1.5 **UNDERTAKING BY EAP**

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

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

As such ERM and the practitioners managing the project confirm the following:

- To the best of our knowledge that the information provided in this Scoping Report is the most recent detail provided by the proponent and specialists thus far in the process.
- Comments and associated response are included in *Annex B* and summarised in a comments and responses report (CRR).
- Information provided to and communication with stakeholders is included in *Annex B*.

Table 1.2 illustrates the legislated content of the Scoping Report.

Table 1.2 *Content of Scoping Report*

Legislated Content- Appendix 2 Section 2	Section in this Report
(a) details of-	
(i) the EAP who prepared the report	Chapter 1
(ii) the expertise of the EAP, including a curriculum vitae	Chapter 1 and Annex A
(b) the location of the activity	Section 4.1
(i) the 21 digit Surveyor General code of each cadastral land parcel;	
(ii) where available, the physical address and farm name;	
(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	
(c) a plan which locates the proposed activity or activities applied for at an appropriate scale, or if it is-	Chapter 4
(i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or	
(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	
(d) a description of the scope of the proposed activity, including-	
(i) all listed and specified activities triggered;	Section 2.3.2
(ii) a description of the activities to be undertaken, including associated structures and infrastructure	Chapter 4 and Section 2.3.2
(e) a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process	Chapter 2 and 3
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Chapter 2
(g) a full description of the process followed to reach the proposed preferred activity, site and location of the development footprint within the site, including	
(i) details of all the alternatives considered;	Section 4.8
(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section 6.6 and Annex B
(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	CRR in Annex C
(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Chapter 5
(v) the impacts and risks which have informed the identification of each alternative, including the nature, significance, consequence, extent, duration and probability of such identified impacts, including the degree to which these impacts-	Chapter 4
(aa) can be reversed;	
(bb) may cause irreplaceable loss of resources; and	
(cc) can be avoided, managed or mitigated.	
(vi) the methodology used in identifying and ranking the nature, significance, consequences, extent, duration and probability of potential	Chapter 4, 7 and 8

Legislated Content- Appendix 2 Section 2	Section in this Report
environmental impacts and risks associated with the alternatives	
(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	<i>Chapter 4 and 7</i>
(viii) the possible mitigation measures that could be applied and level of residual risk	<i>Chapter 4 and 7</i>
(ix) the outcome of the site selection matrix	<i>Chapter 4</i>
(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such	<i>Chapter 4</i>
(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity	<i>Chapter 4</i>
(h) a plan of study for undertaking the environmental impact assessment process to be undertaken, including-	
(i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity	<i>Chapter 8</i>
(ii) a description of the aspects to be assessed as part of the environmental impact assessment process;	<i>Chapter 8</i>
(iii) aspects to be assessed by specialists;	<i>Chapter 8</i>
(iv) a description of the proposed method of assessing the environmental aspects, including aspects to be assessed by specialists	<i>Chapter 8</i>
(v) a description of the proposed method of assessing duration and significance	<i>Chapter 8</i>
(vi) an indication of the stages at which the competent authority will be consulted;	<i>Chapter 8</i>
(vii) particulars of the public participation process that will be conducted during the environmental impact assessment process;	<i>Chapter 8</i>
(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;	<i>Chapter 8</i>
(ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	<i>Chapter 8</i>
(i) an undertaking under oath or affirmation by the EAP in relation to –	
(i) the correctness of the information provided in the report;	<i>Chapter 1</i>
(ii) the inclusion of comments and inputs from stakeholders and interested and affected parties; and	<i>Chapter 1</i>
(iii) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	<i>Chapter 1</i>
(j) an undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	<i>To be included in Final Scoping Report</i>
(k) where applicable, any specific information required by the competent authority;	<i>To be included in Final Scoping Report</i>
(l) any other matter required in terms of section 24(4) (a) and (b) of the Act.	

The remainder of this Report is structured as follows:

- Chapter 2: Project Motivation
- Chapter 3: Administrative Framework
- Chapter 4: Project Description
- Chapter 5: Environmental and Social Baseline
- Chapter 6: EIA Process
- Chapter 7: Identification of Impacts
- Chapter 8: Plan of Study for EIA
- Chapter 9: Conclusion

The Report is supported by the following annexes:

- Annex A: Details of Environmental Assessment Practitioner
- Annex B: Stakeholder Engagement
 - B1 - I&AP Database
 - B2 - Initial Notification Material
 - B2.1 - Notification
 - B2.2 - Adverts
 - B2.3 - Background Information Document
 - B3- Site Notices
 - B4 - Comments Received
- Annex C: Comments and Responses Report

2 ADMINISTRATIVE FRAMEWORK

2.1 INTRODUCTION

This section provides an overview of legislation, conventions and information documents that have informed the scope and content of this report and the approach to the EIA process.

2.2 OVERVIEW OF 'ONE ENVIRONMENTAL SYSTEM'

In 2007 / 2008, the Department of Environmental Affairs (DEA) and the Department of Mineral Resources (DMR) agreed that environmental regulation would be removed from the scope of the MPRDA and would be regulated under NEMA, which would give rise to a "One Environmental System" for the country relating to mining and related activities. The implementation of this was given effect by the National Environmental Management Amendment Act, 2008 (No. 62 of 2008) (NEMAA) and the Mineral and Petroleum Resources Development Amendment Act, 2008 (No. 49 of 2008) (MPRDAA).

Subsequent to the 8 December 2014, all applications for Environmental Authorisations (EA's), including those for mining and petroleum related activities previously regulated in terms of the MPRDA, must now be undertaken in terms of NEMA and the associated EIA Regulations.

2.3 KEY RELEVANT LEGISLATION

2.3.1 *Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)*

The primary legislation governing the South African upstream mining and petroleum sector is the MPRDA. Although the MPRDA governs South Africa's petroleum industry as well as its mining industry, petroleum activities are primarily accommodated within a separate chapter of the statute, namely, Chapter 6. Chapter 6 makes provision for two permits (reconnaissance permits and technical co-operation permits) and two rights (exploration rights and production rights).

In terms of the MPRDA, an Exploration Right must be approved prior to the commencement of exploration activities. Eni and Sasol hold an existing Exploration Right for ER236, which is currently in its first two year renewal period, as of 11 07 2017.

The Act should be read together with the Mineral and Petroleum Resources Development Regulations, 2004 (GNR.527 of 23 April 2004); (MPRDA Regulations) and it should be noted that the MPRDA is currently pending amendment by the MPRDA Amendment Bill 15D, 2013. The current form of the amendments would however not change the Environmental Authorisation process or requirements in terms of NEMA.

2.3.2 *National Environmental Management Act (Act No. 107 of 1998)*

The National Environmental Management Act (No.107 of 1998) (NEMA) is the South African framework legislation with respect to environmental protection and management. Section 2 of NEMA provides a range of environmental principles that are to be applied by organs of state when making decisions that significantly affect the environment. Two of the key principles include:

- Environmental management must place people and their needs at the forefront, and serve their physical, psychological, developmental, cultural and social interests equitably.
- Development must be socially, environmentally and economically sustainable.

NEMA also provides for the participation of Interested and Affected Parties (I&APs) and stipulates that decisions must take into account the interests, needs and values of all I&APs.

Section 28 of NEMA imposes a duty of care on every person who causes, has caused, or may cause significant pollution or degradation of the environment to take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring.

The Environmental Authorisation process in South Africa is governed by NEMA as amended and the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended) promulgated under NEMA. The relevance of this legislation is summarised below.

NEMA Environmental Authorisation

Chapter 5 of NEMA, as amended, outlines the general objectives and implementation of Integrated Environmental Management. This provides a framework for the integration of environmental issues into the planning, design, decision-making and implementation of plans and development proposals that are likely to have a detrimental effect on the environment. Whilst Section 23 sets out the basic objectives and principles of the IEM procedure, Section 24 sets out how these objectives and principles are to be accomplished.

Regulations governing the environmental authorisation process have been promulgated in terms of NEMA and include the following:

- Environmental Impact Assessment Regulations (GNR R982/2014);
- Environmental Impact Assessment Regulations Listing Notice 1 (GNR 983/2014);
- Environmental Impact Assessment Regulations Listing Notice 2 (GNR 984/2014); and
- Environmental Impact Assessment Regulations Listing Notice 3 (GNR 985/2014).

*It should be noted that the above regulations were amended in April 2017 by Government Notices 324, 325, 326 and 327.

Activities that trigger GNR 983 and GNR 985 require a Basic Assessment Report (BAR) process to be undertaken, whereas activities identified in terms of GNR 984 will require a full Scoping and Environmental Impact Report (S&EIR) process. GNR 982 sets out the general procedure to follow when conducting either a BAR or S&EIR process.

With reference to the EIA Regulations 2014 (as amended), the identification of the competent authority states as follows:

‘The competent authority in respect of the activities listed in this part of the schedule is the competent authority in the province in which the activity is to be undertaken, unless-

- a) it is an application for an activity contemplated in section 24C(2) of the Act, in which case the competent authority is the Minister or an organ of state with delegated powers in terms of section 42(1) of the Act;
- b) the listed or specified activity is or is directly related to-
 - i. **prospecting or exploration of a mineral or petroleum resource;** or
 - ii. **extraction and primary processing of a mineral or petroleum resource;**

It is therefore understood that the competent authority for this project will be the Department of Mineral Resources (DMR). As such, Eni will be required to obtain a positive Environmental Authorisation from the DMR prior to commencement of the proposed activities. The Petroleum Agency of South Africa (PASA) accept and process offshore petroleum EA applications on behalf of the DMR, however the DMR is required to sign off on the final decision.

Numerous trigger activities have been identified for this project in terms of all the listing notices (refer to *Table 2.1*).

In instances where all the listing notices are triggered (as in this project), GNR 984 requirements will take precedent and the project will be subject to a full S&EIR process prior to commencement of any of the associated activities.

Table 2.1 *Listed Activities in Terms of the NEMA EIA Regulations, 2014 (as amended, 2017)*

Listed Activity	Activity Description	Project Trigger
GNR 983 Activity 14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.	The proposed drilling operation would make use of infrastructure which would handle and potentially store oil, gas and/or fuel (diesel). Information on the anticipated storage capacity for these substances is currently not confirmed and this activity is included to provide for a situation where storage capacity exceeds 80 m ³ but falls below 500 m ³ .
GNR 983 Activity 22	The decommissioning of any activity requiring – (i) a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); or (ii) a prospecting right, mining right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure.	In terms of Section 43(3) of the MPRDA, a closure certificate must be applied for upon, inter alia: <ul style="list-style-type: none"> the lapsing of an Exploration Right; or the relinquishment of any portion of the licence area. Based on the results of the well drilling programme, a decision would be made as to whether to permanently or temporarily abandon the wells. The possible abandonment of wells may result in a decision by Eni to relinquish the licence area or a portion thereof.
GNR 984 Activity 7	The development and related operation of facilities or infrastructure for the bulk transportation of dangerous goods— (i) in gas form, outside an industrial complex, using pipelines, exceeding 1 000 metres in length, with a throughput capacity of more than 700 tons per day; (ii) in liquid form, outside an industrial complex, using pipelines, exceeding 1 000 metres in length, with a throughput capacity of more than 50 cubic metres per day;	The proposed project would make use of drilling infrastructure (eg pipes, casings etc.) which would potentially transport oil and/or gas to the drilling unit should a discovery be made. Due to the anticipated depth of the proposed wells, this infrastructure would exceed 1 000 m in length. The designed throughput capacity of this infrastructure could potentially exceed the thresholds specified in the listed activity.

Listed Activity	Activity Description	Project Trigger
GNR 984 Activity 14	The development and related operation of- (ii) An anchored platform; or (iii) any other structure or infrastructure on, below or along the sea bed	The proposed drilling operations would result in the placement of drilling equipment (ie a wellhead) on the sea bed. In the case that a well is unsuccessful, the wellhead equipment would be removed. However, should the well be commercially viable, the wellhead would potentially remain in place until such time as the well is brought into production.
GNR 984 Activity 18	Any activity including the operation of that activity which requires an exploration right as contemplated in section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including – (a) associated infrastructure, structures and earthworks;	Eni currently hold an Exploration Right for ER236. An Environmental Management Programme (EMPr) was undertaken for the initial Exploration Right application in terms of the MPRDA requirements at the time. The Work Programme approved for the Exploration Right and the EMPr did not cover the drilling of exploration wells. PASA has confirmed that an EIA in terms of NEMA is required to be undertaken for this activity.

Financial Provision Regulations, 2015

Section 24P of NEMA requires that an applicant for EA relating to prospecting, mining, exploration, production or related activities on a prospecting, mining, exploration or production area must make the prescribed financial provision for the rehabilitation, management and closure of environmental impacts, before the Minister responsible for mineral resources issues the EA.

In terms of the National Environmental Management Act: Regulations Pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations, Operations (GN R1147, which came into effect on 20 November 2015) an applicant or holder of a right must determine and make financial provision to guarantee the availability of sufficient funds to undertake rehabilitation and remediation of the adverse environmental impacts of exploration, operations, as contemplated in the Act and to the satisfaction of the Minister of Mineral Resources. The financial provision determination and a decommissioning plan must be submitted to the Minister as part of the Environmental Authorisation application process.

2.3.3 *National Environmental Management: Waste Act (No. 59 of 2008)*

Section 19 of National Environmental Management: Waste Act (No. 59 of 2008) (NEMWA) provides for the listing of waste management activities that have, or are likely to have a detrimental effect on the environment.

In accordance with this, GN 921 of 29 November 2013 lists waste management activities for which a waste management licence (WML) is required in terms of Section 20 of the Act. Furthermore, it classifies each of the waste management activities into different categories, with more onerous provisions assigned for activities that are regarded as being more detrimental to the environment. In this regard, 'Category A' activities require a NEMA BAR process to be conducted prior to commencement. 'Category B' activities require a full S&EIR process to be conducted, while 'Category C' activities are wholly exempt from the WML permitting process, as long as they show compliance with a set of prescribed standards.

It is ERM's understanding that a WML is not required for the currently proposed activities.

2.3.4 *National Environmental Management: Air Quality Act (No. 39 of 2004)*

National Environmental Management: Air Quality Act (No. 39 of 2004) (NEMAQA) deals with the control and management of emissions related to activities contained in the Listed Activities and Associated Minimum Emission Standards GN 893 of 22 November 2013 (MES). NEMAQA prescribes the need for an Atmospheric Emission Licence (AEL) if more than 10 kg of operational waste is incinerated per day. The AEL process involves the undertaking of a Basic Assessment in accordance with NEMA.

Should Eni decide to incinerate non-toxic combustible wastes on the drilling unit and support vessels, they would be required to apply to DEA: Air Quality Management Services for an AEL. It is however currently Eni's intention to bring all wastes to shore for appropriate disposal.

2.3.5 *National Environmental Management: Integrated Coastal Management Act (No. 24 of 2008)*

The National Environmental Management: Integrated Coastal Management Act (No. 24 of 2008) (NEMICMA) sets out a system of integrated coastal and estuarine management in South Africa to promote the conservation of the coastal environment and to ensure that the development and the use of natural resources within the coastal zone are socially and economically justifiable and ecologically sustainable. Section 69 of the NEMICMA prohibits the discharge of effluent that originates from a source on land into coastal waters except in terms of a CWDP issued by the DEA.

NEMICMA has also provided for the repeal of the former Sea-shore Act 21 of 1935 and the Dumping at Sea Control Act 73 of 1980.

Dumping Regulations

Dumping at Sea Regulations were published on 21 July 2017 in terms of sections 83(1) (g), (h), (k) and (r) of NEMICMA, these govern dumping permit applications as allowed for by section 71(1) of NEMICMA. However, it should be noted that, as per NEMICA, dumping does not include:

- disposing of or storing in the sea any tailings or other material from the bed or subsoil of coastal waters generated by the lawful exploration, exploitation and associated off-shore processing of mineral resources from the bed, subsoil or substrata of the sea; and
- operational waste from a vessel, aircraft, platform or other man-made structure at sea.

As such it is understood that a dumping permit would not be required for this project.

2.4 OTHER APPLICABLE LEGISLATION

This section provides a list of other national and international legislation and conventions potentially applicable to the proposed project. Additional authorisations or permits may be required in terms of such legislation, but fall outside the scope of this EIA process.

2.4.1 National Legislation

National legislation potentially relevant for the project (in addition to those presented in preceding sections) is listed below.

- Constitution of the Republic of South Africa (No. 108 of 1996);
- National Environmental Management: Integrated Coastal Management Act (No. 24 of 2008);
- National Water Act (No. 36 of 1998);
- National Heritage Resources Act (No. 25 of 1999);
- National Environmental Management: Biodiversity Act (No. 10 of 2004);
- National Environmental Management: Protected Areas Act (No. 57 of 2003);
- Sea-Shore Act (No. 21 of 1935);
- Marine Living Resources Act (No. 18 of 1998);
- Occupational Health and Safety Act (No. 73 of 1989);
- Gas Act (No. 48 of 2001);
- Noise Control Regulations under the Environmental Conservation Act (No. 73 of 1989);
- Major Hazard Installation Regulations (GNR. 692 of 30 July 2001);
- Hazardous Substances Act (56 of 1973) and Regulations (No. 85 of 1983);
- Explosives Act (No. 15 of 2003);
- Electricity Regulation Act (No. 4 of 2006);

- Nature and Environmental Conservation Ordinance (No. 19 of 1974);
- Marine Pollution (Prevention of Pollution from Ships) Act (No. 2 of 1986);
- National Ports Act (No. 12 of 2005); and
- Marine Traffic Act (No. 2 of 1981).
- Carriage of Goods by Sea Act, 1986 (No. 1 of 1986);
- Dumping at Sea Control Act, 1980 (No. 73 of 1980);
- Marine Pollution (Control and Civil Liability) Act, 1981 (No. 6 of 1981);
- Marine Pollution (Intervention) Act, 1987 (No. 65 of 1987);
- Maritime Safety Authority Act, 1998 (No. 5 of 1998);
- Maritime Safety Authority Levies Act, 1998 (No. 6 of 1998);
- Maritime Zones Act, 1994 (No. 15 of 1994);
- Merchant Shipping Act, 1951 (No. 57 of 1951);
- Mine Health and Safety Act, 1996 (No. 29 of 1996);
- National Nuclear Energy Regulator Act, 1999 (No. 47 of 1999);
- Nuclear Energy Act, 1999 (No. 46 of 1999);
- Sea Birds and Seals Protection Act, 1973 (No. 46 of 1973);
- Ship Registration Act, 1998 (No. 58 of 1998);
- South African Maritime Safety Authority Act, 1998 (No. 5 of 1998);
- South African Maritime Safety Authority Levies Act, 1998 (No. 6 of 1998);
- Wreck and Salvage Act, 1995 (No. 94 of 1995).

Applicable provisions from these laws and regulations will be incorporated into the design and implementation of the Project.

2.4.2 *International Requirements*

International Marine Pollution Conventions

- International Convention for the Prevention of Pollution from Ships, 1973/1978 (MARPOL);
- Amendment of the International Convention for the Prevention of Pollution from Ships, 1973/1978 (MARPOL) (Bulletin 567 – 2/08);
- International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC Convention);
- United Nations Convention on Law of the Sea, 1982 (UNCLOS);
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Convention) and the 1996 Protocol (the Protocol);
- International Convention relating to Intervention on the High Seas in case of Oil Pollution Casualties (1969) and Protocol on the Intervention on the High Seas in Cases of Marine Pollution by substances other than oil (1973);
- Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (1989); and

- Convention on Biological Diversity (1992).

Other International Legislation

- International Commission on Radiological Protection (ICRC); and
- International Atomic Energy Agency (IAEA) Regulations for the Safe Transport of Radioactive Material, 1984.

3.1 NEED AND DESIRABILITY**3.1.1 Project Background: Oil Exploration in South Africa**

In 1967, the government of the Republic of South Africa granted to Soekor (Pty) Ltd (under exploration Lease OP26) the right to explore for oil and gas in the whole of the offshore region of the South African Coast (with the exception of the area under the now defunct OP8, a five nautical mile coastal strip between Cape Town and the Wilderness). In 1994, the offshore region to approximately the 2,000 m isobath ⁽¹⁾ was divided into licence blocks numbered 1 to 18 for the purposes of licensing acreage for oil and gas exploration to international companies.

In 1996, the Soekor Petroleum Licensing Unit, now the Petroleum Agency of South Africa (PASA), was created with the prime function of attracting international exploration companies to prospect for offshore oil and gas. The OP26 Lease was transferred to PASA in October 2000.

Although exploration offshore of South Africa began in the 1940's, with the majority of exploration drilling occurring between 1981 and 1991, commercial oil and gas discoveries have been limited. Offshore exploration off South Africa's coast was previously restricted primarily by the depth of the potential resources and secondly by the ocean currents. Recent improvements in exploration technology, coupled with the need for South Africa to diversify its energy mix has seen increased interest in exploration activity off South Africa's coast (SAOGA). ⁽²⁾

It has been estimated that South Africa has possible resources of approximately 9 billion barrels of oil and approximately 60 trillion cubic feet of gas offshore, however uncertainty remains high (Operation Phakisa, 2014) and further exploration activities are necessary to prove the viability of these resources.

The main objective of further exploration is to investigate the subsea geological structures to determine the presence of naturally occurring hydrocarbons (ie oil and gas), ultimately ensuring the development of the natural oil and gas resources of the Republic of South Africa.

(1) Defined as a line on a map connecting points of equal underwater depth.

(2) <https://www.saoga.org.za/oil-gas-hubs/upstream-oil-gas-south-africa>

The South African White Paper on the Energy Policy (1998) is the overarching policy document which has guided and continues to guide future policy and planning in the energy sector. As outlined in the Ministerial foreword to the White Paper, fossil fuels play a central role in the socio-economic development of the country, while at the same time providing the necessary infrastructural economic base for the country to become an attractive host for foreign investments in the energy sector. The white paper states that 'Government will ensure the optimal and environmentally sustainable exploration and development of the country's natural oil and gas resources to the benefit of all' and undertakes to 'ensure private sector investment and expertise in the exploitation and development of the country's oil and gas resources'. The successful exploitation of these natural resources would contribute to the growth of the economy and relieve pressure on the balance of payments.

The development of a National Integrated Energy Plan (IEP) was envisaged in the White Paper on the Energy Policy of the Republic of South Africa of 1998 and, in terms of the National Energy Act, 2008 (Act No. 34 of 2008), the Minister of Energy is mandated to develop and, on an annual basis, review and publish the IEP in the Government Gazette. The purpose of the IEP is to provide a roadmap of the future energy landscape for South Africa which guides future energy infrastructure investments and policy development. (DoE, 2016). Key objectives of the IEP (2016) include the following:

- Security of supply;
- Minimising the cost of energy; and
- Diversification of supply sources and primary sources of energy.

The discovery of a commercially viable reserve of oil and/or gas offshore South Africa would assist in meeting the above objectives.

In addition, in mid-2014 the South African government launched Operation Phakisa, an approach that aims to enable South Africa to implement its policies and programmes better, faster and more effectively. One of Operation Phakisa's aims is to unlock the economic potential of South Africa's oceans. In this regard four priority sectors have been selected as new growth areas in the ocean economy, including:

- Marine transport and manufacturing activities, such as coastal shipping, trans-shipment, boat building, repair and refurbishment;
- Offshore oil and gas exploration;
- Aquaculture; and
- Marine protection services and ocean governance.

In summary, based on the overarching policies and the explicit intentions of Operation Phakisa, the South African government's position is supportive of oil and gas exploration.

3.1.3

Conclusion

South Africa's current crude oil demand is over 600 000 barrels / day. South Africa currently imports approximately 70 percent of its liquid fuel, which comprises crude oil and finished products. The other approximately 30 percent is sourced from the local production of synfuels from coal and gas. Crude oil prices combined with the Rand/Dollar exchange rate therefore have a major impact on fuel prices in South Africa. ⁽¹⁾

In light of the above, exploration success would result in long-term benefits for South Africa consisting of access to new energy sources, improved security of supply, in-country investments in a development project (including job creation), increased government revenues, contribution to economic growth and reduced dependence on the importation of hydrocarbons.

(1) http://www.energy.gov.za/files/petroleum_frame.html

4.1 BACKGROUND OF THE PROPOSED PROJECT

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an Exploration Right (ER236), offshore of the KwaZulu-Natal coast, between St Lucia and Port Shepstone. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 (12/3/236) to assess the commercial viability of the hydrocarbon reservoir for future development.

Depending on the success (if valuable hydrocarbon is discovered) of the first exploration well in each area of interest, up to three additional wells in the northern area of interest, comprising an additional exploration well at a second location and the possibility of one appraisal well close to each exploration well location and one additional appraisal well in the southern area of interest, may be drilled to establish the quantity and potential flow rate of any hydrocarbon present.

The specific number of wells and their locations would be based on a number of factors, including further analysis of seismic data, the geological target (the hydrocarbon bearing geology into which the well is to be drilled), and the presence of any seafloor obstacles. The time sequence of these possible additional wells will be dependent on the results of the first exploration wells. Well testing may be conducted on the appraisal wells if they present potential commercial quantities of hydrocarbon.

4.2 PROJECT LOCATION

Eni proposes to drill exploration wells inside Block ER236, within two areas of interest:

- a northern 1,840 km² area of interest, which is located, at its closest point, approximately 62 km from shore, in water depths ranging between 1,500 m and 2,100 m (*Figure 4.1*).
- a southern approximately 2905 km² area of interest, which is located, at its closet point, approximately 65 km from shore, in water depths ranging between 2600 m and 3000 m (*Figure 4.1*).

The expected drilling depth would be between approximately 3,800 m and 4,100 m from sea level in the northern area, while around 5,450 m for the southern area.

The co-ordinates of the Block ER236 and the drilling areas of interest are provided in *Table 4.1* and *Table 4.2* respectively.

Table 4.1 *Coordinates of the Block ER236 (WGS84 UTM Zone 36S)*

Point	Latitude	Longitude
A	27°48'30"S	32°52'0"E
B	27°48'30"S	34°0'0"E
C	31°0'0"S	34°0'0"E
D	31°0'0"S	30°49'0"E
E	30°35'0"S	30°49'0"E
F	30°35'0"S	30°55'0"E
G	30°22'24,6"S	30°55'0"E
H	30°22'24,72"S	31°2'0"E
I	30°7'0"S	31°2'0"E
L	30°2'0"S	32°30'0"E
M	28°41'18"S	32°30'0"E
N	28°41'18"S	32°35'20"E
O	28°31'4"S	32°35'20"E
P	28°31'4"S	32°41'30"E
Q	28°21'59"S	32°41'30"E
R	28°21'59"S	32°45'40"E
S	28°13'51"S	32°45'40"E
T	28°13'51"S	32°49'0"E
U	27°58'47"S	32°49'0"E
V	27°58'47"S	32°52'0"E

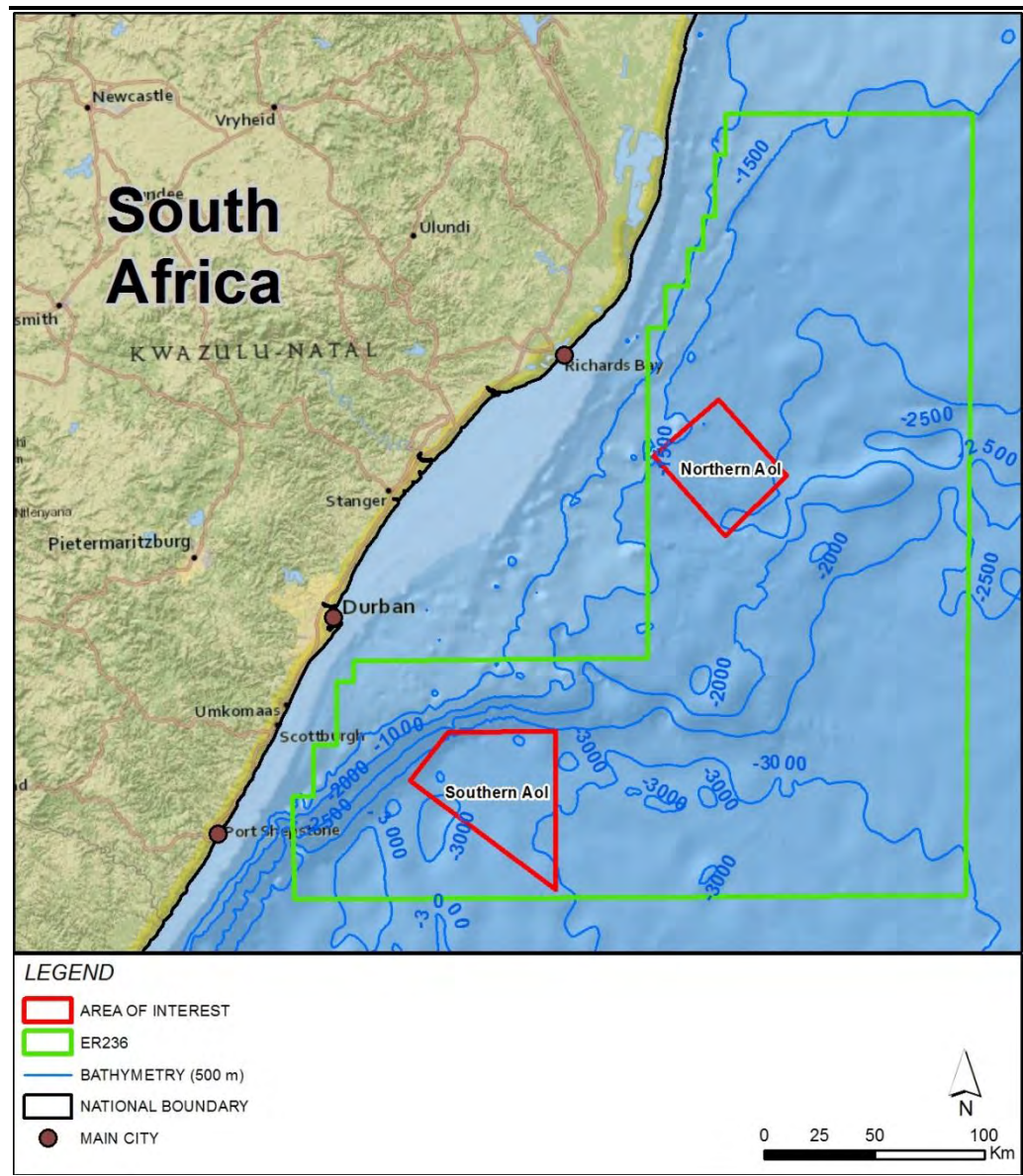
Table 4.2 *Coordinates of the Northern Drilling Area of Interest (WGS84 UTM Zone 36S)*

Point	Latitude	Longitude
A	29° 12' 33,29"S	32° 31' 45.95"E
B	28° 58' 47.34"S	32° 49' 32.73"E
C	29° 17'28,53"S	33° 8' 58.56"E
D	29° 32' 6.28"S	32° 51' 38.52"E

Table 4.3 *Coordinates of the Southern Drilling Area of Interest (WGS84 UTM Zone 36S)*

Point	Latitude	Longitude
A	30°19' 39.588"E	32° 3' 48.518"E
B	30°58' 35.904"E	32° 3' 25.921"E
C	30°31' 35.022"E	31° 22' 26.396"E
D	30°19' 49.794"E	31° 33' 7.656"E

Figure 4.1 Location of the Project Area



4.3 PROJECT SCHEDULE

The earliest that drilling is expected to take place is in 2019. The drilling of one well is estimated to take approximately 71 days to complete.

The drillship will be mobilised from either West or East Africa and will enter South African waters either at the Namibian or Mozambican border, as such at the worst case mobilisation will take in the order of 5 days.

This section describes the main project components, these include the following:

- Deep Water Drillship;
- Exclusion Zone;
- Shore base;
- Supply and stand-by vessels;
- Personnel;
- Crew transfer; and
- Infrastructure and services.

4.4.1 *Deep Water Drillship*

Various types of drilling vessels are used worldwide in offshore drilling operations, with the type of unit typically dependent on water depths in which it needs to operate. Alternative drilling vessels types are discussed further in *Section 4.8.2*. Due to water depth in the area of interest, it is anticipated that exploratory drilling will be conducted using a deep water drillship. The deep water drill ship (*Figure 4.2*) will be kept in position using a dynamic positioning system (DPS) which allows for minimal subsea disturbance due to its ability to operate without moorings. A significant benefit to using a drill ship is the ease of mobility as it is a self-propelled vessel with the flexibility to move from location to location without the need of transport vessels. An example of deep water drillship specifications is presented in *Table 4.4* below.

Figure 4.2 Example of a Typical Drillship



Source: Shutterstock, 2017

Table 4.4 Example Drillship Specifications

Parameter	Example Drillship
Principal Dimensions / Operating Parameters	
Length	228 m
Breadth	42 m
Depth	19 m
Operational draft	12 m
Transit draft	13 m
Maximum water depth	3,658 m
Maximum drilling depth	10,660 m
Moonpool	25.6 m x 10.26 m
Available Accommodation	200 People on Board (POB)
Storage Capacities	
Active mud	2,000 bbl
Reserve mud	10,000 bbl
Brine water	3,000 bbl
Base oil	3,000 bbl
Bulk mud/cement	34,500 bbl
Drill water	18,000 bbl
Fuel oil	50 000 bbl
Machinery / Equipment / Fittings	
Main generator sets	6 x diesel generators, 9, 900 HP each

Source: Eni, 2015 and Saipem, 2017¹

4.4.2 Exclusion Zone

During the drilling operations, there will be a temporary 500 m safety zone around the drillship, which will be enforced by a standby vessel. The safety zone would be described in a Notice to Mariners as a navigational warning.

The purpose of the safety zone is to prevent a vessel collision with the drillship during operations. Under the Marine Traffic Act, 1981 (No. 2 of 1981), an “exploration platform” or “exploration vessel” used in prospecting for or mining of any substance falls under the definition of an “offshore installation” and as such it is protected by a 500 m safety zone.

Under the Convention on the International Regulations for Preventing Collisions at Sea (COLREGS, 1972, Part B, Section II, Rule 18), a drillship that is engaged in underwater operations is defined as a “vessel restricted in its ability to manoeuvre” which requires that power-driven and sailing vessels give way to a vessel restricted in her ability to manoeuvre. Vessels engaged in fishing are required to, so far as possible, keep out of the way of the well drilling operation.

¹ http://www.saipem.com/SAIPEM_en_IT/scheda/Vessels/Saipem+12000.page

4.4.3

Shore Base

An onshore logistics base would be located in either Richards Bay or Durban, on an existing brownfield site (previously developed land) within the Port or the Industrial Development Zone (IDZ). A final decision has not yet been taken as a logistics survey is still to be undertaken in the identified areas.

This base would include a yard area and a warehouse, to provide storage for drilling materials, including hardware material (tubular, wellhead), bulks (barite, bentonite, cement), other minor equipment. In the case where water and diesel supply by pipeline is not available, it could be necessary to provide a limited storage (tanks) to avoid interruptions in supply. The need for an area for setting a mud plant is still to be clarified. Supply vessels providing fuel, food supplies, water etc. to the drillship would also use the shore base. In addition, the shore base would have a mooring area with minimum draft of 6,5 m and length of about 100 m, a temporary office for up to 5 persons, and would include temporary waste management transfer facilities and bunkering service for vessels.

Preliminarily, the following maximum space requirements have been identified:

- Open area/pipe yard: up to 5,000 sqm;
- Warehouse: up to 500 sqm; and
- Shelter: up to 100 sqm.

These values are the maximum potential values as the possibility of using the maximum storage capacity of the drillship is being investigated in order to reduce onshore space requirements.

The location of the heliport for crew change and MEDEVAC services, as well as the commercial airport to be utilised will be determined once the logistic base location is confirmed.

4.4.4

Supply and Standby Vessels

For the duration of the drilling operation, the drillship will be supported by platform supply vessels (PSVs), which are general purpose vessels designed to carry a variety of equipment and cargo. These vessels will supply the drillship three to four times a week with drilling muds, cement and equipment such as casing, drill pipe and tubing. They will also remove waste that must be appropriately disposed of on land. The number of firm PSVs has not yet been defined (it is anticipated that there will be two or three).

A standby vessel (or a PSV in dual mode – supply and standby) would also be available to support the drilling operations during an emergency, including oil containment/recovery and rescue and to supply any specialised equipment necessary in case of an emergency.

The standby vessel would also be used to patrol the area to ensure that other vessels adhere to the 500 m exclusion zone around the drillship.

4.4.5 *Personnel*

The shore base will be located in Richards Bay or Durban and all shore based personnel will reside locally. The majority of on-shore staff employed will be local if an existing locally based logistics company will be evaluated as suitable for operational logistics support and follow up. If not suitable, expatriate staff expert in drilling operations will integrate with and train inexperienced local staff. Eni representatives will also be located in the Cape Town Office.

The drillship will accommodate around 200 personnel. The majority of staff employed will be expatriates due to the short-term nature of the work and the necessary expertise and required technical skills. In accordance with Eni's guidelines the vessel will be manned as a minimum in compliance with the requirements of the Flag State and the IMO Reg A 890 (21) – Principle of Safe Manning, dated 25 Nov. 1999. In addition, the crew must also be adequate in terms of number and qualifications to safely operate the vessel and to carry out all operations.

The number of personnel on the supply vessels will vary based on vessel size and the types of activities they support. The preferred option is to utilise local vessel and staff if suitable for drilling operations service. All workers will be provided with health and safety training and Personal Protective Equipment (PPE) suitable for the types of activities.

4.4.6 *Crew Transfers*

Transportation of personnel to and from the drillship would most likely be provided by helicopter operations from Richards Bay or Durban. The drillship would accommodate around 200 personnel. Crews would generally work in 12 hour shifts in 2 to 4 week cycles. Crew changes would be staggered, and in combination with ad hoc personnel requirements. Thus helicopter operations to and from the drillship would occur on an almost daily basis. The helicopter crew would generally work in 10 hour shifts in 2 to 4 week cycles and in accordance with Eni's Aviation Manual.

4.4.7 *Infrastructure Support and Services*

Freshwater

The project will require seawater and some limited industrial water for making the water based drilling muds for the upper hole sections of the well and for rig cleaning. This industrial water will be transported from shore.

The drinking (potable) water for the POB the drillship will be either bottled water or provided by reverse osmosis system.

The estimated amount of water to be utilised by the project will be quantified during the EIA process and presented in the EIR. The amount of water used by the project will be managed by implementing Eni’s sustainable water management guideline.

Fuel

Estimates for the fuel (marine gas oil) use per day by the drillship and supply vessels during transit, standby and drilling operations are provided in *Table 4.5* below. The estimated total fuel consumption during the mobilisation and drilling phase (approximately 5 days drillship mobilisation and 71 days drilling) by all the project vessels is provided in *Table 4.6*.

Table 4.5 *Estimated Daily Fuel Use by the Drillship and Supply Vessels*

Vessel	Mobilisation	Drilling phase
Drillship (tonnes/day)	90	30
Supply Vessels for Supply Service (tonnes/day/vessel)	10	10
Supply Vessel for Standby Service	4	4

Table 4.6 *Total Estimated Fuel Consumption by the Drillship and Supply Vessels*

Fuel Demand Estimate	Total fuel consumption (tonnes)
Drillship	2,580
Supply Vessel for Supply service	710
Supply Vessel for Standby service	284
Total	3,574

Food Supplies and Local Services

A catering company will provide food and beverages to the offshore vessels. Food selection, quantities, and sourcing will be undertaken with support from the shore base (coordinate local purchases, etc.), it has not as yet been confirmed; however it is likely that the bulk of food will be purchased in either Richards Bay or Durban.

4.5 PROJECT ACTIVITIES

Project activities associated with drilling include the following phases:

- Mobilisation of the supply vessels to Richards Bay or Durban, operation of the shore-based facilities for handling support services needed by the drillship;
- Drilling of a well;
- Well execution (side track, logging, completion) options;

- Optional well testing;
- Well abandonment; and
- Demobilisation of the drillship, vessel and local logistics base.

All activities will be conducted in conformity with recognised industry international best practice.

4.5.1 Mobilisation Phase

Vessel Mobilisation and Site Preparation

During mobilisation, the drillship will arrive directly on location from previous country of intervention (probably from West Africa or North/East Africa). Support vessels could sail directly in convoy with the drillship to site or from the Richards Bay or Durban mooring area. The drillship will be equipped with navigation equipment for accurate station keeping above the well location (dynamic positioning – using thrusters).

Once in position, the drillship will carry out its pre-drilling activities comprising seabed survey; remote operated vehicle (ROV) dive; positioning; beacon placement and dynamic positioning (DP) trials. These activities will be followed up with safety checks, drills, communication tests and drilling of the pilot hole.

4.5.2 Drilling Phase

Well Drilling

After the mobilisation, the first process is the drilling phase. The strategy for the first exploration planned well is not yet defined and, therefore, could be in the northern drilling area of interest consisting of drilling a main hole approximately 62 km south east of Richards Bay, in water depths ranging between 1,500 m and 2,100 m or in the southern drilling area where the exploration well is approximately 145 km east north-east of Port Shepstone, in a water depth of around 3,000 m. The drilling activity proposed is a vertical well to a total depth of approximately 3,800 m and 4,100 m below the seafloor (*Figure 4.4*) for the wells located in the northern area, while 5,450 m for the well located in the southern area, in order to evaluate and confirm the commercial viability of the reservoir. The expected hydrocarbon for this well is oil.

A standard well design and program for subsea well has been described below, however this will be updated after the completion of seismic interpretation and stratigraphy evaluation by the geologists and petroleum engineers. The well path will be defined accordingly.

During the drilling phase, different drilling bits sizes are used to drill a series of telescoping holes, from the seabed to the total depth of the planned well. The first hole, the outer, is the biggest and called the top hole, while the next inner holes are progressively smaller and smaller as the well depth increases. This continues until the final hole, which is the smallest, reaches the reservoir level.

The drill bit is connected to surface by a string of hollow tubulars referred to as the drill string. On the rig floor, drill pipes are one by one attached to the top of the string as the drill bit advances into the borehole. The action of drilling (creating a hole in the rocks stratigraphy) is obtained by applying weight and rotation to the bit.

The topdrive, installed in the drillship's derrick, advances the drill string into the well, and provides the rotation and weight on bit required to drill. To give additional torque, sometimes a downhole motor is installed at the bottom of the string, whose rotor is connected to the bit. A sophisticated telemetry system is connected to the string and it transmits to surface the drilling parameters (direction, pressure, rotation, weight etc.) to guarantee a full control and safety during the drilling phase.

Once each hole section has been drilled, casing (steel tubulars) is run into the well and cemented in place to secure/seal the hole interval just drilled and to allow for the drilling of the next (smaller) hole section. A wellhead is connected to the surface casing, to have a connection and anchoring point for the following casing head sections and the marine riser.

The cement operation consists in pumping cement down the drill string to the bottom. The cement flows, out the bottom of the casing shoe and back up into the annular space around the casing, the space between the cased hole and open hole.

When the cementing job is completed, a mechanical and sealing test is performed. Casing plus cement is a tested barrier that facilitates the drilling of the next section, allowing to reach the target final depth in the safest way.

Figure 4.3 Subsea Well Schematic at the End of Drilling Phase

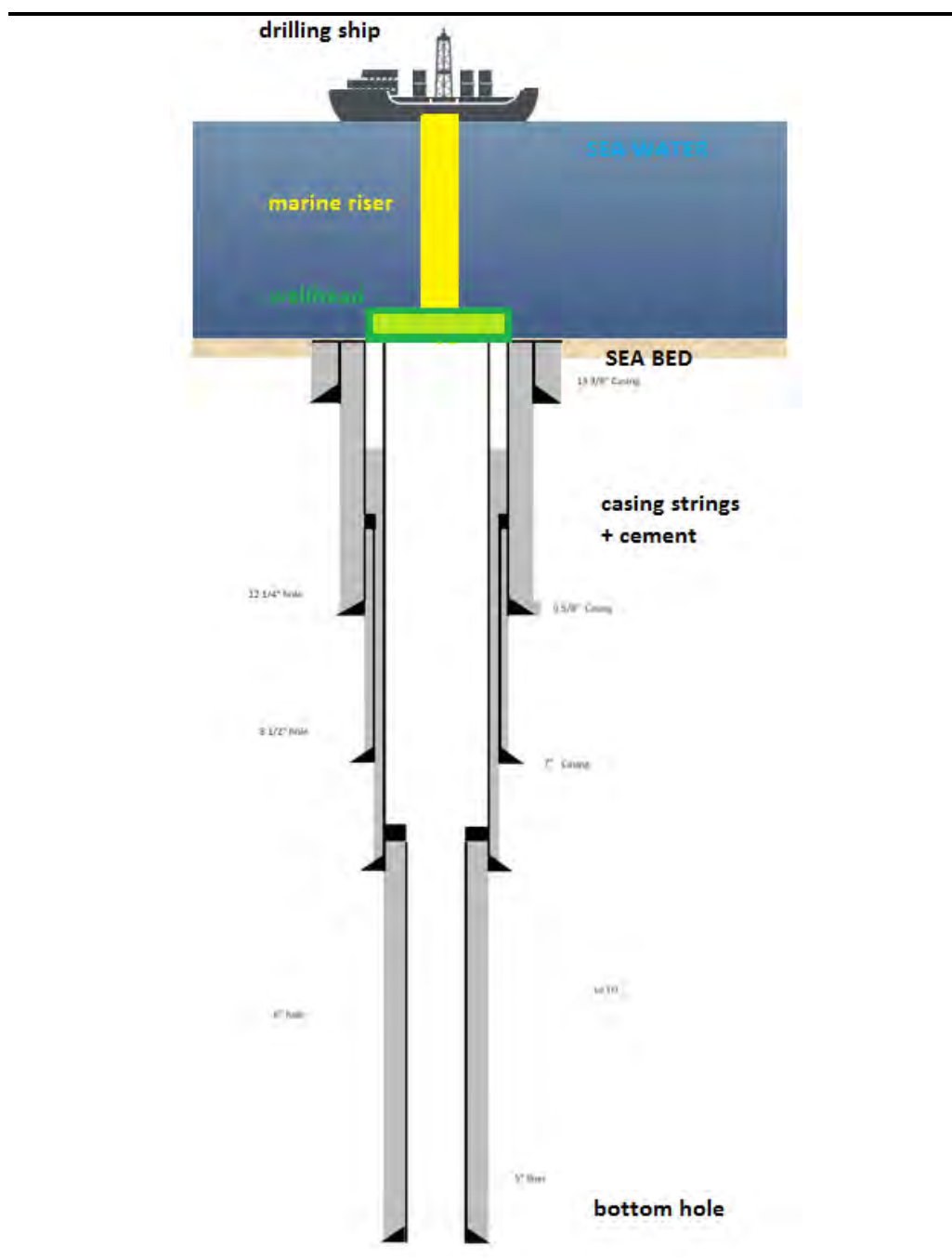


Table 4.7 Preliminary Well Design

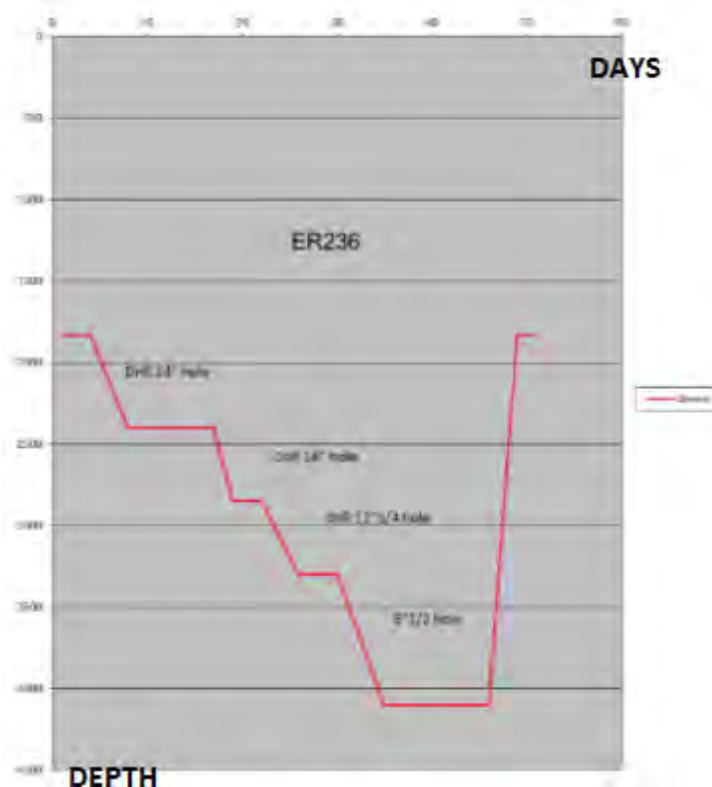
Section	Hole Size (inches)	Casing size (inches)	Drilling interval (m) [length -m-]	Estimated effective drilling duration (days)
1	42"	36"	Jetted	1
2	24"	20"	600 m	4
3	16"	13 5/8	600 m	6
4	12"1/4	9 5/8	700 m	12
5	8 1/2		700 m	12
Total	-	-	1,900 m	52 **

Source: Eni; 2015

**There are unproductive days between sections of the well. The total number of effective drilling days is 52, while the duration of the drilling activities would be 71 days, without testing.

Figure 4.4

Preliminary Well Schematic – Main Hole Effective Drilling Time



Mud System and Cuttings Discharge

Drilling is carried out using seawater and drilling mud. Muds can be water based mud (WBM), also called water base fluid (WBF), or non-aqueous drilling fluid (NADF).

Sea water is used during the first sections drilled riserless, the top hole drilling without riser installed. In conjunction with seawater, high viscous pills and sweeps could be used for the top-hole sections cleaning.

Water-Based Muds (WBM) consist of mixtures of clays, natural and synthetic organic polymers, mineral weighting agents, and other additives dissolved or suspended in freshwater, saltwater or brine (OGP, 2016). These muds are used subsequent to the installation of the riser.

Non-Aqueous Drilling Fluids (NADF): Deep water drilling concepts are technically challenging and require high performance drilling fluids with capabilities exceeding those available from WBM, in particular in terms of prevention of formation of hydrates and preservation of wellbore stability. As a result, non-aqueous drilling fluids (NADF), for which the continuous phase is primarily a non-water soluble base fluid, have also been used extensively by the petroleum industry. Low toxicity mineral oil based fluids, highly refined mineral oils and synthetic fluids (esters, paraffin's and olefins) are generally used as base fluids.

An IOGP Group 3 non aqueous base fluid (NABF) with low to negligible aromatic content will be used for this project. ⁽¹⁾

A combination of seawater, WBMs and NADFs will be used for drilling activities in the drilling area of interest. The mud program will be defined based on final well design and expected rheology.

The main functions of drilling fluids (also referred to as drilling muds) include the following:

- Removal of drilled rock cuttings from the the bottom of the well and from the well bore and transportation of these cuttings to the surface;
- Control of formation pressures and prevention of formation fluids entering the well bore (ie 'primary well control');
- Transmission of hydraulic horsepower to the drill bit;
- Provision of hydrostatic pressure as well as chemical stability to the rock to maintain the integrity of the hole and prevent hole collapse;
- Corrosion control of the metal components of the drilling tools;
- Lubrication and cooling of the drill bit.

The physical and chemical properties of the drilling fluid are constantly monitored and adjusted to suit varying down-hole conditions. These conditions are, in part, due to the variation in formation pressure within the well bore at different depths. In particular, fluid density (or mud weight) is adjusted via weighting materials such as barite.

For deep water well construction, after drilling the first casing interval, a drilling riser, ie a hollow tube known as the 'marine riser' is run between the drillship and the wellhead at seabed, so that drilling fluid can be pumped through the drill pipe, out through the drill bit and circulated back up to surface through the marine riser. The marine riser allows cuttings to be brought back up to the rig to be collected and properly disposed.

Prior to the installation of the riser, meaning during the drilling of top hole intervals drilled riserless, sea water, high viscous pills and sweeps, cuttings and excess cement are returned directly to the seabed (quantities of discharges are included in *Section 4.5.2*).

(1) Based on classification by the International Oil and Gas Producers (IOGP).

Once the riser is installed the drilling fluid is circulated into the well bore through the centre of the drill pipe and the mixture of mud and cuttings is then returned to the rig via the annulus to a solids control system (*Figure 4.5*), which is designed so that drilling mud can be processed to remove drill cuttings (small rock fragments, sand and silt) and subsequently re-circulated back down-hole. The WBM and/or NADF drill cuttings are routed through a cuttings dryer (centrifuge type equipment) to remove residual liquids for reuse and the cuttings are discharged overboard in accordance with Eni's Waste Management Guidelines, local regulation and International recommendations. Solids removal efficiency for each hole section will be monitored to ensure solids control and fluids recovery equipment is operating as designed.

The WBM and/or NADF drill cuttings will be discharged overboard only following treatment in accordance with International recommendations and Eni's Waste Management Guidelines. Base fluid retained on cuttings will not exceed limits detailed in *Section 4.6.2*.

Please see *Section 4.8.2* for a discussion of the alternative methods for cuttings discharge.

The amount of drilling waste discharge estimated for one well is quantified in *Table 4.8* below.

Table 4.8 *Typical Well Design and Estimated Discharges*

Section	Hole Size (inches)	Casing size (inches)	Proposed Mud Type	Volume of cuttings (m ³)	Volume of mud to be disposed of (m ³) ^o
1	42"	36"	Sea water and sweeps	100	200 (seabed)
2	24"	20"	Sea water and sweeps	300	700 (seabed)
3	16"	13 5/8	NADF	120	recovered
4	12"1/4	9 5/8	NADF	70	recovered
5	8 1/2		NADF	30	recovered
Total	-	-	-	620	900

Source: Eni; 2015

Well Execution Options

Well Logging

Continuous testing is carried out on the drill cuttings transferred to the surface. These tests are used to determine and obtain information on the presence of hydrocarbons, formation types being drilled and formation pressures. Further information is obtained on the physical properties of the rock formations by means of open and cased hole logging using sensors introduced down-hole on a wireline cable, or by means of sensors located in the drill collar (measurement while drilling). A logging plan will be developed and implemented in accordance with standard industry best practices. In the case of exploration wells, once a full log of the reservoir section has been undertaken, the well will be permanently plugged and abandoned.

Well Completion

Well completion and well testing operations will not be conducted during exploration wells (first wells) drilling but, if hydrocarbon is discovered, may be performed after drilling of the appraisal wells.

The completion phase of an oil or gas well takes place after the reservoir formation has been drilled and the production casing cemented. Preliminary completion operations are usually required to clean and condition a wellbore from mud, in order to prepare the well for the following operations.

At the beginning of the completion operations, the wellbore is displaced with a completion brine, necessary to balance the downhole pressure and, at the same time, to complete the removal of mud and solids from the well in order to minimise any potential damage to the formation.

A specific tubular string, the completion string, is then run in hole. This string can be secondary named well testing or completion strings, if used during well testing or in the case of preparation for further production respectively.

This string allows subsea safety, guaranteeing full control of hydrocarbon flow during the testing or production phase.

Subsequently the weighted completion fluid that maintains sufficient pressure and prevents formation fluids from migrating into the hole, is displaced out of the well-bore in order to start the next phase, if required, the well testing phase.

Well Testing

As stated previously, well testing may be conducted on the appraisal wells if they present potential commercial quantities of hydrocarbon.

A well test is a temporary completion of a well to acquire dynamic rate through time, pressure, and fluid property data.

The well test often indicates how the well will perform when it is subjected to various flow conditions. An analysis is usually performed on the data to determine reservoir parameters and characteristics including pressure, volume, and temperature.

Current testing practices are carried out using modern testing equipment and high resolution pressure data acquisition system, getting the reservoir evaluation objectives depends on the behavior of the formation fluid properties, well completion, and flow assurance situations are only known when testing is carried out.

The well test objectives are to:

1. Determine key technical factors of the reservoir (eg size, permeability and fluid characteristics) and values for use in future drilling.
2. Obtain representative data including reservoir pressure, production rates and sample(s).

While testing, hydrocarbons are sent to a flare boom with a burner to ensure as complete destruction of fluids (including hydrocarbons) as possible. Flaring may be initiated using LNG or similar fuel to ignite the mixture. To ensure that burning can be done downwind of the drillship, more than one flare boom can be used, or the ships positioning may be adjusted. Water misters may be used to mitigate heat exposure on the rig.

The flow periods and rates will be limited to the minimum necessary to obtain the required reservoir information during the well test. It is anticipated that a maximum well test time for this project will be approximately 20 days.

Downhole sampling, if required, normally consists of recovering reservoir fluids via wireline or through specific tools added directly to the temporary test string. Wireline testing involves running instruments into the borehole on a cable to measure formation pressures and obtain fluid samples. Formation fluids are brought to the surface where the composition can then be analysed.

The following key well testing preventative measures will be implemented during the well testing program:

- Monitor flare performance to maximise efficiency of flaring operation;
- Ensure sufficient compressed air provided to oil burner for efficient flaring;
- Flare equipment appropriately inspected, certified and function tested prior to operations;
- Flare equipment appropriately maintained and monitored throughout well testing operations;

- The equipment is designed and built to appropriate codes and standards and certified;
- The appropriate emergency stop mechanisms are in place to halt testing in case of emergency.

Well Control and Blowout Prevention

Health, safety and environmental protection are prioritised throughout the drilling process. In particular, there is a specific focus and attention during preparation and operations to avoid any potential accidental events, with related hydrocarbon release or uncontrolled flow from downhole to seabed or at surface (rig floor). In fact well control during well operations is a routine function, with each well designed and executed to minimise risk of developing a well control incident.

Down-hole conditions, such as shallow gas and high-pressure zones can cause control problems as a sudden variations in well pressure. A well kick can occur if there is an influx of formation fluids with sufficient pressure to displace the well fluids.

The primary well control against a well kick is provided by the maintenance of a sufficient hydrostatic head of weighted drilling mud/completion brine in the well bore to balance the pressures exerted by fluids in the formation being drilled.

Secondary well control is provided by the installation of mechanical device, such as the float collar in the drilling string and the blowout preventer (BOP) at seabed, installed on top of the wellhead after the running and setting of the surface casing. The BOP effectively closes and seals the annulus if there is a sudden influx of formation fluids into the well bore, by the use of a series of hydraulically/electrically actuated rams. In addition, this device allows the formation fluids to be safely vented or pumped at the surface with the well closed, thereby enabling other methods to be applied to restore a sufficient hydrostatic head of mud on the well bore, for example pumping a higher density volume of mud, the so called 'kill mud'. The capacity and pressure rating of equipment, safety device and the BOP rating exceed the predicted reservoir pressures.

The well control philosophy and procedure, constantly updated by the Eni drilling department, includes the identification and assessment of all well blowout risks.

4.5.4

Well Abandonment

Once drilling is completed, the well will be plugged and abandoned. This will involve setting cement plugs inside the wellbore and testing them for integrity. The BOP will be then retrieved at surface.

4.5.5 *Demobilisation*

On completion of drilling, the drillship and support vessels will leave the well location. A final ROV survey will be performed at seabed.

4.5.6 *HSE Risk Management during Operations*

As a component of Eni's HSE (health, security, environment and safety) risk management, a comprehensive HSE Policy is in place that includes mobilisation and demobilisation; drilling and completion operations and procedures. Eni is committed to protecting the health, safety and security of its employees and those of its contractors, to ensure that all activities are conducted in a manner that protects the environment and people who are potentially impacted by its operations.

4.6 *PLANNED EMISSIONS AND DISCHARGES, WASTE MANAGEMENT*

This section presents the main sources of emissions to air, discharges to sea and waste that would result from the planned drilling activities and associated operations.

The principle of Eni for waste management is to follow the following golden rules; in the order of priority: reduce, reuse, recycle, recover, treat, dispose.

All vessels would have equipment, systems and protocols in place for prevention of pollution by oil, sewage and garbage in accordance with MARPOL 73/78.

A project specific Waste Management Plan (covering all wastes generated offshore and onshore) would be developed in accordance with MARPOL requirements, South African regulations and Eni's waste management guidelines.

Waste disposal sites and waste management facilities would be identified, verified and approved prior to commencement of drilling.

4.6.1 *Emissions to Air*

The principal sources of emissions to air from the proposed drilling campaign would be from exhaust emissions from power generation on the vessels. If well testing is conducted on the appraisal well, then emissions would be generated from hydrocarbon flaring for the limited duration of the well test. Estimated emissions to air from flaring during well testing quantified during the EIA process and presented in the EIA report.

Dynamically positioned vessels have relatively high fuel consumption and consequently high levels of corresponding air emissions. Diesel oil or marine gas oil (MGO), if available, would be used as fuel for all vessels resulting primarily in emissions of carbon dioxide (CO₂), sulphur oxides (SO_x), nitrogen oxides (NO_x) and carbon monoxide (CO). Relative to these pollutants, smaller quantities of non-methane volatile organic compounds (VOCs), methane (CH₄) and particulate matter (PM₁₀/PM_{2.5}) will also be released. These emissions are released during the normal operation of a marine vessel and have the potential to result in a short-term localised increase in pollutant concentrations. They also contribute to regional and global atmospheric pollution.

Helicopter emissions levels would depend on actual fuel consumption and hence would vary with flying time, payload, weather, speed etc. Estimated emissions to air from vessels and helicopter fuel use will be quantified during the EIA process and presented in the EIA report.

4.6.2 *Discharges to Sea*

Drill Cuttings and Mud Disposal

During the drilling of the well, drill cuttings are produced as the rock is broken down in small rock particles by the drill bit advancing through the subsurface. The amount of drill cuttings that will be discharged during the drilling of the planned well are described in *Table 4.9*.

As discussed in *Section 4.5.2*, for deep water drilling, sea water with high viscous pills and sweeps are used for drilling the top-hole sections of the well drilled riserless (that is without the marine riser installed) while WBM and/or NADF are used for the subsequent sections (with riser installed on top of wellhead and BOP).

During the riserless drilling stage (top hole section drilling) fluid and cuttings are discharged directly on the seabed in immediate proximity of the well. Following installation of the riser (at the end of top hole section) excess seawater stored in tanks will be discharged.

During WBM and/or NADF drilling, drilling muds are circulated in a closed loop system which recycles the drilling muds and removes the drill cuttings. The returns from downhole (muds and cuttings) are routed to the shakers which will physically separate the drill cuttings from the drilling muds (*Figure 4.5* and *Figure 4.6*).

Prior to overboard discharge, the final processing of the drill cuttings will be the cuttings dryer to reduce the base fluid retained on the cuttings and discharged to sea under the following circumstances and limitations:

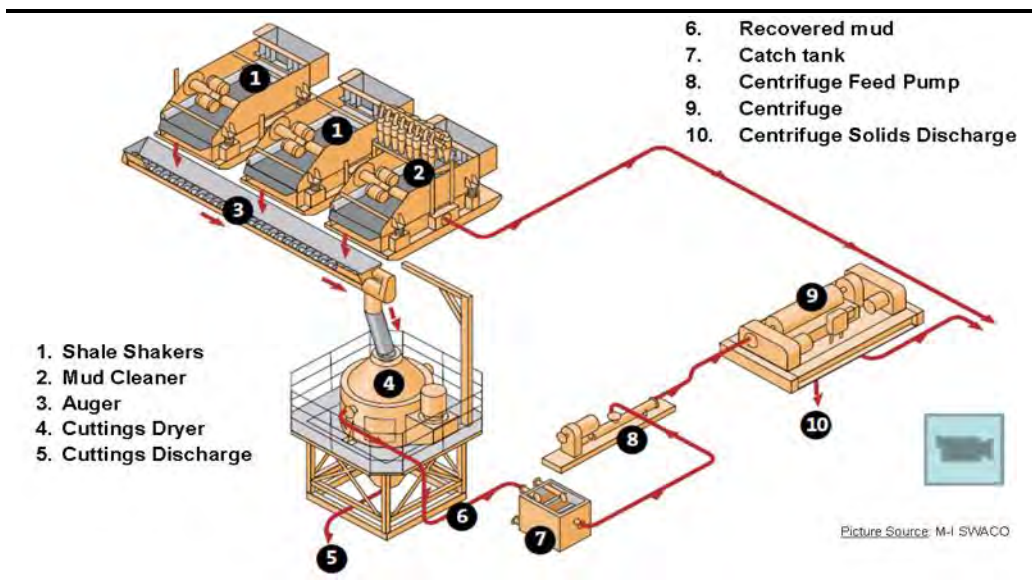
- Drill cuttings drilled with NADF:
 - Facilities located beyond 4.8 km from shore;

- Organic Phase Drilling Fluid concentration: maximum residual non aqueous phase drilling fluid (NAF) 5% (C16-C18 internal olefins) or 9.4% (C12-C14 ester or C8 esters) on wet cuttings;
 - Hg: max 1 mg/kg dry weight in stock barite;
 - Cd: max 3 mg/kg dry weight in stock barite; and
 - Ship-to-shore otherwise.
- Drill cuttings drilled with WBM:
 - Facilities located beyond 4.8 km from shore;
 - Hg: max 1 mg/kg dry weight in stock barite;
 - Cd: max 3 mg/kg dry weight in stock barite;
 - Maximum chloride contraction must be less the four time the ambient concentration of fresh or brackish receiving water; and
 - Ship-to-shore otherwise.

For this project Eni will adopt a vertical cuttings dry system that will limit the maximum residual non aqueous phase drilling fluid (NADF) below 5 percent on wet cuttings.

At the end of operation, the residual NADF in the loop and in tanks will be delivered to shore for recycling or waste in dedicated waste management facilities. WBM will be discharged overboard if in compliance with specific standards ⁽¹⁾, otherwise this will be disposed of offshore.

Figure 4.5 *Typical Solids Control/Fluid Recovery System*



Source: MI-Swaco, 2016

(1) 96 hr LC-50 of suspended Particulate Phase (SPP) - 3 % vol. toxicity test first for drilling fluids or alternatively testing based on standard toxicity assessment species.

Figure 4.6 Example Shale Shakers

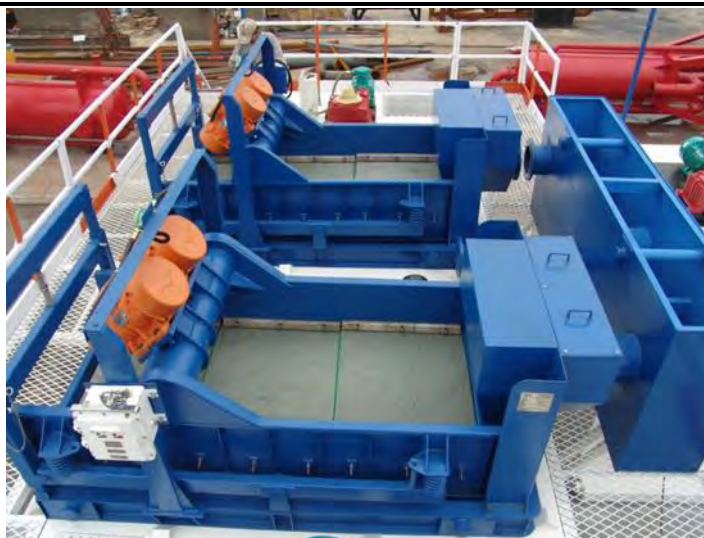


Table 4.9 Cuttings Discharge Quantities per Well

Waste Type	Est. Discharge (m ³)	Comments
High viscous pills and sweeps discharged at the sea floor while drilling the riserless hole intervals	900	Drill 42" and 24" hole intervals with sea water and 100 bbls viscous gel sweeps every 30 m. 2 sweeps at TD
Surplus whole WBM left at the end of well operations	100	Discharge to sea
WBM slops generated during operations such as tank cleaning or operating	150	Tank cleaning prior to displacement to NADF
WBM sludges generated during operations such as tank cleaning or cementing	100	Tank cleaning

Cement

During the initial cementing operation (top hole section), the required cement volume will be pumped into the annular space between the casing and the borehole wall. An excess of cement, necessary to guarantee sufficient presence of cement through the overall annulus, will emerge out of the top of the well. Doing this, the conductor pipe and surface casing are cemented all the way to the seafloor.

After the riser has been installed, for the next phases cement jobs, the excess of cement could be returned via the riser to the drilling vessel and treated using the solids control system. Unused cement slurry that has already been mixed is discharged overboard to avoid plugging the lines and tanks.

Bilge Water

All deck drainage from work spaces (bilge water) will be collected and piped into a sump tank on board the project vessels to ensure MARPOL 1973/78 Annex I compliance. The fluid will be monitored and any oily water would be processed through a suitable separation and treatment system prior to discharge overboard at a maximum of 15 ppm oil in water.

Sewage

Sewage discharge from the project vessels would meet the requirements of MARPOL 73/78 Annex IV. MARPOL 73/78 Annex IV requires that sewage discharged from vessels be disinfected, comminuted and that the effluent must not produce visible floating solids in, nor cause discoloration of the surrounding water. The treatment system must provide primary settling, chlorination and dechlorination. The treated effluent is then discharged into the sea.

Galley Wastes

The disposal into the sea of galley waste is permitted, in terms of MARPOL 73/78 Annex V, when the vessel is located more than 3 nautical miles (approximately 5.5 km) from land and the food waste has been ground or comminuted to particle sizes smaller than 25 mm.

Detergents

Detergents used for washing exposed marine deck spaces would be managed as bilge water. The toxicity of detergents varies greatly depending on their composition. Water-based or biodegradable detergents are preferred for use due to their low toxicity.

In certain cases of specific area cleaning, eg marine deck with no contamination of pollutants, using no toxic detergent, direct overboard discharge may be considered.

4.6.3

Land Disposal

A number of other types of wastes generated during the drilling activities would not be discharged at sea but would be transported to shore for disposal. These wastes would be recycled or re-used if possible or disposed at an appropriate licensed municipal landfill facility or at an alternative approved site.

Typical waste types generated by a drillship that are disposed of onshore include:

- Garbage (eg paper, plastic, wood and glass) including wastes from accommodation and workshops etc;
- Scrap metal and other material;

- Drums and containers containing residues (eg lubricating oil) that may have environmental effects;
- Used oil, including lubricating and gear oil; solvents; hydro-carbon based detergents, possible drilling fluids and machine oil;
- Chemicals and hazardous wastes (eg radioactive materials, neon tubes and batteries);
- Medical waste from treatment of personal onboard the vessel;
- Filters and filter media from machinery;
- Drilling fluid, including WBM, NADF, brine from drilling and completion activities.

At the end of operations, the overboard discharge of hazardous chemicals, cement bulks or any other chemical is not permitted by Eni. The preferred solution for unused chemicals is to return them to the supplier for reuse in other projects. Should this not be possible these could be stored in a dedicated warehouse for future use by Eni or managed as per the above mentioned golden rules.

4.6.4 *Noise Emissions*

The main sources of noise from the proposed drilling programme include noise produced by the drillship and supply vessels. The noise characteristics and level of various vessels used in the drilling programme will vary between 130 and 182 dB re 1µPa at 1 m (Simmonds *et al*, 2003; Richardson *et al*, 1995). The particular activity being conducted by the vessels changes the noise characteristics, for example, if it is at idle, holding position using bow thrusters, or accelerating.

4.7 *UNPLANNED EMISSIONS AND DISCHARGES*

This section presents the main sources of emissions that would result from the unplanned/ accidental events during the drilling activities and associated operations.

4.7.1 *Hydrocarbons and Chemical Spills*

Two of the main types of accidental events that could occur while drilling wells that could result in a discharge of hydrocarbons or chemicals to the marine environment are loss of well containment and single-event/batch spills.

Loss of well containment is a continuous release which could last for a measurable period of time, while a single-event spill is an instantaneous or limited duration occurrence. Eni is committed to minimising the release of hydrocarbons and hazardous chemical discharge into the marine environment and avoiding unplanned spills.

In case of accidental events, Eni minimises any adverse effects to the environment and plans to accomplish this goal by:

- i) incorporating oil and chemical spill prevention into the drilling plans;
- ii) Ensuring that the necessary contingency planning has taken place to respond effectively in the event of an incident.

Eni will develop and implement an Oil and Chemical Spill Response Plan in the event of an accidental release of oil offshore.

In addition, precautions are taken to ensure that all chemicals and petroleum products stored and transferred onshore and offshore are done so in a manner to minimise the potential for a spill and environmental damage in the event of an accidental release.

4.8

PROJECT ALTERNATIVES

One of the objectives of an EIA is to investigate alternatives to the project. In relation to a proposed activity “**alternatives**” means different ways of meeting the general purposes and requirements of the proposed activity.

Appendix 2 Section 2 (h)(i) of the EIA Regulations, 2014 (as amended), requires that all S&EIR processes must identify and describe alternatives to the proposed activity that are feasible and reasonable. Different types or categories of alternatives can be identified, eg location alternatives, type of activity, design or layout alternatives, technology alternatives and operational alternatives. The ‘No Go’ or ‘No Project’ alternative must also be considered.

Not all categories of alternatives are applicable to all projects. The consideration of alternatives is inherent in the detailed design and the identification of mitigation measures, and therefore, although not specifically assessed, alternatives have been and will continue to be taken into account in the design and EIA processes.

Despite many advances in seismic data acquisition and analysis, currently no alternatives exist to definitively establish the presence of hydrocarbon reserves other than through exploration and appraisal drilling.

No activity alternatives have therefore been assessed. It should however be noted that some pre-drilling activities may be undertaken, including an ROV survey.

A summary is provided below of the alternatives considered for this EIA.

4.8.1 *Site Locality Alternative*

Drilling Location

Eni is the operator and holds an Exploration Right for ER236. Both 2D and 3D seismic surveys have been undertaken over ER236 and possible areas of interest identified. Based on the interpretation of the seismic information, Eni have identified two areas of interest covering a limited area of ER236, in which they are considering undertaking exploration drilling activities in order to determine the presence and viability of the reserve. The northern area of interest (1,840 km²) is located approximately offshore of Richards Bay, and the southern area (2905 km²) approximately offshore of Port Shepstone. Although the well locations are still to be finalised based on a number of factors, including further analysis of the seismic data, the geological target and seafloor obstacles, this EIA considers that the wells could be drilled within the area of interest.

Onshore Logistics Base

An onshore logistics base will either be located in the Port of Richards Bay or the Port of Durban, the decision between these locations will be dependent on discussions with Transnet and the availability of sufficient space to accommodate the logistics base.

The EIA will assess the impacts from a logistics base in either Richards Bay or Durban.

4.8.2 *Technology Alternative*

Drilling Vessel Alternatives

There is a range of drilling vessels available to conduct the drilling of an offshore well. For deep water areas these are restricted to two options, drillships or semi-submersible rigs. *Figure 4.7* shows the options available and the associated operation depths.

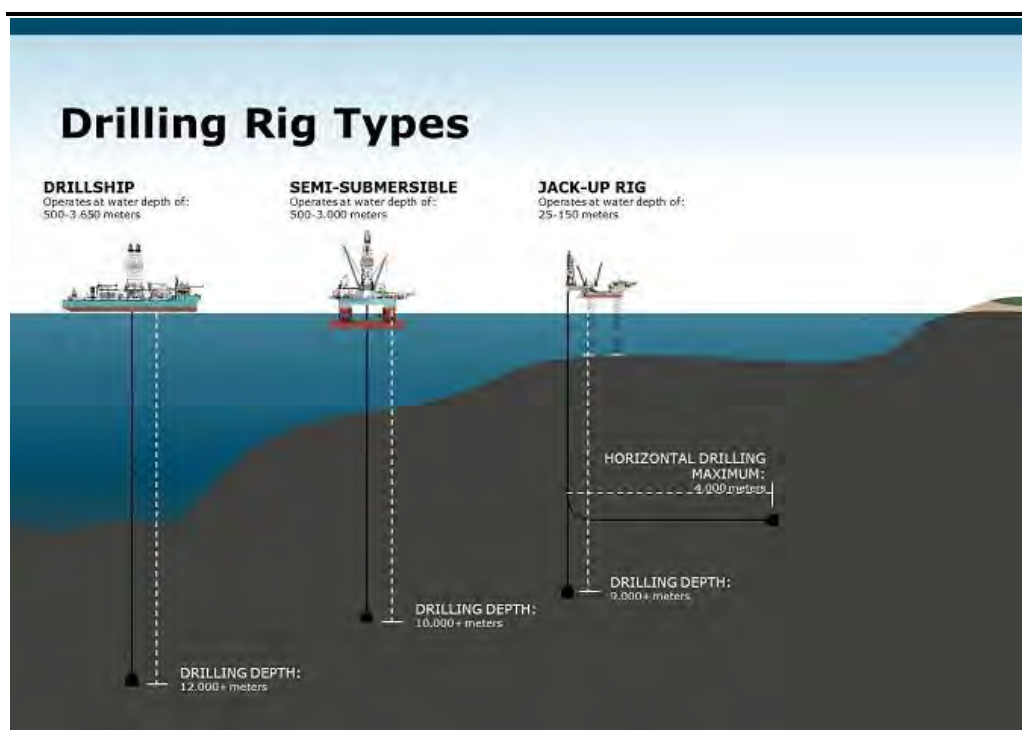
As discussed in *Section 4.4.1*, a drillship is commonly kept in position using a DPS which allows for minimal subsea disturbance due to its ability to operate without moorings. A significant benefit to using a drillship is the ease of mobility as it is a self-propelled vessel with the flexibility to move from well to well or location to location without the need of transport vessels. This option does however require greater energy use (and therefore emissions) and the DPS produces greater underwater sound during operation.

A semi-submersible drill rig has to be towed to a site and is either moored to the seabed using a series of anchors which may extend up to 1 km from the rig or may use dynamic positioning to stay in position. These rigs have a partially submerged structure below the water line. Water is used as a ballast control to maintain flotation and stability.

This option will cause greater disturbance to the seabed due to the presence of the moorings, but requires less energy use and produces less underwater sound.

Both drilling units are self-contained units with derrick and drilling equipment, an internal access to the water surface called moonpool, a helicopter pad, fire and rescue equipment and crew quarters. The operations and discharges are similar. Each drilling unit would also require between one to three supply vessels, it is likely that a semi-submersible drill rig would require more support vessels (or more trips by the support vessel to the base) than a drillship, as a drillship has more onboard storage capacity. A drillship is also significantly more mobile than a semisubmersible.

Figure 4.7 *Drilling Vessel Alternatives*



Source: <http://www.maerskdrilling.com/en/about-us/the-drilling-industry>

Eni's preferred drilling vessel is a drillship due to its availability, flexibility and ease of mobility.

Drilling Fluids

Various factors govern the best combination of drilling chemicals used to produce the required drilling mud needed to lubricate the drill bit, maintain well pressure control, and carry cuttings to the surface.

According to the IOGP classifications, the three types of NADF that could be used for offshore drilling can be defined as follows:

- Group I NADF (high aromatic content) - These base fluids were used during initial days of oil and gas exploration and include diesel and conventional mineral oil based fluids. They are refined from crude oil and are a non-specific collection of hydrocarbon compounds including paraffins, olefins and aromatic and polycyclic aromatic hydrocarbons (PAHs). Group 1 NADFs are defined by having PAH levels greater than 0.35%.
- Group II NADF (medium aromatic content) - These fluids are sometimes referred to as Low Toxicity Mineral Oil Based Fluids (LTMBF) and were developed to address the rising concern over the potential toxicity of diesel-based fluids. They are also developed from refining crude oil but the distillation process is controlled such that the total aromatic hydrocarbon concentration is less than Group I NADFs (0.5 – 5%) and the PAH content is less than 0.35% but greater than 0.001%.
- Group III NADF (low to negligible aromatic content) - These fluids are characterised by PAH contents less than 0.001% and total aromatic contents less than 0.5%. They include synthetic based fluids (SBF) which are produced by chemical reactions of relatively pure compounds and can include synthetic hydrocarbons (olefins, paraffins and esters). Using special refining and/or separation processes, base fluids of Group III can also be derived from highly processed mineral oils (paraffins, enhanced mineral oil based fluid (EMBF)). PAH content is less than 0.001%.

A combination of WBDFs and NADFs will be used to drill the proposed exploration well. It is anticipated that an IOGP Group III non aqueous base fluid (NABF) with low to negligible aromatic content will be used for this project. Refer to *Section 4.5.2* for further information.

Drill Cuttings Disposal Method

The solids control system applies different methods to remove solids (drill cuttings - particles of stone, clay, shale and sand) from the drilling fluid and to recover drilling fluid so that it can be reused. During riserless drilling, using sea water and high viscous sweeps and pills, cuttings are disposed of directly at the seabed. Once the riser has been installed on top of the wellhead and cuttings can be returned to the rig, there is no standard practice for the treatment and disposal of drill cuttings that is applied worldwide.

As per OGP (2003) there are three alternatives for the discharge of drill cuttings, namely:

- Offshore treatment and discharge to sea - where cuttings are discharged overboard from the drilling vessel or platform after undergoing treatment by solids control equipment and fluid contaminant reduction system;

- Re-injection - where drill cuttings are ground to fine particle sizes and disposed of, along with entrained drilling fluids, by injection into permeable subterranean formations; and
- Onshore disposal and treatment - where cuttings and the associated drilling fluids are collected and transported for treatment (eg thermal desorption, land farming) if necessary and final disposal by techniques such as land filling, land spreading, injection, or re-use.’

Re-injection is not an option in this location and is generally not possible during exploration drilling and as such the two potentially disposal options discussed below are discharge to sea and onshore disposal. See *Table 4.10* which documents the advantages and disadvantages of each option.

Offshore Treatment and Discharge to Sea

This option involves discharging the drilling cuttings, after specific treatment, to the marine environment.

Drill cuttings would be treated to remove drilling fluid for reuse and reduce oil content to less than 5 percent of wet cuttings weight (as low as possible) using a suitable combination of shakers, a centrifuge and/or a cuttings dryer. Other possible additional systems could include a washing system and a thermo-mechanical treatment unit.

The cuttings containing residual fluid are then mixed with sea water and discharged to the sea through a pipe known as a chute (or caisson). The end of the chute is typically located approximately 15 m below the water surface. Unlike the other disposal options, no temporary storage for cuttings is required.

In South Africa, offshore discharge is the accepted method of disposal, if cuttings have been treated and contamination concentrations are below the maximum allowable thresholds.

The expected dispersion (fall and spatial extent of the deposition) of discharged cuttings will be predicted in the “drilling discharge modelling - drill cuttings dispersion model” study during the next phase of the EIA.

Offshore pre-treatment and Onshore Disposal

As per OGP (2003), this option would involve the processing of cuttings onboard the drilling vessel, followed by storage and transportation to shore for disposal.

Consequently, there are some aspects of onshore disposal that must be considered when evaluating the viability of this option, advantages and disadvantages of:

- Marine transport (skip and ship, which is common to all potential onshore disposal options);
- Onshore disposal facility option;
- Additional movements of skips on board of vessel with increased risk for workers during lifting operations; and
- Limited availability on deck space on board for equipment and reduced chemicals and fluids storage capacity; more difficult to allocate materials to guarantee stability of boat.

The potential onshore disposal options include:

- Landfill disposal: Depending on the level of treatment and residual oil content in percentage of dry cuttings, the cuttings would more than likely need to be disposed of at a hazardous landfill site.
- Land-farming: This involves spreading fully treated cuttings followed by mechanical tilling with the addition of nutrients, water and or oxygen as necessary to stimulate biodegradation by naturally occurring oil-degrading bacteria, material is applied several times at the same location. Depending upon the location of the land-farm, a liner, over liner, and/or sprinkler system may be required.
- Re-use (eg road construction). Treated cuttings may be used for construction or other alternative uses. If necessary or optimal, cuttings could be further treated prior to re-use, eg with thermal-mechanical treatment or bio-remediation.

Table 4.10 Advantages (+) and Disadvantages (-) of Offshore Discharge and Onshore Disposal of Drill Cuttings (adapted from OGP, 2003)

Economics	Operational	Environmental
Offshore Discharge		
<ul style="list-style-type: none"> + Very low cost per unit volume treatment + No potential liabilities at onshore facilities - Potential future offshore liability - Cost for modelling and analysis (eg, compliance testing, dispersion model) - field analysis of cuttings prior of discharge and potential impacts (eg, compliance testing,, field monitoring programmes) 	<ul style="list-style-type: none"> + Simple process with limited equipment needed + No transportation to onshore involved (less movement of skips and supply vessel, less costs) + Limited number of skips on board, easier logistics and deck management+ Low power and fuel requirements + Low personnel requirements + Low safety, environment and health risks (e.g. filling and transport of skips, stability of rig, possible incident and contamination on deck) + Limited or no shore-based infrastructure required - Necessity of cuttings bulk to increase cutting storage capacity prior of treatment process - Drilling speed affected by treatment and discharge processes' speed + Very limited or No weather restrictions - Pre-treatment equipment required - Risk of plugging lines when using drier and washing system - Management requirements of fluid constituents - Continuous analysis of residual cuttings prior to discharge 	<ul style="list-style-type: none"> + No incremental air emissions + Low energy usage + No environmental issues at onshore sites - Potential for short-term localised impacts on seafloor (benthic community) and water column biology due to chemicals and sediments in the water column and settling on the seafloor

Onshore Disposal		
<p>Marine transport:</p> <ul style="list-style-type: none"> + Waste can be removed from drilling location eliminating future liability at the rig site - Transportation cost can be high for additional navigation of supply vessel and it could vary with distance of shorebase from the drilling location - Transportation may require chartering of additional supply vessels - Additional costs associated with offshore transport equipment (vacuums, augers) cuttings skips or bulk containers) and personnel - Operational shut-down due to inability to handle generated cuttings would make operations more costly 	<p>Marine transport:</p> <ul style="list-style-type: none"> - Safety hazards associated with loading and unloading of waste containers on workboats and at the shorebase - Increased handling of waste is necessary at the drilling location and at shorebase - Additional personnel required - Risk of exposure of personnel to aromatic hydrocarbons - Efficient collection and transportation of waste are necessary at the drilling location - May be difficult to handle logistics of cuttings generated with drilling of high rate of penetration large diameter holes - Weather or logistical issues may preclude loading and transport of cuttings, resulting in a shut down of drilling or need to discharge - Rig stability may be effected in case of bad weather, necessity to additional move equipment and skips on board to guarantee balance 	<p>Marine transport:</p> <ul style="list-style-type: none"> + No impacts on benthic community + Avoids seabed and water column possible impacts to environment and biotic sensitivities - Fuel consumption and consequent air emissions associated with transfer of wastes to a shore base - Increased risk of spills in transfer (transport to shore and offloading) - Disposal onshore creates new problems (eg, potential groundwater contamination) - Potential interference with shipping and fishing from increased vessel traffic and increased traffic at the port
<p>Onshore operations:</p> <ul style="list-style-type: none"> + On land transportation costs - Potential future liabilities 	<p>Onshore operations:</p> <ul style="list-style-type: none"> - Onshore transport to site - Safety risk to personnel and local inhabitants in transport and handling - Disposal facilities require long-term monitoring and management - Additional footprint in logistic base for temporary storage of skips 	<p>Onshore operations:</p> <ul style="list-style-type: none"> + Reduces impacts to seafloor and biota - Potential for onshore spills - Air emissions associated with transport and equipment operation -

<p>Land-farming: + Inexpensive relative to other onshore options - Requires long-term land lease - Possible necessity of compensative/restoration activities for land use authorisation</p>	<p>Land-farming: - Limited use due to lack of availability of and access to suitable land - Requires suitable climatic conditions - Cannot be used for wastes with high salt content without prior treatment - Necessity to develop specific treatment facilities</p>	<p>Land-farming: + If managed correctly minimal potential for groundwater impact + Biodegradation of hydrocarbons - Air emissions from equipment use and off-gassing from degradation process - Runoff in areas of high rain may cause surface water contamination - May involve substantial monitoring requirements - Limited availability/experience for cuttings management in South Africa</p>
<p>Landfill: -Additional pressure on existing landfills - Possible necessity of compensative/restoration activities for land use authorisation</p>	<p>Landfill: -Requires appropriate management and monitoring may have requirements on maximum oil content of wastes - Necessity to develop specific treatment facilities - Land requirements - May be limited by local regulations</p>	<p>Landfill: - Potential groundwater and surface water impacts - Air emissions associated with earthmoving equipment - May be restrictions on oil content of wastes - Limited availability/experience for cuttings management in South Africa</p>

Although the onshore disposal option has the benefit that it does not leave an accumulation of cuttings on the seafloor, it has several disadvantages (eg additional pressure on existing landfill sites and potential impacts on vegetation and groundwater) and involves a substantial amount of additional equipment, transportation, and facilities.

The additional transportation requirements to transfer the cuttings to shore increases environmental and safety risks associated with shipping and handling of materials.

Considering the aspects previously discussed, the dynamic nature of the marine environment in the area of interest and in order to limit the footprint for onshore landfarming and waste facilities in the area, considering the lack of dedicated facilities for onshore cuttings treatment, according to South African legislation, international best practise and Eni technical guidelines, Eni's preferred option is to off-shore treat and discharge cuttings in accordance with the previously defined limitations.

4.8.3 *Design or Layout Alternatives*

Number of Wells

Eni proposes to drill:

- Up to four wells within the northern area of interest: up to two exploration wells and up to two appraisal wells;
- Up to two wells within the southern area of interest: one exploration well and one appraisal well.

The number of wells to be drilled will be determined by the success of the first wells.

The EIA will assess the drilling of six wells within the areas of interest.

Scheduling

The initial drilling activities are currently proposed in 2019, the time of year has not as yet been confirmed.

4.8.4 *No-Go Option*

The No-Go alternative will be considered in the EIA in accordance with the requirements of the EIA Regulations, 2014 (as amended). The No Go alternative entails no change to the status quo, in other words the proposed exploration drilling activities will not be conducted in ER236.

The option not to proceed with exploration or appraisal drilling would leave the areas of the potential drilling sites in their current environmental state, with the oil/gas potential remaining unknown.

While exploration or appraisal drilling does not automatically lead to the development of oil/gas production, it is an essential stage in the process, which might lead to the drilling of production wells and thereafter significant employment opportunities in this sector, if commercial reserves can be exploited. The 'do nothing' or 'no-go' option forgoes these possible advantages.

5.1 OVERVIEW

The objective of the environmental and social baseline is to establish the characteristics of the existing biophysical and socio-economic conditions in the Project Area. The baseline serves as the reference point against which changes can be predicted and monitored.

This Chapter presents the baseline conditions in the Project Area. The baseline was determined through a review of existing information which includes: previous projects which have occurred in the surrounding blocks, municipal documents and social websites as referenced at the end of this document. Further to this, a Marine and Coastal Ecology Assessment as well as a Fisheries Study were conducted to determine the baseline conditions of the Project Area.

5.2 PROJECT AREA

The Project Area comprises the various biophysical and socio-economic conditions receptors may be affected both directly and indirectly by the project activities described below. The Project Area can be separated into Areas of Direct Influence (ADI) and Areas of Indirect Influence (AII) depending on the source and causes of the impacts and these will vary in extent depending on the type of receptor affected.

The Project Area is offshore of the KwaZulu-Natal (KZN) coast, between St Lucia and Port Shepstone and includes the entire Block ER236. The ADI includes the northern and southern areas of interest (*Section 4.2*), located at their closest points approximately 62 km and 65 km from shore respectively, and the supply vessel and helicopter routes to and from either Richards Bay or Durban. The AII includes the entire block and the parts of the shoreline where an accidental oil spill may beach. The extent of an oil spill will be determined during the oil dispersion modelling study which will be conducted during the EIA phase of the project.

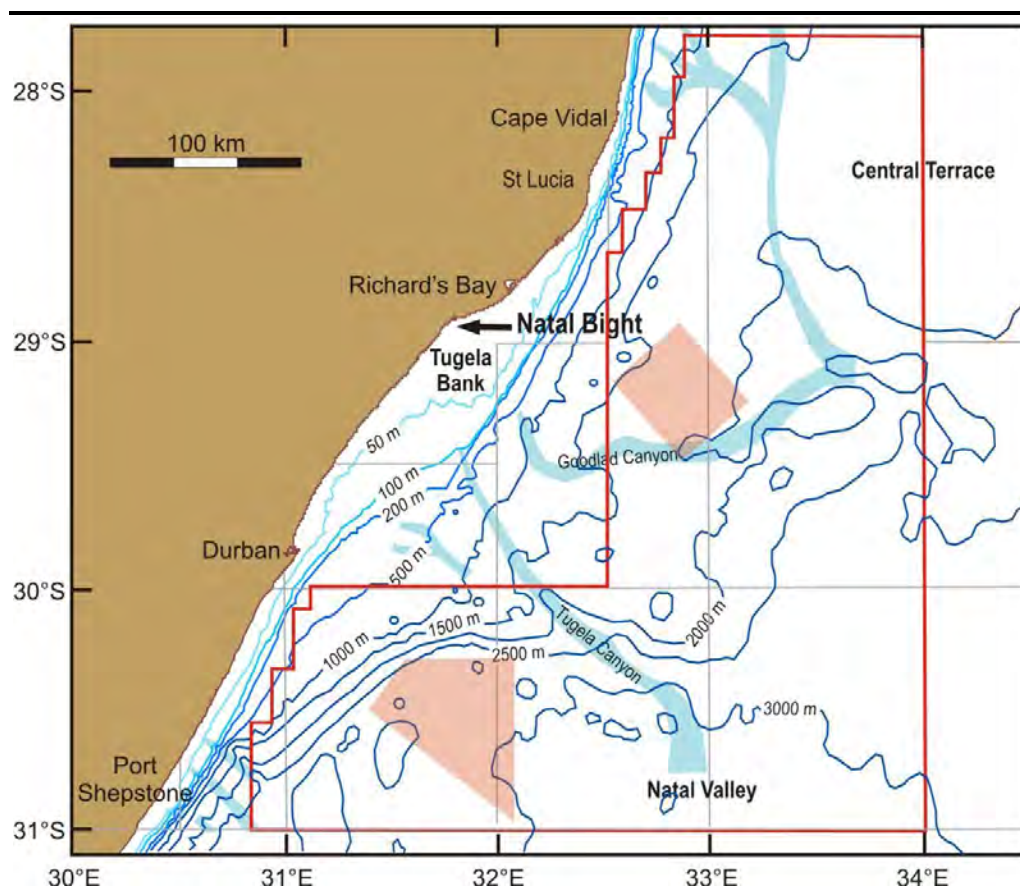
5.3 ENVIRONMENTAL BASELINE

5.3.1 Marine Environment

Bathymetry and Sediments

The orientation of the coastline along the East Coast is relatively uniform, and north-northeast trending. A significant topographical feature is the Natal Bight, a coastal indentation between Cape Vidal and Durban (*Figure 5.1*).

Figure 5.1 Bathymetry of the South African East Coast



Note: Shown on the figure are Block ER236 (red polygon), the areas of interest (orange shading) and features and places mentioned in the text. The positions of submarine canyons and feeder valleys (blue shading) as identified in Lombard *et al.* (2004) are also indicated. It is important to note that no drilling will occur within the Goodlad Canyon.

Source: Pisces, 2017

The majority of the East Coast region has a narrow continental shelf and a steep continental slope. The Tugela Bank, located along the KZN coast between 28° 30' S and 30° 20' S, is a prominent feature on the continental shelf. Here the continental shelf widens to 50 km offshore, the maximum width reached along the East Coast (Lutjeharms *et al.*, 1989) and the continental slope is more gentle (Martin & Flemming, 1988). To the south, the continental margin descends into the Natal Valley, while to the north-eastwards it develops into the Central Terrace (Figure 5.1).

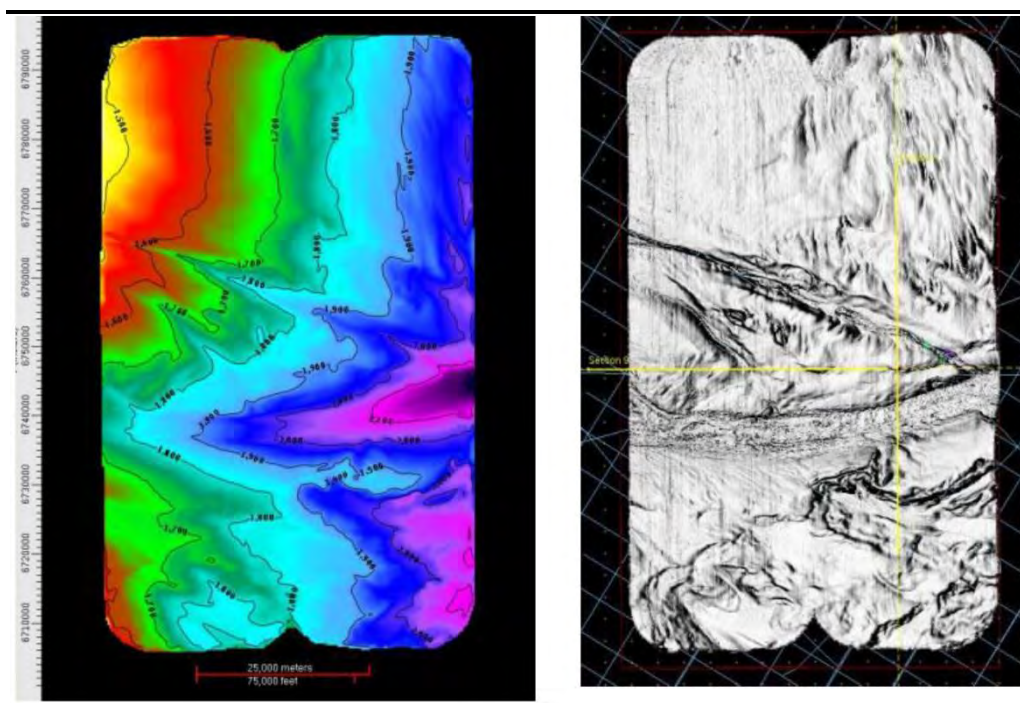
The Tugela Bank is interrupted by two canyons: the large and prominent Tugela Canyon and the smaller Goodlad Canyon (also referred to as 29°25' S). The northern area of interest for well drilling lies east of the Natal Bight in >1,500 m water depth, and its southern point overlaps with a portion of the Goodlad Canyon. No drilling will however occur within the canyon. The southern area of interest lies off Port Shepstone in > 2,600 m water depth, to the south of the Tugela Canyon.

A further canyon is located to the south of the Bank where the continental shelf narrows and the continental margin descends into the Natal Valley.

The Goodlad Canyon emerges from the Tugela Bank at 2,320 m (Goodlad, 1986). There are limited data on the Goodland Canyon features; however, it is reported to start as a small 20 m deep valley (Martin & Flemming, 1988) deepening to 250 m while becoming a 50 km wide, shallow valley at a depth of 1,400 m. The gradient of the canyon walls are less steep than those of the Tugela Canyon and limited tributaries occur (Young, 2009). No information specific to the canyon off Durban could be sourced (Pisces, 2017).

These canyons therefore differ significantly in morphology from those in northern KZN, where coelacanths have been reported. Firstly, the canyon heads lack the amphitheatre-shaped head morphology. Secondly, they are located at far greater depth than the Sodwana canyons and lack connectivity to the shelf, and finally, they show no significant tributary branches (Wiles *et al.*, 2013). Although terraces are present and may provide shelter in the form of caves and overhangs, they occur at depths (>1,500 m) well beyond those at which coelacanths have been recorded to date. Evidence of deep water canyons at depths (>1,500 m) were found during a seismic survey conducted in the northern area of interest. The canyon was found to be in the centre of the area of interest (Figure 5.2). Due to the depth of the canyon coelacanths are unlikely to be present.

Figure 5.2 Evidence of Deep Water Canyon - Block ER236



Source: Eni, 2017

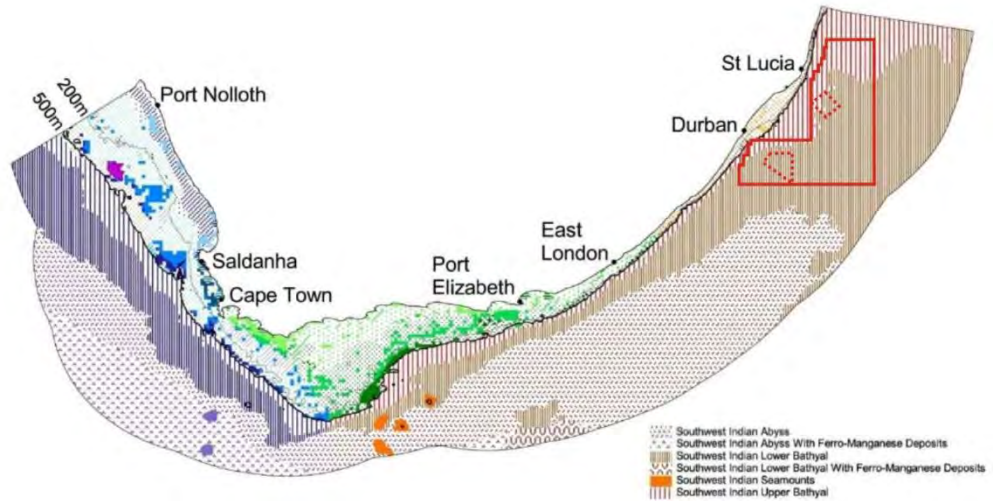
The Tugela Bank is the major sedimentary deposition centre of the KZN continental shelf, being characterised by fluvial deposits of Tugela River and Mgeni River origin. Sediment dispersal in the Bight is controlled by the complex interaction of shelf morphology, the Agulhas Current, wave regime, wind-driven circulation, sediment supply and the presence of the semi-permanent gyre. The seabed is thus sedimentary in nature but varies in the degree to which it is consolidated (CBD, 2013).

North of Durban, the shelf region is dominated by terrigenous sand (0.063 to 2 mm), with patches of gravel (>2 mm) occurring throughout the area. Areas on the mid-shelf contain sediments comprising up to 60 percent terrigenous mud. Two large mud depo-centres are found off the Tugela River mouth, while a smaller one is located off St Lucia. These mud depo-centres are a rare environment along the east coast of South Africa, comprising only about 10 percent of the shelf area (Demetriades & Forbes, 1993). The muds and their associated elevated organic contents provide habitat dominated by benthic and deposit feeders that favour muddy sediments and turbid waters. Despite being primarily a soft-sediment habitat, low profile beachrock outcrops (Fennessy, 1994a, 1994b; Lamberth *et al.*, 2009) occur just offshore of the 50 m contour off Durban and around the 200 m contour off Richard's Bay.

South of Durban, sand dominates both the inshore and offshore surficial sediments, although a substantial gravel component is present on the middle and outer shelf to as far as Port St Johns, occurring as coarse lag deposits in areas of erosion or non-deposition. Traces of mud are present on most areas of the shelf, although significant mud depo-centres are absent. The Agulhas Current and/or waves affect the sediment bedform patterns on the KZN continental shelf. North and south of the Tugela Bank, the Agulhas Current generates active dune fields at the shelf edge (Flemming & Hay, 1988). In contrast, sediments on the shelf area of the Tugela Bank to a depth of 100 m are affected mostly by wave action (CSIR, 1998). South of the Ilovo River the inner shelf comprises sand sheets, while sand ribbons and streamers occur on the mid-shelf comprises, with gravel pavements dominating the outer shelf.

The outer shelf is dominated by gravels of shell-fragment and algal-nodule origin (Heydorn *et al.*, 1978). Outer shelf sediments are influenced solely by the strong Agulhas Current, forming large-scale subaqueous dunes with a southwesterly transport direction. Subaqueous dunes in the inner and mid shelf are prone to current reversals (Uken & Mkize, 2012). The northern area of interest for well drilling comprises Southwest Indian Upper and Lower Bathyal benthic habitats, whereas Southern Indian Lower Bathyal benthic habitat dominates in the southern area of interest (*Figure 5.3*), both of which have been assigned an ecosystem threat status of 'least threatened' in the SANBI 2011 National Biodiversity Assessment (Sink *et al.*, 2011) reflecting the great extent of these habitats within the South African Exclusive Economic Zone (EEZ) (*Figure 5.4*).

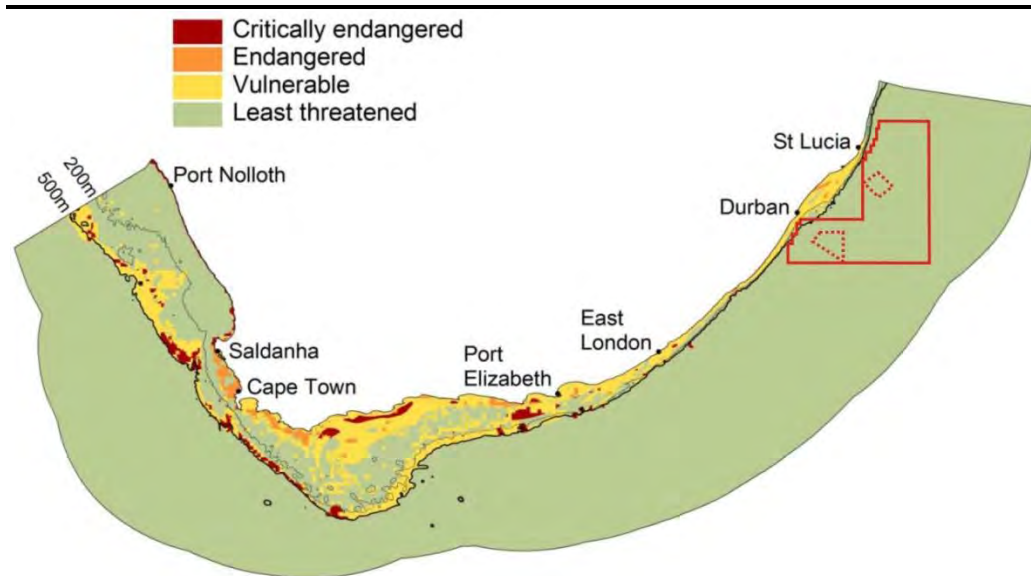
Figure 5.3 Coastal and Benthic Habitat Types off the South African East Coast



Note: Shown on the Figure are Block ER 236 (red polygon) and the areas of interest for well drilling (red dotted line)

Source: Adapted from Sink *et al.* 2012 in Pisces, 2017

Figure 5.4 The Ecological Threat Status of Coastal and Offshore Benthic Habitat Types off the South African East Coast



Note: Shown on the Figure are Block ER 236 (red polygon) and the areas of interest for well drilling (red dotted line)

Source: Adapted from Sink *et al.* 2012 in Pisces, 2017

The oceanography of this coast is almost totally dominated by the warm Agulhas Current that flows southwards along the shelf edge (Schumann, 1998) (Figure 5.5). The main source of the Agulhas Current is from recirculation in a South-West Indian Ocean subgyre.

Further contributions to the Agulhas Current come from the Mozambique Current and the East Madagascar Current in the form of eddies that act as important perturbations to the flow (Lutjeharms, 2006). It flows southwards at a rapid rate following the shelf edge along the East Coast, before retroflecting between 16° and 20° E (Shannon, 1985). It is a well-defined and intense jet some 100 km wide and 2,300 m deep (Schumann, 1998; Bryden *et al.*, 2005). Current speeds of 2.5 m/s or more have been recorded (Pearce *et al.*, 1978).

Where it meets the northern part of the Tugela Bank near Cape St Lucia, the inertia of the Agulhas Current carries it into deep water. This generates instability in the current (Gill & Schumann, 1979) resulting in meanders and eddies (Pearce *et al.*, 1978). Three eddy types have been identified in the Agulhas Current (Gründlingh, 1992):

Table 5.1 Eddy Types Identified in the Agulhas Current

Type	Description
Type I	These are meanders that comprise smaller shear/frontal features to a depth of at least 50 m, which dissipate over a period of days
Type II	These are meanders comprising the large clockwise loops generated within the Natal Bight. These loops are explained below: <ul style="list-style-type: none"> • The extremely transient Natal Pulse occurs when meanders move in a southward flow offshore, enabling sluggish and occasional northward flow to develop close inshore (Schumann, 1988); • The larger Natal Gyre is a clockwise circulation cell that extends from Durban to Richard’s Bay, resulting in northward flow inshore (Pearce, 1977a, 1977b).
Type III	These are meanders, which are the larger meanders that originate north of St Lucia.

Source: Pisces, 2017

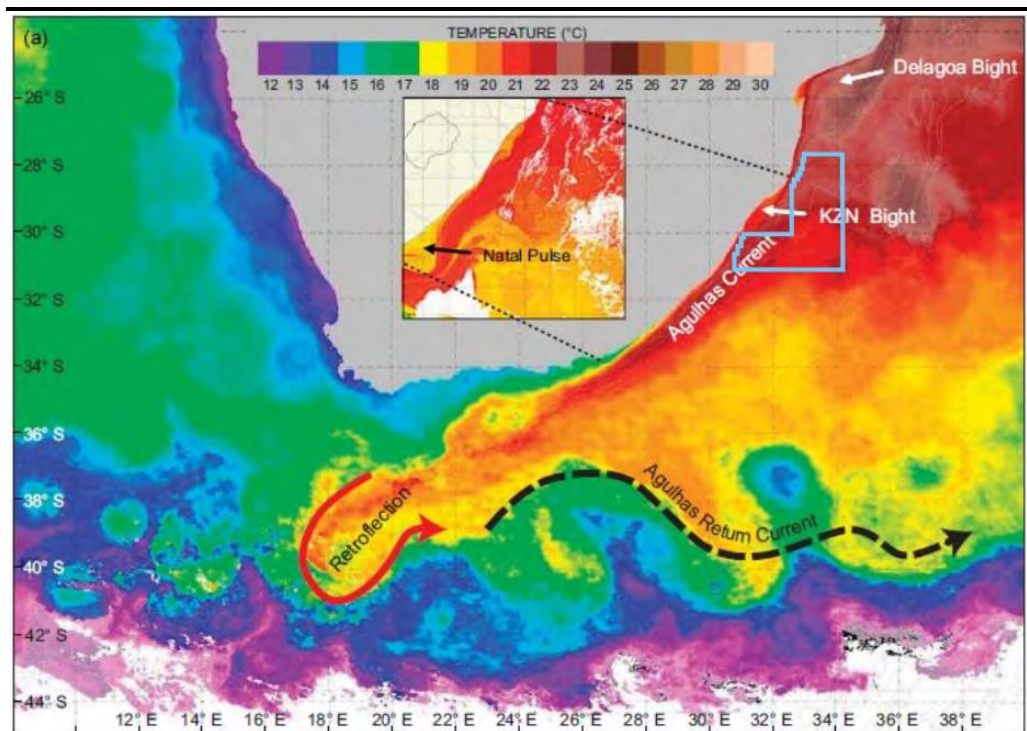
South of Durban, the continental shelf again narrows and the Agulhas Current re-attaches itself as a relatively stable trajectory to the coast, until off Port Edward it is so close inshore that the inshore edge (signified by a temperature front) is rarely discernible (Pearce, 1977a). At Port St Johns, however, there exists a semi-permanent eddy, which results in a northward-flowing coastal current and the movement of cooler water up the continental slope onto the centre of the very narrow shelf (Roberts *et al.*, 2010). Further south, when the Agulhas Current reaches the wider Agulhas Bank, where the continental slopes are weaker, it starts to exhibit meanders, shear edge eddies and plumes of warm surface waters at the shelf edge, before retroflecting eastwards as the Agulhas Return Current to follow the Subtropical Convergence (Lutjeharms, 2006) (Figure 5.5).

In common with other western boundary currents, a northward (equatorward) undercurrent, termed the Agulhas Undercurrent, is found on the continental slope of the East Coast at depths of between 800 m and 3,000 m (Beal & Bryden, 1997).

As the Agulhas Current originates in the equatorial region of the western Indian Ocean its waters are typically blue and clear, with low nutrient levels and a low frequency of chlorophyll fronts. On the Tugela Bank, however, nutrient concentrations are characterised by short-term temporal variations, but are higher than in areas where the continental shelf is narrower (Carter & d'Aubrey, 1988).

This is attributed in part, to the topographically induced upwelling that occurs in the area as a result of the bathymetric arrangement of the Natal Bight (Gill & Schumann 1979; Schumann 1986; Lutjeharms *et al.*, 1989). The cold nutrient-rich upwelled waters are a source of bottom water for the entire Natal Bight (Lutjeharms *et al.*, 2000a, b). However, from all other perspectives, the Bight may be considered a semi-enclosed system (Lutjeharms & Roberts, 1988) as the strong Agulhas Current at the shelf edge forms a barrier to exchanges of water and biota with the open ocean. The location of the area of interest is offshore and to the east of the Tugela Banks, however, suggests that nutrient concentrations will be comparatively low.

Figure 5.5 *The Predominance of the Agulhas Current in Block ER 236*



Note: Shown on the Figure is Block ER236 (pale blue outline)

Source: Adapted from Roberts *et al.* 2010 in Pisces, 2017

The surface waters are a mix of Tropical Surface Water (originating in the South Equatorial Current) and Subtropical Surface Water (originating from the mid-latitude Indian Ocean). Surface waters are warmer than 20°C and have a lower salinity than the Equatorial Indian Ocean, South Indian Ocean and Central water masses found below. Surface water characteristics, however, vary due to insolation and mixing (Schumann, 1998).

Seasonal variation in temperatures is limited to the upper 50 m of the water column (Gründlingh, 1987), increasing offshore towards the core waters of the Agulhas Current where temperatures may exceed 25° C in summer and 21° C in winter (Schumann, 1998). Further offshore of the core waters, and thus across most of the Block ER 236, temperatures decrease.

Winds and Swells

The main wind axis off the KZN coast is parallel to the coastline, with north-north-easterly and south-south-westerly winds predominating for most of the year (Schumann & Martin, 1991) and with average wind speeds around 2.5 m/s (Schumann, 1998) (*Figure 5.6 and Figure 5.7*)

In the sea areas off Durban, the majority of swells are from the South and South-southwest, with the largest attaining in excess of 7 m. During summer and autumn, some swells also arrive from the east (*Figure 5.8*). The less regular weather patterns affecting the East Coast (eg low pressure cells present NE of Durban, cut-off low pressure cells and tropical cyclones) strongly influence the wave climate, resulting in swells in excess of 10 m (Hunter 1988; Schumann 1998). The giant waves (>20 m high) that are at times encountered within the Agulhas Current (Heydorn & Tinley, 1980), arise from the meeting of the south-westerly swells and the southerly flowing Agulhas Current, and may be a navigation hazard at times.

Nutrients

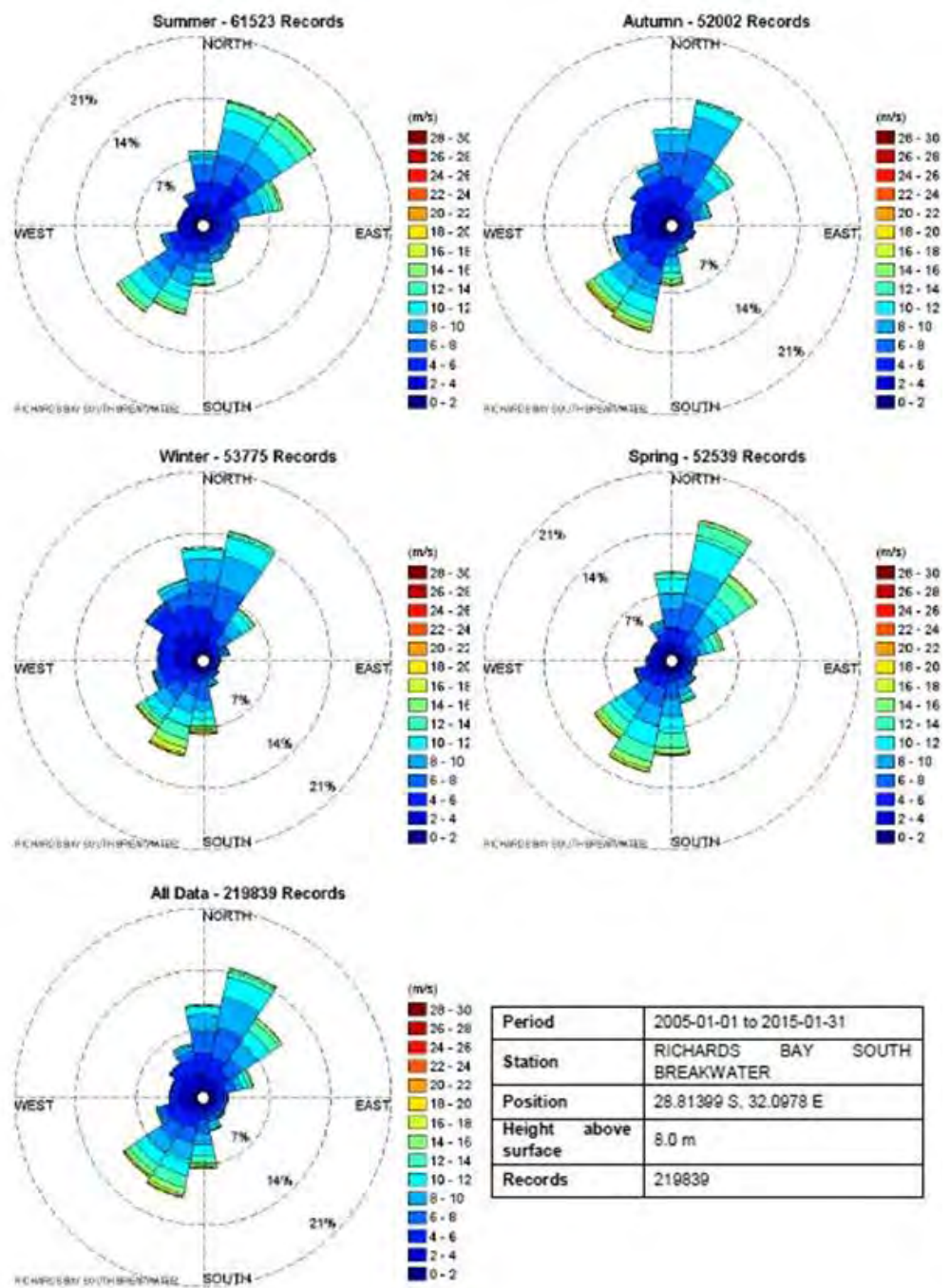
Nutrient inputs on the Tugela Banks are thought to originate from a combination of an upwelling cell off Richards Bay, the Tugela River and a cyclonic lee eddy off Durban. The marine nutrients are derived from a topographically-induced upwelling cell just south of Richards Bay (Gill & Schumann, 1979; Schumann, 1988; Lutjeharms *et al.*, 1989). The cold nutrient-rich upwelled waters are a source of bottom water for the entire Natal Bight (Lutjeharms *et al.*, 2000a, b), but the quantity and regularity of this nutrient supply remains unknown. The cyclonic eddy incorporates enrichment, retention and concentration mechanisms and together with the upwelling and elevated phytoplankton production in the north of the Bight (Lutjeharms *et al.*, 2000b), creates the necessary conditions for enhanced survivorship of early larvae and juveniles of pelagic spawners (Beckley & van Ballegooyen, 1992; Hutchings *et al.*, 2003).

River discharge also has profound effect on physical, chemical and biological processes in coastal waters, and in KZN the effect of catchment-derived nutrient supply onto the Tugela Banks is thought to be pronounced given that nutrient supply from upwelling events is limited (Lamberth *et al.*, 2009). The importance of localised fluvial processes (under normal flow, reduced flow and flood events) in driving marine food webs has recently received much research attention (DWAF, 2004; Lamberth *et al.*, 2009; Turpie & Lamberth, 2010).

Nutrient inputs into the coastal environment through river runoff are predicted to stimulate phytoplankton and zooplankton production and ultimately the larval, juvenile and adult fish that depend on them as a food source. Proposed impoundments on the Tugela River may thus have cascade effects on ecosystem functioning of the Tugela Banks, with far-reaching consequences for the sustainability of local fisheries.

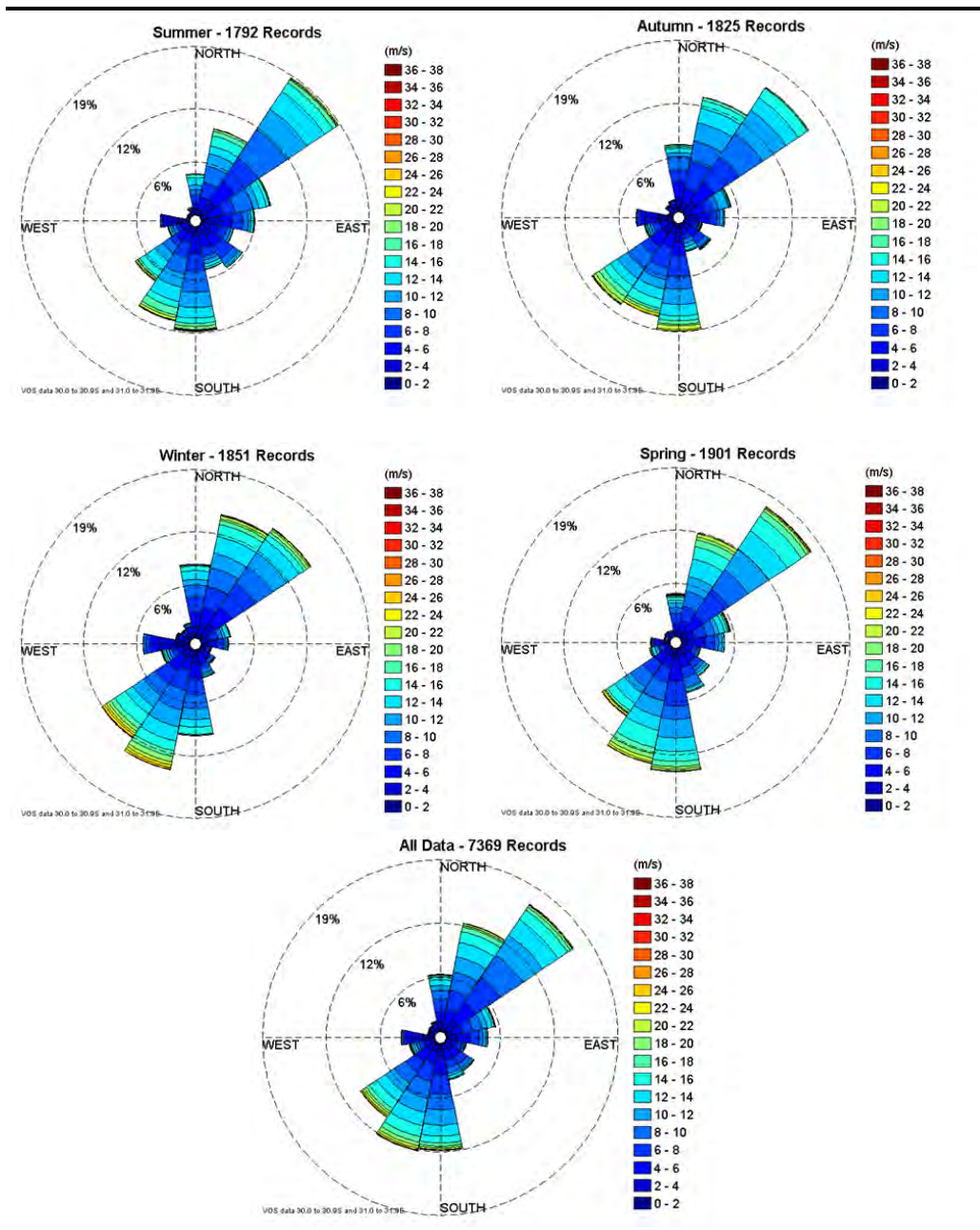
The turbid, nutrient-rich conditions are also important for the life-history phases (breeding, nursery and feeding) of many demersal and pelagic species. The area harbours the only commercial shallow-water prawn trawl fishery in the country and is thus of considerable socio-economic importance to KZN.

Figure 5.6 VOS Wind Speed vs Wind Direction for Richards Bay Breakwater (28.8°S and 32.1° E)



Source: 1960-02-15 to 2012-04-13; 4,515 records in Pisces, 2017

Figure 5.7 VOS Wind Speed vs Wind Direction for Port Shepstone (30.0° to 30.9° S and 31.0° to 31.9° E)



Source: CSIR 1960-02-15 to 2012-04-13; 7,369 records in Pisces, 2017

Figure 5.8

VOS Wave Height (Hmo) vs Wave Direction for a deepwater location offshore of Richards Bay (29.0°S and 32.5° E)

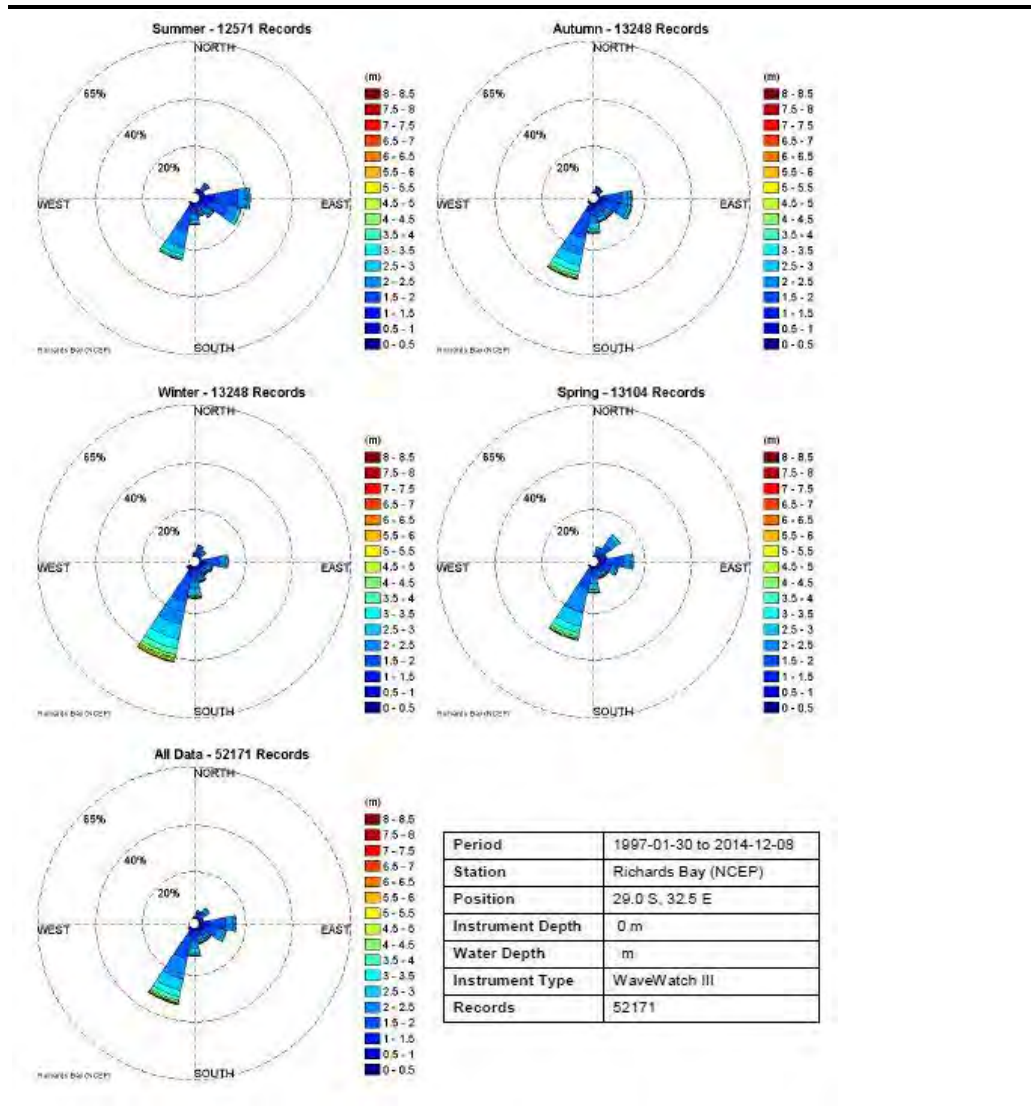
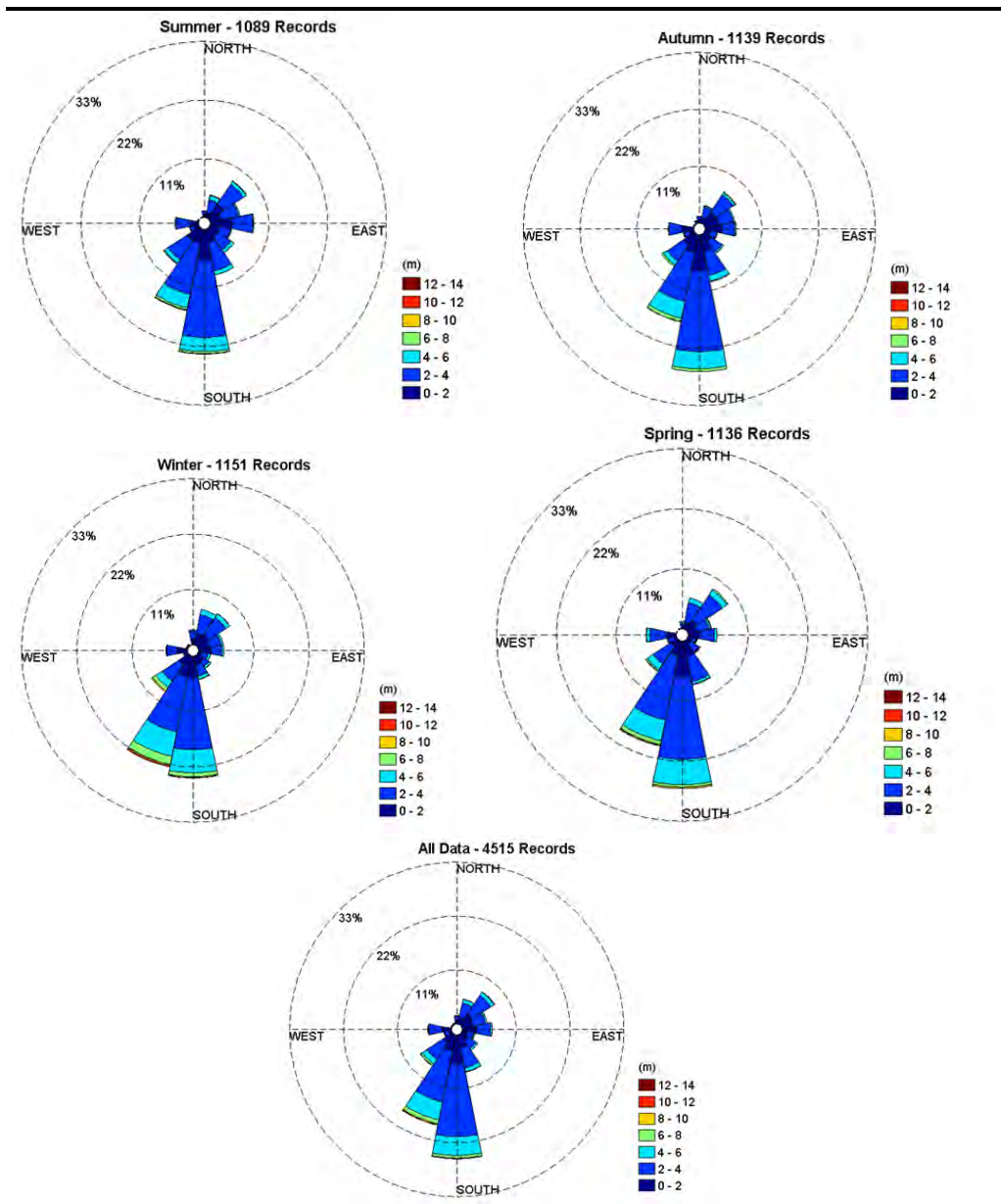


Figure 5.9 VOS Wave Height (Hmo) vs Wave Direction for Port Shepstone (30.0° to 30.9° S and 31.0° to 31.9° E)



Source: CSIR 1960-02-15 to 2012-04-13; 4,515 records in Pisces, 2017

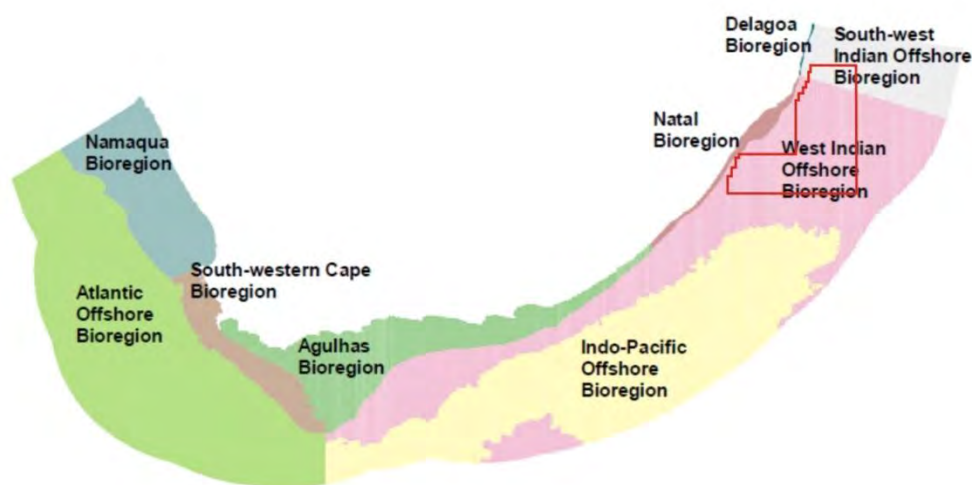
5.3.2 Biological Environment

Biogeographically Block ER 236 and the area of interest falls into the West Indian Offshore bioregion (Figure 5.10) (Lombard *et al.*, 2004). The offshore areas comprise primarily deep water benthic habitats and the water body. Due to limited opportunities for sampling, information on the pelagic and demersal communities of the shelf edge, continental slope and upper and lower bathyal are very poorly known.

Consequently, much of the information on the baseline environment provided below relates to the inshore (shallow waters prior to where the shelf of the Thukela Bank starts dropping off, on average less than 50 m water depth) and continental shelf (water depths less than 200 m¹) regions, which fall within the Natal Bioregion (Figure 5.10).

The benthic communities within these habitats are generally ubiquitous throughout the southern African East Coast region, being particular only to substratum type and/or depth zone. They consist of many hundreds of species, often displaying considerable temporal and spatial variability. The biological communities 'typical' of each of these habitats are described briefly below, focusing both on dominant, commercially important and conspicuous species, as well as potentially threatened or sensitive species, which may be affected by the proposed project.

Figure 5.10 *The South African Inshore and Offshore Bioregions in Relation to Block ER236*



Note: Shown on the Figure is Block ER236 (red polygon)

Source: Adapted from Lombard *et al.* 2004 in Pisces, 2017

Phytoplankton and Ichthyoplankton

The nutrient-poor characteristics of the Agulhas Current water are reflected in comparatively low primary productivity in KZN inshore areas, with chlorophyll a concentrations ranging between 0.03 and 3.88 µg/l (Carter & Schleyer, 1988; see also Coetzee *et al.*, 2010).

Further offshore and in Block ER236, the pelagic environment is characterised by very low productivity, with the low variability in water-column temperature resulting in very low frequency of chlorophyll fronts.

¹ The shelf break occurs at approximately the 200 m isobath with a relatively steep slope towards the sea.

Phytoplankton, zooplankton and ichthyoplankton abundances in Block ER236 are thus expected to be extremely low.

In contrast, on the Tugela Bank, short-term increases in productivity are associated with localised upwelling (Oliff, 1973). Continental shelf waters support greater and more variable concentrations of zooplankton biomass (Figure 5.10) than offshore waters (Beckley & Van Ballegooyen, 1992), with species composition varying seasonally (Carter & Schleyer, 1988). Copepods represent the dominant species group in shelf waters (Carter & Schleyer, 1988), although chaetognaths are also abundant (Schleyer, 1985).

Ichthyoplankton

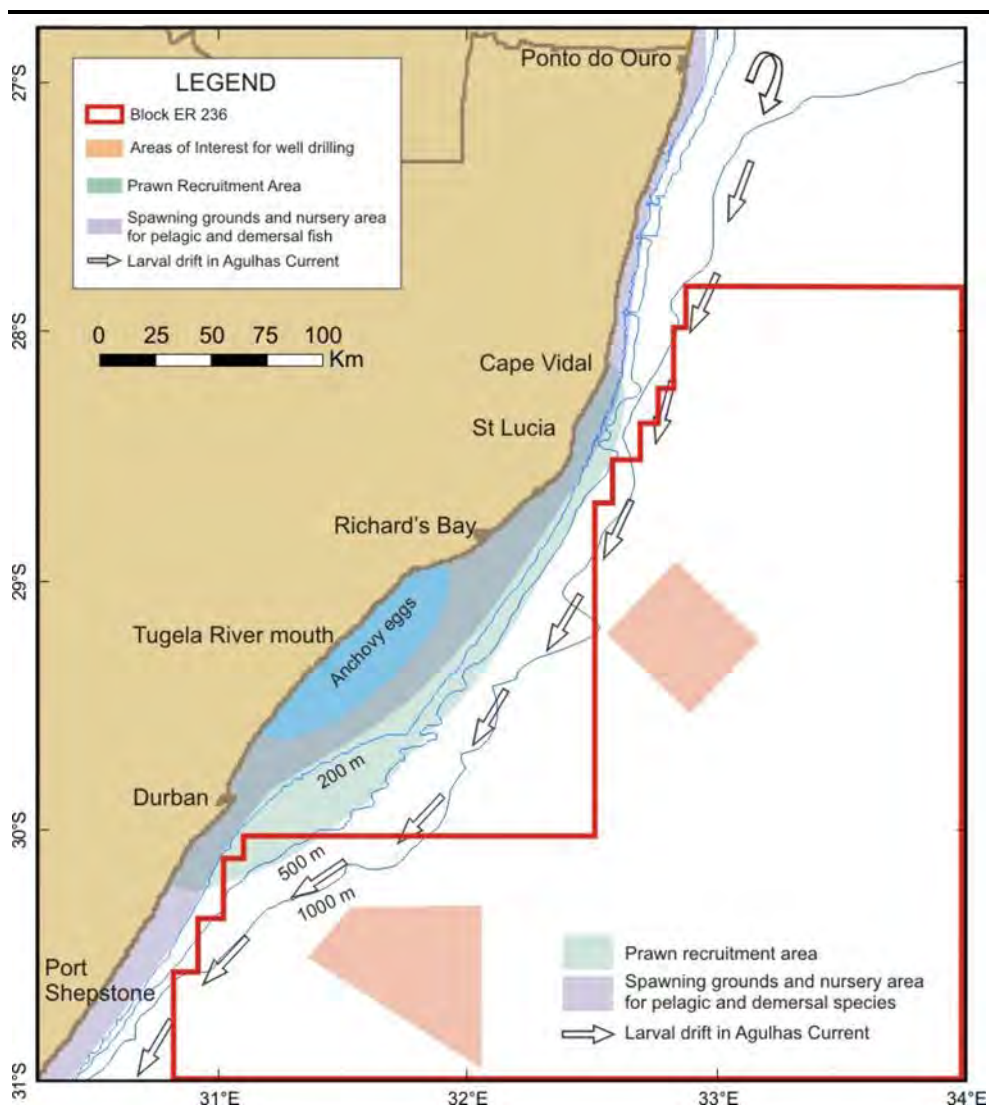
Pilchard (*Sardinops sagax*) eggs occur primarily in waters less than 200 m, outside Block ER236, along the Eastern Cape and the southern KZN coast with the onset of the “sardine run” between May and July (Anders, 1975; Connell, 1996). The sardine and other clupeid eggs persist in inshore waters throughout winter – spring, before disappearing in early summer as the shoals break up and move northwards and further offshore (Connell, 2010). Recent evidence suggests that the inshore areas of the KZN coast may also function as a nursery area for these small pelagic species during the winter months (Connell, 2010; Coetzee *et al.*, 2010) as freshwater flows from the large rivers serve as cues for spawning and the recruitment of juveniles (Lamberth *et al.*, 2009). Anchovy (*Engraulis japonicus*) eggs were reported in the water column during December as far north as St Lucia (Anders, 1975).

Numerous other fish species (eg squaretail kob and various sciaenids (snapper, sin croaker, bearded croaker)) use the Tugela Banks as a nursery area due to suitable food sources and protection from predators in the turbid water (Fennesy, 1994a). For example, juvenile squaretail kob and snapper kob are seasonally abundant as a bycatch in the shallow-water prawn fishery from January to March, before moving from their feeding areas on the trawling grounds to low reef areas where their diet changes to include more teleosts (Fennesy, 1994a). The Tugela Banks are also known to serve as a nursery area for the endangered scalloped hammerhead shark, slinger and black mussel cracker (CBD, 2013), and five species of dasyatid rays (Fennesy, 1994b). The Banks serve as a spawning area for (amongst others) bull shark, sand tiger shark, black mussel cracker and king mackerel and migration route for sardine (‘sardine run’) (Haupt, 2011; Harris *et al.*, 2011; Sink *et al.*, 2011; Ezemvelo KZN Wildlife, 2012; CBD, 2013). Numerous linefish species (eg dusky kob *Argyrosomus japonica*, elf *Pomatomus saltatrix* and garrick *Lichia amia*) undertake spawning migrations along the inshore areas of the coast into KZN waters during the winter months (Van der Elst, 1976, 1981; Griffiths, 1988; Garret, 1988).

Many of the species listed have been identified as either ‘threatened’ by IUCN (2017) or listed as priority species for conservation due to over-exploitation (Sink & Lawrence, 2008).

Following spawning during spring and summer (November to April), the eggs and larvae are subsequently dispersed southwards by the Agulhas Current (Connell, 2010) (Figure 5.11), with juveniles occurring on the inshore Agulhas Bank (Van der Elst, 1976, 1981& Garret, 1988). Ichthyoplankton likewise is confined primarily to waters less than 200 m, with larval concentrations varying between 0.005 and 4.576 larvae/m³. Concentrations, however, decrease rapidly with distance offshore (Beckley & Van Ballegooyen, 1992). The area of interest is in water depths of more than 500 m and therefore ichthyoplankton abundance is likely to be low. As can be seen in Figure 5.11 the area of interest is offshore of major fish spawning and migration routes.

Figure 5.11 Major Fish Spawning, Nursery and Recruitment Areas along the KZN Coast in Relation to Block ER236



Note: Shown on the Figure on Block ER 236 (red polygon) and the areas of interest (orange square)

Source: Pisces, 2017

Fish

Pilchards (*Sardinops sagax*) are a small pelagic shoaling species typically found in shelf water between 14 °C and 20 °C. Spawning occurs on the Agulhas Bank during spring and summer (November to April). During the winter months of June to August, the penetration of northerly-flowing cooler water along the Eastern Cape coast and up to southern KZN effectively expands the suitable habitat available for this species, resulting in a 'leakage' of large shoals northwards along the coast in what has traditionally been known as the 'sardine run'. The cool band of inshore water is critical to the 'run' as the sardines will either remain in the south or only move northwards further offshore if the inshore waters are above 20 °C.

The shoals can attain lengths of 20 to 30 km and are typically pursued by Great White Sharks, Copper Sharks, Common Dolphins (*Figure 5.13, right*), Cape Gannets and various other large pelagic predators (www.sardinerun.co.za, O'Donoghue *et al.*, 2010a, 2010b, 2010c). The sardine run occurs along the continental shelf (overlapping with the spawning area indicated in *Figure 5.11*) inshore of Block ER236 and the area of interest.

A high diversity of pelagic Teleosts (bony fish) and Chondrichthyans (cartilaginous fish) is associated with the numerous inshore reefs and shelf waters inshore of Block ER236. Many of the fishes are endemic to the Southern African coastline and form an important component of the commercial and recreational linefisheries of KZN.

The fish most likely to be encountered on the shelf, beyond the shelf break and in the offshore waters of Block ER236 are the large migratory pelagic species, including various tunas (*Figure 5.12, left*), billfish (*Figure 5.12, right*) and sharks (the great white shark (*Carcharodon carcharias*) and the whale shark (*Rhincodon typus*)), many of which are considered threatened by the International Union for the Conservation of Nature (IUCN), primarily due to overfishing. Tuna and swordfish are targeted by high seas fishing fleets and illegal overfishing has severely damaged the stocks of many of these species. Similarly, pelagic sharks, are either caught as bycatch in the pelagic tuna longline fisheries, or are specifically targeted for their fins, where the fins are removed and the remainder of the body discarded.

Figure 5.12 Large Migratory Pelagic Fish that Occur in Offshore Waters



Note: Longfin Tuna (Left) and Blue Marlin (Right)

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

Reef Communities

The subtidal shallow reefs of the East Coast range from rich, coral-encrusted sandstone reefs in the north to the more temperate rocky reefs further south. To the north of Block ER236, the Maputaland Coral Reef system, which extends from Kosi Bay to Leven Point (27°55'40''S, 32°35'40''E), constitute the southernmost coral-dominated reefs of Africa (UNEP-WCMC, 2011). South of the iSimangaliso Wetland Park (St Lucia) reef habitat is provided by rock outcrops, although both hard and soft corals still occur. Both reef types are characterised by diverse invertebrate and ichthyofaunal biota of Indo-Pacific origin (Figure 5.13, left). The coral reef habitat also provides shelter and a food source for the highly diverse Indo-Pacific reef fish community.

Both the coral-dominated reefs off Sodwana Bay (to the north of Block ER236) and the sandstone reefs off Durban and the KZN South Coast (inshore of Block ER236) are popular amongst divers for their wealth of invertebrate and fish diversity.

Figure 5.13 The Reefs of KZN and the Annual Sardine Run



Note: Reefs (left) and sardine run (right)

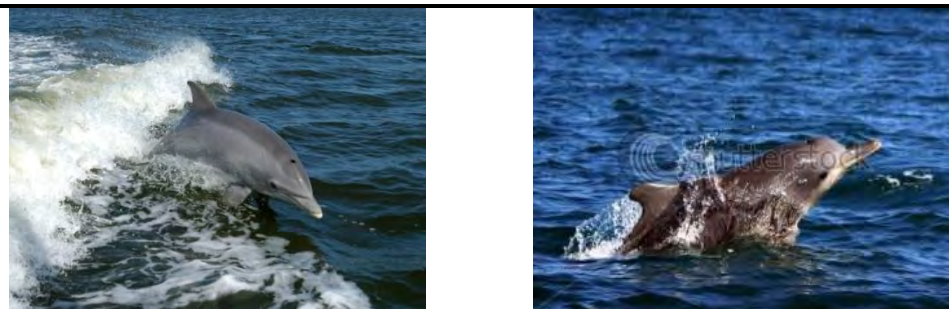
Source: www.sa-venues.com; www.sea-air-land.com

The marine mammal fauna of the East Coast comprise between 28 and 38 species of cetaceans (whales and dolphins) known (historic sightings or strandings) or likely (habitat projections based on known species parameters) to occur there (Findlay, 1989; Findlay *et al.*, 1992; Ross, 1984; Peddemors, 1999; Best, 2007) (Table 5.2). Seals occur only occasionally in the form of vagrant Cape fur seals (*Arctocephalus pusillus pusillus*) (CSIR, 1998). The offshore areas have been particularly poorly studied in which case almost all available information from deeper waters (>200 m) is based on historic whaling records, and information on smaller cetaceans is particularly poor. There are 36 species of cetaceans that are likely to be found within Block ER236. Of the 36 species, according to the South African Red List Assessment, the Antarctic Blue whale (*Balaenoptera musculus intermedia*) is 'critically endangered', the Indo-Pacific humpback dolphin (*Sousa chinensis*), fin whale (*Balaenoptera physalus*) and sei whale (*Balaenoptera borealis*) are considered 'endangered' and the Ifafi-Kosi Bay sub-population of the Indo-Pacific bottlenose dolphin (*Tursiops aduncus*), Sperm whale (*Physeter macrocephalus*) and the inshore population of Bryde's whale (*Balaenoptera brydei*) are considered 'vulnerable' (Child *et al.*, 2016). Altogether nine species are listed as 'data deficient' underlining how little is known about cetaceans, their distributions and population trends (Piscis, 2017).

The distribution of whales and dolphins on the East Coast can largely be split into those associated with the continental shelf and those that occur in deep, oceanic waters. Species from both environments may, however, be found to be associated with the shelf (200 to 1,000 m), making this the most species-rich area for cetaceans. Cetacean density on the continental shelf is usually higher than in pelagic waters as species associated with the pelagic environment tend to be wide-ranging across thousands of kilometres. The most common species within the Block ER236 (in terms of likely encounter rate not total population sizes) are likely to be the common bottlenose dolphin (*Tursiops truncatus* Figure 5.14, left), Indo-pacific bottlenose dolphin (*Tursiops aduncus*), short-finned pilot whale (*Globicephala macrorhynchus*), Indo-Pacific humpback dolphin (*Sousa chinensis*, Figure 5.14, right) and humpback whale (Figure 5.15, left).

Cetaceans comprised two basic taxonomic groups: the mysticetes (filter-feeding baleen whales) and the odontocetes (toothed predatory whales and dolphins). Due to large differences in their size, sociality, communication abilities, ranging behaviour and acoustic behaviour, these two groups are considered separately.

Figure 5.14 *The Bottlenose Dolphin and the Indo-Pacific Humpback Dolphin*



Source: www.fish-wallpapers.com; www.shutterstock.com

Baleen whales that are found in the offshore waters of the East Coast include the blue, fin, sei, minke, dwarf minke, inshore Bryde's, Pygmy Right, Humpback and Southern Right whale. Most of these species occur in deeper pelagic waters, with only occasional visits into the shallower shelf waters. These species show some degree of migration either to, or through, Block ER 236 when en route between higher-latitude feeding grounds (Antarctic or Subantarctic) and lower-latitude breeding grounds.

As whales follow geographic or oceanographic features, the northward and southward migrations may take place at different distances from the coast, thereby influencing the seasonality of occurrence at different locations. Due to the complexities of the migration patterns, the species of key stakeholder concern (humpbacks and southern right whales) are discussed in further detail below.

Humpback whales (*Megaptera novaeangliae*)

Humpback whales (*Figure 5.15*, left) are known to migrate between their Antarctic feeding grounds and their winter breeding grounds in tropical waters. The main winter concentration areas for humpback whales on the African east coast include Mozambique, Madagascar, Kenya and Tanzania on the east coast. During this migration they use subtropical coastal areas as important migratory corridors and exhibit a widespread seasonality in occurrence along the South African east coast (Best, 2007).

Humpback whales and their migration patterns have been studied for a number of years, showing a strong bimodal seasonality in the presence of humpback whales on South Africa's eastern coast, with peaks in abundance in June/ July and September corresponding with their northward and southward migration respectively (Findlay et al. 2011). However, in 2013, a study by Banks made observations of migrations extending further north than previously recorded, with most reaching southern African waters around April, continuing through to September/October when the southern migration begins and continues through to December and as late as February (Banks, 2013).

Cow-calf pairs are typically the last to leave southern African waters on the return southward migration, although considerable variation in the departure time from breeding areas has been recorded (Barendse *et al.*, 2010).

As indicated in Banks (2013), the highest concentrations of humpback whales in or near Block ER236 can be expected in June to July and October to December. Humpback whales are least likely to be present in or near Block ER236 from February to March.

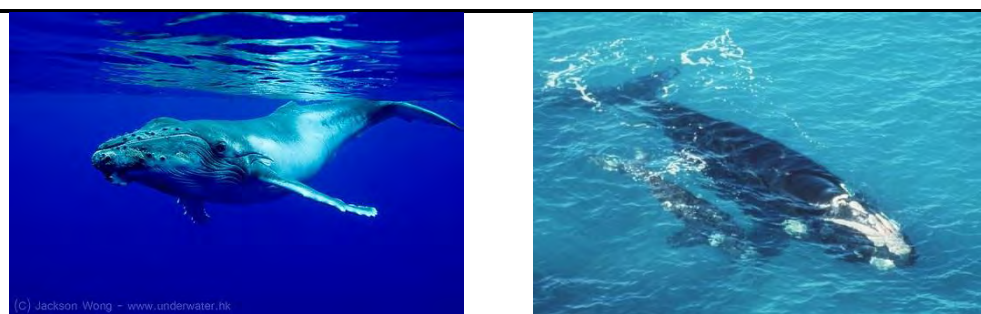
Southern right whales (*Eubalaena australis*)

The Southern African population of southern right whales (Figure 5.15, right) historically extended from Southern Mozambique (Maputo Bay) (Banks *et al.*, 2011) to Southern Angola (Baie dos Tigres) and is considered a single population within this range (Roux *et al.*, 2015). Winter concentrations have been recorded along the Southern and Eastern Coasts of South Africa as far north as Maputo Bay, with the most significant concentration currently on the South Coast between Cape Town and Port Elizabeth. They typically occur in coastal waters off the South Coast between June and November, although animals may be sighted as early as April and as late as January. They migrate to the southern African sub-region to breed and calve, inhabiting shallow coastal waters in sheltered bays (90 percent were found less than 2 km from shore; Best, 1990; Elwen & Best, 2004).

While in local waters, southern right whales are found in groups of 1 to 10 individuals, with cow-calf pairs predominating in inshore nursery areas. From July to October, animals aggregate and become involved in surface-active groups, which can persist for several hours.

Southern right whales will pass through Block ER236 in July and August and again on their southward migration in October/November.

Figure 5.15 *The Humpback Whale and the Southern Right Whale*



Source: www.divephotoguide.com; www.aad.gov.au

Odontocetes

The Odontocetes are a varied group of animals including the dolphins, porpoises, beaked whales and sperm whales.

Species occurring within the broader project area display a diversity of features, for example their ranging patterns vary from extremely coastal and highly site specific to oceanic and wide ranging. Those in the region can range in size from 1.9 m long (Spinner dolphin) to 17 m (bull sperm whale).

Turtles

Five species of sea turtles occur along the East coast of South Africa; the green turtle (*Chelonia mydas*), olive ridley (*Lepidochelys olivacea*), leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*) and loggerhead (*Caretta caretta*).

Loggerheads and leatherbacks nest along the sandy beaches of the northeast coast of KZN, South Africa, as well as southern Mozambique during summer months. These loggerhead and leatherback nesting populations are the southern-most in the world (Nel *et al.*, 2013). Even though these populations are smaller (in nesting numbers) than most other populations, they are genetically unique (Dutton *et al.*, 1999; Shamblin *et al.*, Submitted) and thus globally important populations in terms of conservation of these species.

Satellite tracking of female loggerhead and leatherback turtles during inter-nesting periods revealed that loggerheads remained close to the shore (within the boundaries of the iSimangaliso Wetland Park) between nesting events (Figure 5.16), whereas leatherbacks travelled greater distances (more than 300 km) and beyond the borders of the MPA. Consequently, a southward extension of the MPA has been proposed in order to include a greater portion of the core range of inter-nesting leatherbacks and provide better protection.

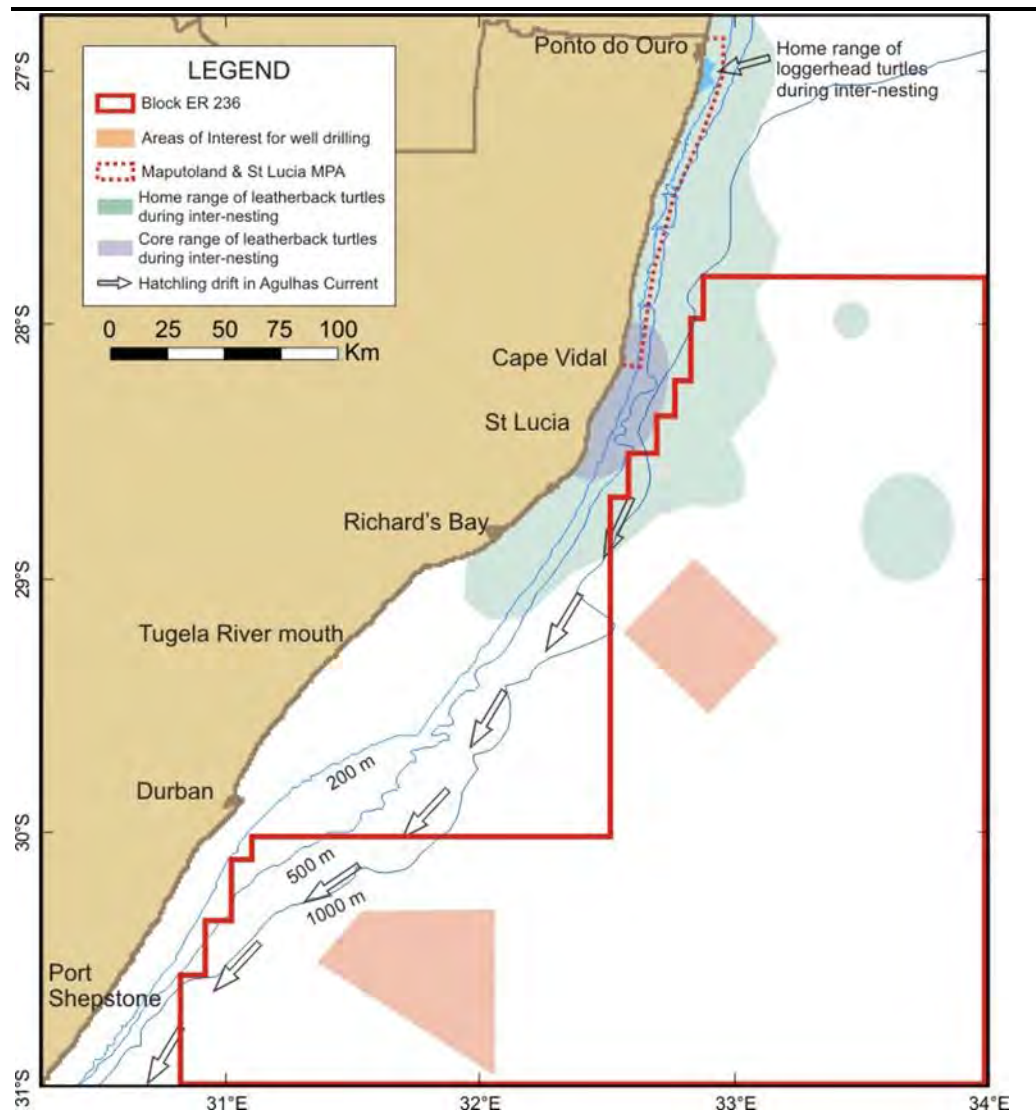
The inshore regions of the northern portion of Block ER236, coincide with the inter-nesting migrations for leatherbacks, but the area of interest lies offshore of the inter-nesting range. Both species are thus likely to be encountered in Block ER236 during their foraging migrations.

Loggerhead and leatherback females come ashore to nest from mid-October to mid-January each year. They crawl up the beach and deposit an average of approximately 100 (loggerheads) or approximately 80 (leatherback) eggs in a nest excavated with their hind flippers. The eggs incubate for two months and hatchlings emerge from their nests from mid-January to mid-March. The mean hatching success for loggerheads (73 percent) and leatherbacks (76 percent) on the South African nesting beaches (de Wet, 2013) is higher than reported at other nesting sites globally. Nevertheless, eggs and emerging hatchlings are nutritious prey items for numerous shoreline predators, resulting in the mean emergence success and hatchling success being slightly lower than the hatching success. However, emergence and hatchling success for both species is similarly higher in South Africa than reported at other nesting beaches as mortality is largely limited to natural sources due to strong conservation presence on the nesting beach, which has reduced incidents of egg poaching and female harvesting to a minimum (Nel, 2010).

The production of both loggerhead and leatherback hatchlings is thus remarkably high in South Africa, making the nesting beaches in northern KZN some of the most productive (relative to nesting numbers) in the world.

In the IUCN Red listing, the hawksbill turtle is described as 'Critically Endangered', the green turtle is 'Endangered' and Leatherback, Loggerhead and Olive Ridley are 'Vulnerable' on a global scale. Leatherback turtles are thus in the highest categories in terms of need for conservation in CITES (Convention on International Trade in Endangered Species), and CMS (Convention on Migratory Species). As a signatory of CMS, South Africa has endorsed and signed two sister agreements specific to the conservation and management of sea turtles (these are the Africa-Atlantic and Indian Ocean South East Asia Memoranda of Understanding). South Africa, as a nation, is therefore committed to the protection of all species of sea turtles occupying its national waters, whether they are non-resident nesters (loggerhead and leatherback turtles) or resident foragers (hawksbill and green turtles; Oceans and Coast, unpublished data). In addition to sea turtle habitat and physical protection in the St. Lucia and Maputaland Marine Reserves, turtles in South Africa are protected under the Marine Living Resources Act (1998).

Figure 5.16 The Home and Core Ranges of Loggerheads and Leatherbacks during Inter-Nesting



Note: Shown on the Figure are the Marine Protected Area (orange outline) and the areas of interest (orange rectangle) within Block ER236 (red polygon).

Source: Oceans and Coast, unpublished data

Seabirds

The East Coast provides few suitable breeding sites for coastal and seabirds with only three species (Grey-headed gull, Caspian tern and Swift tern) (Figure 5.17) recorded to breed regularly along the coast (CSIR, 1998). In the offshore environment of Block ER236, the birds most likely to be encountered are the pelagic migrant species such as albatross, petrels and shearwaters. Encounter rates are likely to be higher during winter months and during the inshore sardine 'run', when many of the pelagic species come inshore to follow the shoals northwards up the coast (O'Donoghue *et al.*, 2010a, 2010b, 2010c). Coastal species may be encountered in the inshore areas Block ER236, particularly in the vicinity of larger estuaries (Richards Bay, St Lucia).

Figure 5.17 Typical Plunge-Diving Seabirds on the East Coast are the Swift Tern (Left) and the Cape Gannet (Right)



Sources: www.johanngrobelaar.co.za; www.oceanwideimages.com

Table 5.2 Marine Mammals Likely to be Encountered in Block ER236

Common Name	Species	Shelf	Offshore	Seasonality	Likely encounter freq.	IUCN Conservation Status	Global IUCN Status
Delphinids							
Common bottlenose dolphin	<i>Tursiops truncatus</i>	Yes	Yes	Year round	Monthly	Least Concern	Least Concern
Indo-Pacific bottlenose dolphin	<i>Tursiops aduncus-Ifafa-Kosi Bay subpopulation</i>	Yes		Year round	Weekly	Vulnerable	
	<i>Tursiops aduncus-Ifafa-False Bay subpopulation</i>	Yes		Year round	Weekly	Near threatened	
	<i>Tursiops aduncus-Seasonal subpopulation</i>	Yes		Year round	Monthly	Data Deficient	Data Deficient
Common (short-beaked) dolphin	<i>Delphinus delphis</i>	Yes	Yes	Year round	Monthly	Least Concern	Least Concern
Common (long-beaked) dolphin	<i>Delphinus capensis</i>	Yes		Year round	Monthly	Least Concern	Data Deficient
Fraser's dolphin	<i>Lagenodelphis hosei</i>		Yes	Year round	Occasional	Least Concern	Least Concern
Pan tropical Spotted dolphin	<i>Stenella attenuata</i>	Yes	Yes	Year round	Occasional	Least Concern	Least Concern
Striped dolphin	<i>Stenella coeruleoalba</i>		Yes	Year round	Occasional	Least Concern	Least Concern
Spinner dolphin	<i>Stenella longirostris</i>	Yes		Year round	Occasional	Data Deficient	Data Deficient
Indo-Pacific humpback dolphin	<i>Sousa chinensis</i>	Yes		Year round	Monthly	Endangered	Near threatened
Long-finned pilot whale	<i>Globicephala melas</i>		Yes	Year round	<Weekly	Least Concern	Data Deficient
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>		Yes	Year round	<Weekly	Least Concern	Data Deficient
Killer whale	<i>Orcinus orca</i>	Occasional	Yes	Year round	Occasional	Least Concern	Data Deficient
False killer whale	<i>Pseudorca crassidens</i>	Occasional	Yes	Year round	Monthly	Least Concern	Data Deficient
Risso's dolphin	<i>Grampus griseus</i>	Yes (edge)	Yes	Year round	Occasional	Least Concern	Least Concern
Pygmy killer whale	<i>Feresa attenuata</i>		Yes	Year round	Occasional	Least Concern	Data Deficient
Sperm whales							
Pygmy sperm whale	<i>Kogia breviceps</i>		Yes	Year round	Occasional	Data Deficient	Data Deficient
Dwarf sperm whale	<i>Kogia sima</i>		Yes	Year round	Occasional	Data Deficient	Data Deficient
Sperm whale	<i>Physeter macrocephalus</i>		Yes	Year round	Occasional	Vulnerable	Vulnerable
Beaked whales							
Cuvier's	<i>Ziphius cavirostris</i>		Yes	Year round	Occasional	Least Concern	Least Concern
Arnoux's	<i>Berardius arnouxii</i>		Yes	Year round	Occasional	Data Deficient	Not assessed
Southern bottlenose	<i>Hyperoodon planifrons</i>		Yes	Year round	Occasional	Least Concern	Least Concern
Hector's	<i>Mesoplodon hectori</i>		Yes	Year round	Occasional	Data Deficient	Data Deficient

Common Name	Species	Shelf	Offshore	Seasonality	Likely encounter freq.	IUCN Conservation Status	Global IUCN Status
Strap-toothed whale	<i>Mesoplodon layardii</i>		Yes	Year round	Occasional	Data Deficient	Data Deficient
Longman's	<i>Mesoplodon pacificus</i>		Yes	Year round	Occasional	Data Deficient	Data Deficient
True's	<i>Mesoplodon mirus</i>		Yes	Year round	Occasional	Data Deficient	Data Deficient
Gray's	<i>Mesoplodon grayi</i>		Yes	Year round	Occasional	Data Deficient	Data Deficient
Blainville's	<i>Mesoplodon densirostris</i>		Yes	Year round	Occasional	Data Deficient	Data Deficient
Baleen whales							
Antarctic minke	<i>Balaenoptera bonaerensis</i>	Yes	Yes	>Winter	Monthly	Least Concern	Data Deficient
Dwarf minke	<i>Balaenoptera acutorostrata</i>	Yes		Year round	Occasional	Least Concern	Least Concern
Fin whale	<i>Balaenoptera physalus</i>		Yes	MJJ & ON	Occasional	Endangered	Endangered
Antarctic Blue whale	<i>Balaenoptera musculus intermedia</i>		Yes	MJJ	Occasional	Critically Endangered	Endangered
Sei whale	<i>Balaenoptera borealis</i>		Yes	MJ & ASO	Occasional	Endangered	Endangered
Bryde's (inshore)	<i>Balaenoptera brydei (subsp)</i>		Yes	Year round	Occasional	Vulnerable	Data Deficient
Pygmy right	<i>Caperea marginata</i>	Yes		Year round	Occasional	Least Concern	Data Deficient
Humpback	<i>Megaptera novaeangliae</i>	Yes	Yes	AMJJASOND	Daily	Least Concern	Least Concern
Southern right	<i>Eubalaena australis</i>	Yes		JJASON	Daily	Least Concern	Least Concern

Marine Protected Areas

Maputaland and St Lucia Marine Reserves

The Maputaland and St Lucia Marine Reserves form a continuous protected area stretching 150 km from the Mozambique border southwards to Cape Vidal, and 3 nautical miles (approximately 5.5 km) out to sea. They are components of the iSimangaliso Wetland Park. No fishing is allowed in the Sanctuary Zone between beacon N5 at Red Cliffs and beacon N6 at Leven Point, extending three nautical miles (approximately 5.5 km) due east from the high-water mark. In the Restricted Zones which lie to the north of beacon N5 at Red Cliffs and to the south of beacon N6 at Leven Point, respectively, shore anglers may catch fish, and skiboat anglers and spearfishers may catch pelagic bony fish.

The area off St Lucia was selected as an MPA because it is an important area for leatherback turtles which nest on adjacent beaches and forage offshore with tracking data reflecting turtle habitat use well beyond the three nautical mile (approximately 5.5 km) boundary of the existing St Lucia and Maputaland MPAs. Threatened seabirds drive the remaining areas although linefish of conservation concern also contribute to importance of the area.

The MPA protects a large number of turtle nesting sites; the migration of whales, dolphins and whale-sharks offshore; coelacanths in the submarine canyons; and a considerable number of waterfowl associated with the iSimangaliso Wetland Park, including large breeding colonies of pelicans, storks, herons and terns.

Aliwal Shoal

The Aliwal Shoal MPA is located inshore of the southern area of interest and extends along the KZN south coast for 18.3 km between the Mzimayi and Umkomaas River mouths, and from the high-water mark to seven kilometres offshore.

The Aliwal Shoal is a sub-tidal reef located 5 km offshore near Umkomaas which supports corals (including 15 species of hard corals and four species of soft corals), fish and shark communities, which have created a popular attraction to divers and fisherman. Many endangered and endemic reef fish are found on the shoal, which has resulted in formation of specific no take areas (eg Crown Area and Produce restricted areas). Further south lies the small Trafalgar Marine Reserve, which stretches for only 6 km along the KZN south coast adjacent to the Mpenjati Nature Reserve, and extends 500 m offshore.

The Aliwal Shoal MPA was selected as an MPA to conserve the biodiversity of the area. The Aliwal Shoal was historically a site of conflict between user groups, but agreements have now been reached in regard to the partitioning of uses between fishing, diving and spear-fishing, which have been formalised in a management plan. The MPA has various functions including the conservation of fauna, management of conflict between user groups, and the development of a world-class diving site.

5.3.4 *Focus Areas for Offshore Biodiversity Protection*

The Offshore MPA Project (SANBI, 2011) aimed to support the implementation of the National Protected Area Expansion Strategy (Government of South Africa, 2010), which highlighted the need to establish specific offshore MPAs and to provide suitable protection of inshore systems within South Africa. Priority areas for different types of objectives were explored during this project and it is recognised that protection may be apportioned between different types of spatial management including different zones of MPAs but also other types of spatial management.

As part of the Offshore MPA Project, ten focus areas have been identified for offshore protection along the South African coast. At this stage, these focus areas only represent preliminary delineations for the spatial management of South Africa's offshore, based on best available information. As such, practical proposed boundaries for each focus area will need to be properly determined (in subsequent stages of development of the programme) through finer-scale interrogation of available spatial data and further stakeholder consultation.

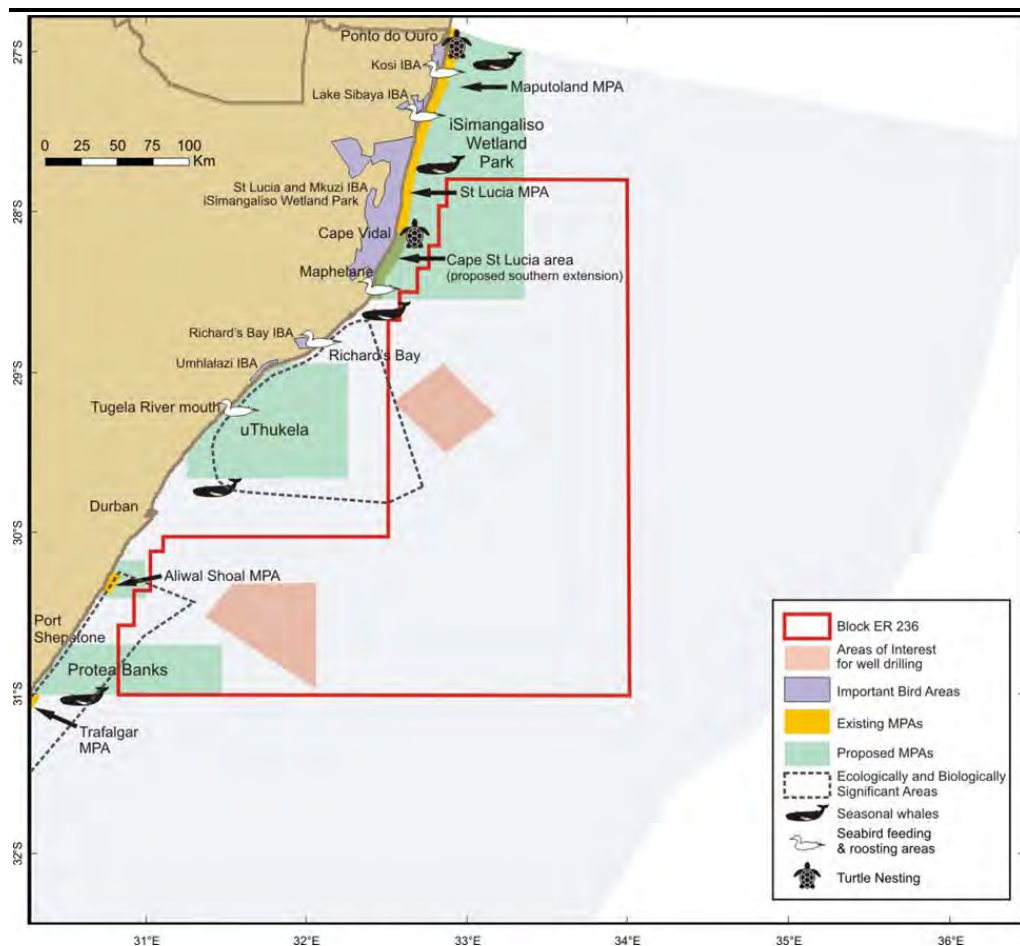
Each of these focus areas has been set out with specific objectives, key stakeholders and potential spatial management measures. It is however also important to take note of such developments, as while it may not affect the current proposed activity, it may have implications any future activity. In this regard, specific types of spatial management measures that could be implemented in such areas could include, amongst others, zoned Marine Protected Areas or Fisheries Management Areas promulgated through South Africa's Marine Living Resources Act.

The focus areas within the Project Area are shown in *Figure 5.18*. Although Block ER236 overlaps with the proposed Protea Banks and the extension of the iSimangaliso Wetland Park MPAs, there is no overlap of the areas of interest with the proposed protection areas.

Hope Spots are defined by Mission Blue of the Sylvia Earle Alliance as special conservation areas that are critical to the health of the ocean.

The first six Hope Spots were launched in South Africa in 2014 and include Aliwal Shoal in KZN, Algoa Bay, Plettenberg Bay, Knysna, the Cape Whale Coast (Hermanus area) and False Bay in the Western Cape. Of these, the Aliwal Shoal Hope Spot is located adjacent to (inshore) the southwestern corner of Block ER236 but well to the southwest (~250 km) of the area of northern interest for well drilling, and ~75 km inshore and west of the southern area of interest.

Figure 5.18 Focus Areas for Offshore Biodiversity Protection in Relation to Block ER236



Note: Shown on the Figure are Important Bird Areas (IBAs), proposed and existing Marine Protected Area (MPA) in relation to Block ER 236 (red polygon)

Source: Pisces, 2017

Tugela Banks

The Tugela Bank offshore focus area overlaps with the Block ER236 and the iSimangaliso offshore focus area is adjacent to the northern extent of the Block ER236. The closet boundary of the iSimangaliso offshore focus area is 10 km north of the Block ER236. The Tugela Banks is being considered as an offshore focus area for biodiversity protection because this area is highly productive and serves a nursery area for many species. This focus area was also identified by finescale planning conducted in KZN through the SeaPlan project led by Ezemvelo KZN Wildlife.

The iSimangaliso Wetland Park is recognised as a wetland of international importance under the Ramsar Convention and has been designated a World Heritage Site in terms of the World Heritage Convention Act (No. 49 of 1999). The iSimangaliso Wetland Park covers an area on 324 441 ha, including 230 km of coastline from Kosi Bay (bordering Mozambique) to south of Maphelane and three nautical miles (approximately 5.5 km) out to sea. The Park is governed by the National Environmental Management Protected Areas Act (No. 57 of 2003). In terms of Section 48(1) no person may conduct commercial prospecting or mining activities within a World Heritage Site. In addition, Section 50(5) states that no development is permitted in a World Heritage Site without prior written approval from the management authority, namely iSimangaliso Wetland Park Authority. The Project Area lies approximately 100km to the south of the World Heritage Site (*Figure 5.18*).

5.4 SOCIO-ECONOMIC BASELINE

The project is located off the coast of the KZN Province, and will have an onshore logistics base in either the Port of Richards Bay or the Port of Durban. Most of the activities associated with the project will take place offshore, with the exception of activities associated with the onshore logistics base. As such, this socio-economic baseline is focused on the local municipalities in which the logistics base may be located. This is because it is expected that although the project will result in macro-economic benefits at a national level, the primary socio-economic impacts of the project will be experienced at a local level.

5.4.1 Administrative Structure

The Provincial government is responsible for providing the strategic vision and framework for the Province. They are responsible for ensuring cooperation and collaboration between municipalities and that each municipality performs their respective functions. In turn, each of the District Municipalities is responsible for the preparation of a spatial development framework and for the overall provision of services and infrastructure within their District. The district municipalities are further divided into local municipalities. Local municipalities are responsible for developing an Integrated Development Plan, IDP, which is aligned with the strategic vision of the province, and sets out a road map for achieving local socio-economic development.

Provincial Context

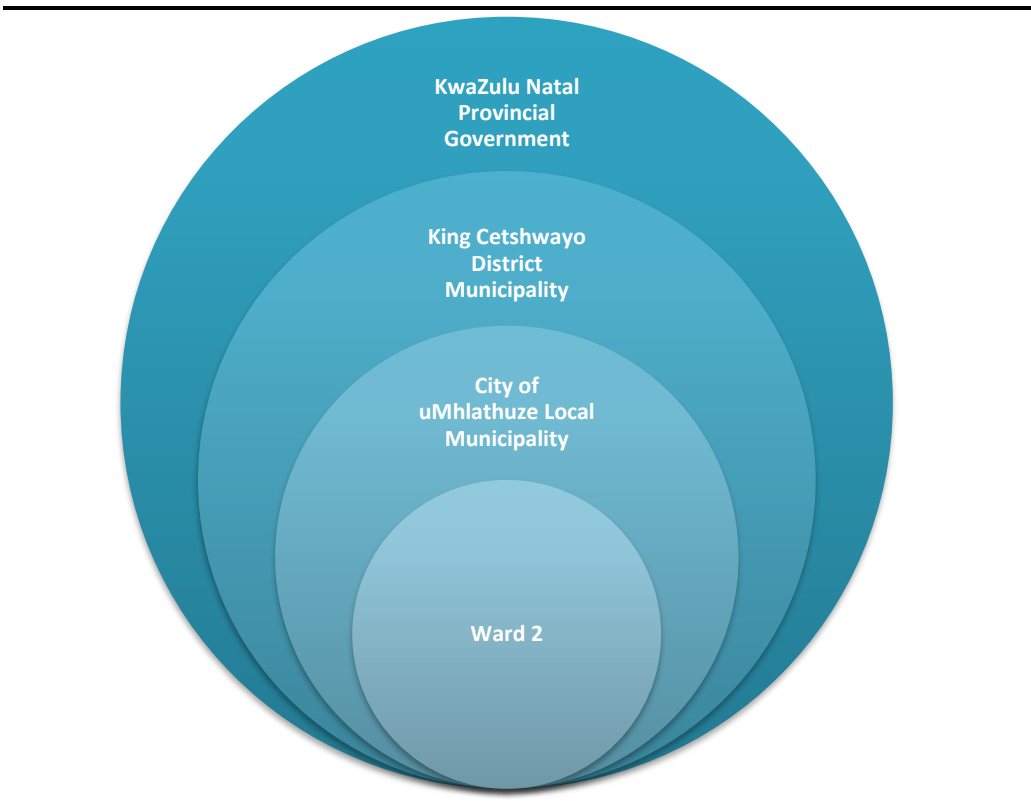
The project is located off the coast of the KZN Province, the third smallest province in South Africa, covering an area of 94,361 km². KZN has the second largest population of the South African provinces, with a total of 11,065,240 people.

5.4.2

King Cetshwayo District Municipality and the City of uMhlathuze Local Municipality

The Port of Richards Bay is located in the City of uMhlathuze Local Municipality (uMhlathuze Local Municipality), which falls into the King Cetshwayo District Municipality (KCDM). The KCDM is one of the eleven (11) district municipalities within the KZN Province. It has a total of six (6) local municipalities namely: City of uMhlathuze, Umlalazi, Nkandla, Mbonambi, Ntambanana and Mthonjaneni Local Municipalities. The onshore logistics base will be located in Ward 2. Figure 5.20 shows the administrative structure of the respective levels of government.

Figure 5.20 *Administrative Structure*



KCDM is located in the north eastern region of KZN, covering a total of 8,213 km². It has the third highest population in the KZN Province with an estimated total of 971,135 people. The District is home to the largest deep water port on the African continent ie the Port of Richards Bay.

The Port of Richards Bay handles over 75 million tons of cargo per annum, which is double the capacity of the Port of Durban to the south. In light of the above, the Port of Richards Bay has played a significant role in developing the manufacturing sector in the region, thus enabling it to be a large contributor to the economy and gross geographic product (uMhlathuze Municipality SDF, 2017/2018).

With this said, the KCDM has various challenges, including deep rural communities which are poverty stricken, a lack of basic services such as water and sanitation and unemployment (uMhlathuze Municipality SDF, 2017/2018).

Population Demographics

The uMhlathuze Local Municipality has a population of 410,465 people according to the 2016 community survey (StatsSA). This number has grown by 22.73 percent since the last census in 2011. Using the survey conducted in 2011, it was calculated that the uMhlathuze Municipality has a household size of approximately 3.95 people for an estimated total of 103,915 households (uMhlathuze Municipality SDF, 2017/2018). Comparative information around the population for the district and local municipality is provided in *Table 5.3*.

Table 5.3 *Population Summary*

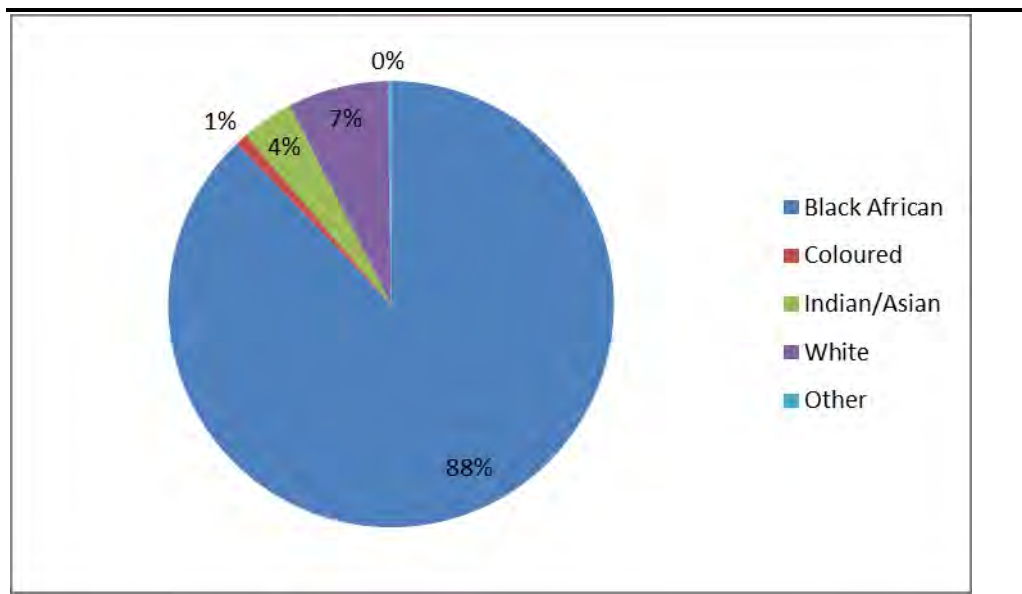
Year	Administrative Area Name	Size	Population	Growth Percentage
2011	King Cetshwayo District Municipality	8,213 km ²	907,519	
2011	City of uMhlathuze Local Municipality	1,233 km ²	334,459	
2016	King Cetshwayo District Municipality	8,213 km ²	971,135	7.01
2016	City of uMhlathuze Local Municipality	1,233 km ²	410,465	22.73

Source: uMhlathuze Municipality SDF, 2017/2018

According to the 2011 census, Black Africans are the majority population group making up 87.7 percent of the population. White people make up 7.3 percent, while the other population groups make up the rest as shown in *Figure 5.21*.

IsiZulu is the dominant language spoken in the uMhlathuze Local Municipality with 78.7 percent speaking the language (StatsSA, 2016).

Figure 5.21 Ethnic Composition in the City of uMhlathuze Local Municipality



Source: StatsSA 2016

Local Economy and Livelihoods

The uMhlathuze Local Municipality and KCDM economies are both primarily driven by Port of Richards Bay, which is one of the two largest and busiest ports on the African continent. This area contributes a total of 16.7 percent towards the KZN Gross Domestic Product (GDP).

The main activities being undertaken in the uMhlathuze Local Municipality include large scale industrial activities including coal terminals, aluminium smelters, as well as mining, paper mills, forestry, production of materials handling equipment and fertiliser and special chemicals production (uMhlathuze Municipal IDP, 2012/2017).

Unemployment

The unemployment rate in the uMhlathuze Local Municipality is estimated to be 40 percent (uMhlathuze Municipal IDP, 2012/2017). This comprises people who are unemployed but seeking employment, as well as those who are not seeking employment. According to the IDP, the unemployment issue is as a result of the lack of skills, which is largely attributed to apartheid regime where a system was created that excluded the majority of the population from receiving quality education, but directed them to semi-skilled or unskilled labour instead (uMhlathuze Municipal IDP, 2012/2017).

Education

An uThungulu (KCDM) Quality of Life Survey conducted in 2009 illustrated that a larger percentage of the population was noted to have reached secondary education (30.52 percent).

Only 22.41 percent reached grade 12 and a smaller 8.45 percent make it to tertiary level education (uMhlathuze Municipal IDP, 2012/2017). A pattern is seen in the District where the level of education decreases whilst the demand for skills increases.

Social Infrastructure and Services

Water and Sanitation

The City of uMhlathuze receives funding from the Municipal Infrastructure Grant (MIG). This funding is used for water (70 percent) and sanitation (30 percent) services. This funding, however, was found to be ineffective in improving sanitation services in the area. A total of 86.37 percent of the households in the uMhlathuze Local Municipality has access to basic RDP ⁽¹⁾ level water services, whereas 57.91 percent have access to basic level sanitation services.

Waste

An estimated 53.5 percent of households have their waste removed by the local authority or a private company at least once a week. There is a large number of households that rely on their own refuse dumps, (38.4 percent) and a small percentage relies on communal dump alternatives (2.6 percent) (StatsSA, 2016).

Energy

The uMhlathuze Local Municipality has no backlog of households waiting for services in terms of energy supply in the area. The regulator has enforced a grid code which provides guidelines and rules governing how Municipalities are to create and maintain electrical infrastructure assets. All energy distributors are to comply with the Distribution Grid Code as part of their licence (uMhlathuze Municipal IDP, 2012/2017).

Health

Within the uMhlathuze Local Municipality there are four hospitals and 23 health clinics. The IDP identified a need for additional health facilities in remote Traditional Authority areas.

The KCDM had an HIV prevalence of 38.5 percent in 2012 in the age groups 15 to 45 years, up from 33.4 percent the previous year (District Health Plan 2015/2016). This is significantly higher than the prevalence rate in KZN (25 percent) and South Africa (18 percent). The uMhlathuze Local Municipality IDP notes that there is a lack of clear and reliable data regarding HIV/ AIDS at a local municipal level, but that it is clear that it is a serious problem.

(1) Reconstruction and Development Programme (RDP)

It is further noted that the Tuberculosis (TB) cases in both the KCDM and the uMhlathuze Local Municipality are high, with TB being the leading cause of death in the KCDM (District Health Plan 2015/2016).

5.4.3 *eThekwini Metropolitan Municipality*

Administrative Structure

The onshore logistics base for the project may be situated in the Port of Durban, which is located in the eThekwini Metropolitan Municipality, Ward 32. *Figure 5.22* shows the administrative structure of the respective levels of government.

eThekwini Metropolitan Municipality (eThekwini Municipality) is a category A municipality which is located on the East Coast of South Africa, occupying an area of approximately 2,297 km² and comprises a population of 3,555,868 people (eThekwini Municipality IDP, 2016/2017). eThekwini Metropolitan is bordered by three district municipalities namely: iLembe to the north, uGu to the south and uMgungundlovu to the west (SDF, 2016/2017). It is characterised by its hilly topography and many gorges and ravines. It also houses one of Africa's most well managed and busiest ports, the Port of Durban. Durban is the largest city in KZN with just over one third of its total population, and it is the third largest city in the country (StatsSA, 2016).

Figure 5.22 Administrative Structure



Population Demographics

The population of eThekweni Municipality is approximately 3,555,868 people (eThekweni Municipality IDP, 2016/2017). The population is spread in such a way that the most concentrated region is the central and north planning regions. The outer west region however, which comprises the largest surface area (approximately 78,438 ha) only houses 11 percent of the total Municipality's population. The northern region houses 33 percent of the Municipality's population, and the central region houses 34 percent of the total population (eThekweni Municipality SDF, 2016/2017).

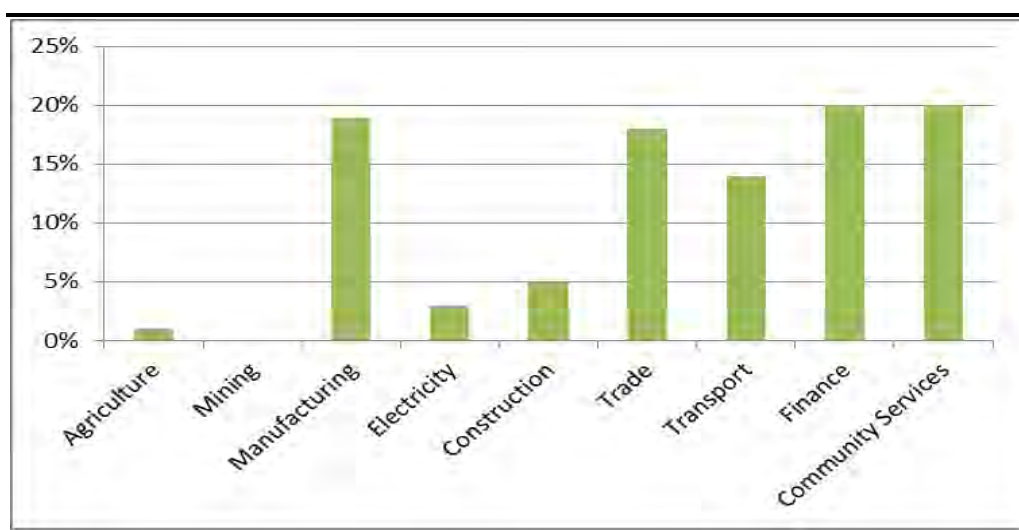
The gender profile in the eThekweni Municipality represents a larger percentage of females (51 percent) to males (49 percent). The majority of the population falls within the 0 – 29 age range, whereas the 60 – 70 age range constitutes a very small percentage of the population (eThekweni Municipality SDF, 2016/2017).

Local Economy and Livelihoods

According to the Quarterly Labour Force Survey by Statistics South Africa, the eThekweni municipal region was recorded to have the lowest unemployment rate in the second quarter of 2015 with only 16 percent of the region being unemployed (eThekweni Municipality IDP, 2016/2017). This region employs approximately 9 percent of the national population. Currently, eThekweni Metropolitan makes up 57.1 percent of the Provincial Gross Domestic Product (GDP), and 1 percent of the national GDP (eThekweni Municipality IDP, 2016/2017).

The sectors contributing the most to the eThekweni Municipality economy is the Finance and Community Services sectors (20 percent each), with Agriculture contributing the least with 1 percent (eThekweni Municipality IDP, 2016/2017). The figure below illustrates the sectoral composition of the GDP in the eThekweni Metropolitan Municipality.

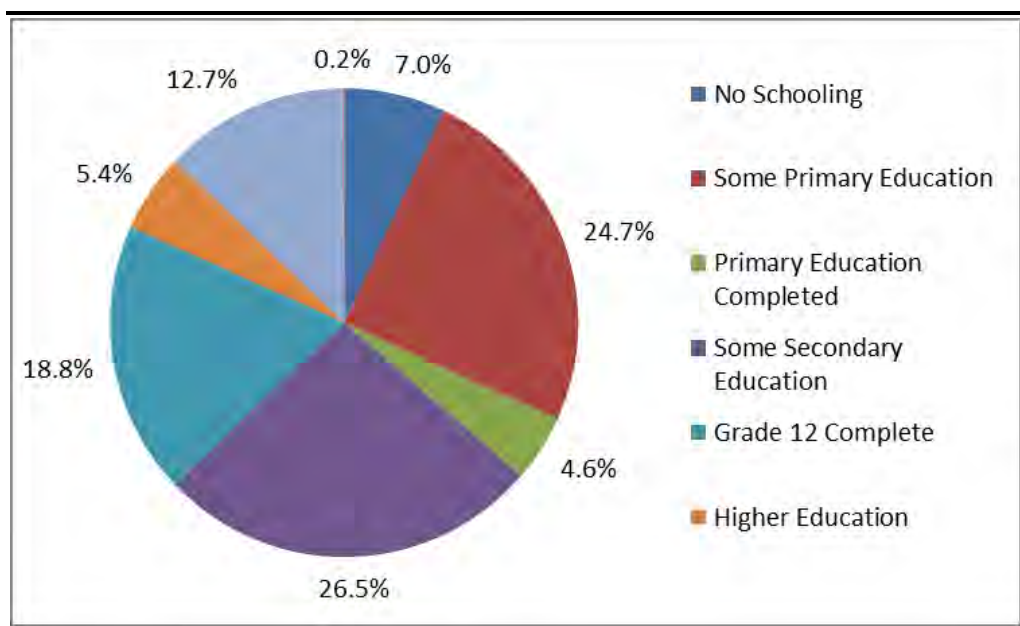
Figure 5.23 Sectoral Composition of GDP in 2014: eThekweni Metropolitan Municipality



Education

According to the eThekweni Spatial Development Framework (2016/2017), 29 percent of the eThekweni Metropolitan Municipality has some secondary education, while, only 8 percent has tertiary level education. Figure 5.24 below illustrates the educational breakdown within the eThekweni Municipality.

Figure 5.24 Education Profile within eThekweni Metropolitan Municipality



Source: eThekweni Municipality SDF, 2016/2017

Social Infrastructure and Services

Water and Sanitation

Approximately 933,121 households were recorded to have access to water services in 2014/2015 at the Municipality. This marks 98.65 percent coverage across the region. The eThekweni Municipality currently maintains and manages 327 water storage facilities.

Energy

The portion of houses with no connection to electricity has decreased by 6.1 percent between the period of 2011/2012 and 2014/2015. The eThekweni Municipality aims to sustain this growth through the maintenance and handling of 152 major substations within the derestriction. In addition, the Municipality manages 31 waste water treatment plants, and 300 pump stations which have enabled it to reduce the sanitation backlog by 24 percent over a 5 year period.

Health

The prevalence of HIV/ AIDS in the eThekweni Municipality is high, as it is in the rest of South Africa (18 percent) and KZN (25 percent). Tuberculosis (TB) is recognised as the leading opportunistic infection amongst HIV positive persons with approximately two thirds of HIV infected persons co-infected with TB. In 2009 a total of 43,739 new and retreatment cases (both HIV positive and HIV negative) were registered in the eThekweni Municipality, making it one of the districts with the highest number of TB cases in South Africa. However the treatment rate in the eThekweni Municipality is high and treatment rates have improved from 70.8 percent in 2011 to 79,5 percent in 2013 (eThekweni Municipality IDP).

Key challenges relating to health service provision in the eThekweni Municipality are:

- High rate of HIV/ AIDS and TB.
- High teenage pregnancy rate.
- Sexual abuse in children less than sixteen years.
- Abuse of chemical substances (drugs and alcohol). Lobby for change in the legislative framework.
- High incidence of injuries and trauma.
- Inequitable distribution of resources towards an urban bias.
- Only 66 percent of eThekweni residents have access to primary level care facility within a 5km access distance.
- Primary Health Care services are considered an unfunded mandate for the municipality however there are ongoing negotiations to improve funding.
- The number of Environmental Health Practitioners (EHPs) remains below the expected norms, however, the municipality has a multi-year funding plan to increase these numbers starting with the employment of 35 EHPs in the 12/13 financial year.
- Challenges with professional ethics and management capacity.

5.4.4

Fisheries

South Africa has a coastline that spans two ecosystems over a distance of 3,623 km, extending from the Orange River in the west on the border with Namibia, to Ponta do Ouro in the east on the Mozambique border.

The western coastal shelf has highly productive commercial fisheries similar to other upwelling ecosystems around the world, while the East Coast is considerably less productive but has high species diversity, including both endemic and Indo-Pacific species. South Africa's commercial fisheries are regulated and monitored by DAFF (previously managed under the Department of Environmental Affairs: Directorate: Marine and Coastal Management). All fisheries in South Africa, as well as the processing, sale in and trade of almost all marine resources, are regulated under the Marine Living Resources Act, 1998 (No. 18 of 1998) (MLRA).

Approximately 14 different commercial fisheries sectors currently operate within South African waters. In summary the sector comprises the following:

- Primary fisheries in terms of economic value and overall tonnage of landings are the demersal (bottom) trawl and long-line fisheries targeting the Cape hakes (*Merluccius paradoxus* and *M. capensis*) and the pelagic-directed purse-seine fishery targeting pilchard (*Sardinops ocellatus*), anchovy (*Engraulis encrasicolus*) and red-eye round herring (*Etrumeus whitheadii*).
- Highly migratory tuna and tuna-like species are caught on the high seas and seasonally within the South African waters by the pelagic long-line and pole fisheries. Targeted species include albacore (*Thunnus alalunga*), bigeye tuna (*T. obesus*), yellowfin tuna (*T. albacares*) and swordfish (*Xiphias gladius*).
- The traditional line fishery targets a large assemblage of species close to shore including snoek (*Thyrsites atun*), Cape bream (*Pachymetopon blochii*), geelbek (*Atractoscion aequidens*), kob (*Argyrosomus japonicus*), yellowtail (*Seriola lalandi*) and other reef fish.
- Crustacean fisheries comprise a trap and hoop net fishery targeting West Coast rock lobster (*Jasus lalandii*), a line trap fishery targeting the South Coast rock lobster (*Palinurus gilchristi*) and a trawl fishery based solely on the East Coast targeting penaeid prawns, langoustines (*Metanephrops andamanicus* and *Nephropsis stewarti*), deep water rock lobster (*Palinurus delagoae*) and red crab (*Chaceon macphersoni*).
- Other fisheries include a mid-water trawl fishery targeting horse mackerel (*Trachurus trachurus capensis*) predominantly on the Agulhas Bank, South Coast and a hand-jig fishery targeting chokka squid (*Loligo vulgaris reynaudii*) exclusively on the South Coast.

In addition to commercial sectors, recreational fishing occurs along the coastline comprising shore angling and small, open boats generally less than 10 m in length. The commercial and recreational fisheries are reported to catch over 250 marine species, although fewer than 5 percent of these are actively targeted by commercial fisheries, which comprise 90 percent of the landed catch.

Most commercial fish landings must take place at designated fishing harbours. For the larger industrial vessels targeting hake, only the major ports of Saldanha Bay, Cape Town, Mossel Bay and Port Elizabeth are used. There are more than 230 ⁽¹⁾ small-scale fishing communities on the South African coastline, ranging in size from small villages to towns. Small-scale fisheries commonly use boats but occur mainly close to the shore.

Description of Commercial Fishing Sectors and Fisheries Research Surveys

The fishing sectors which overlap with Block ER236 or may potentially be affected by the project activities are described in this section.

Large Pelagic Long Line

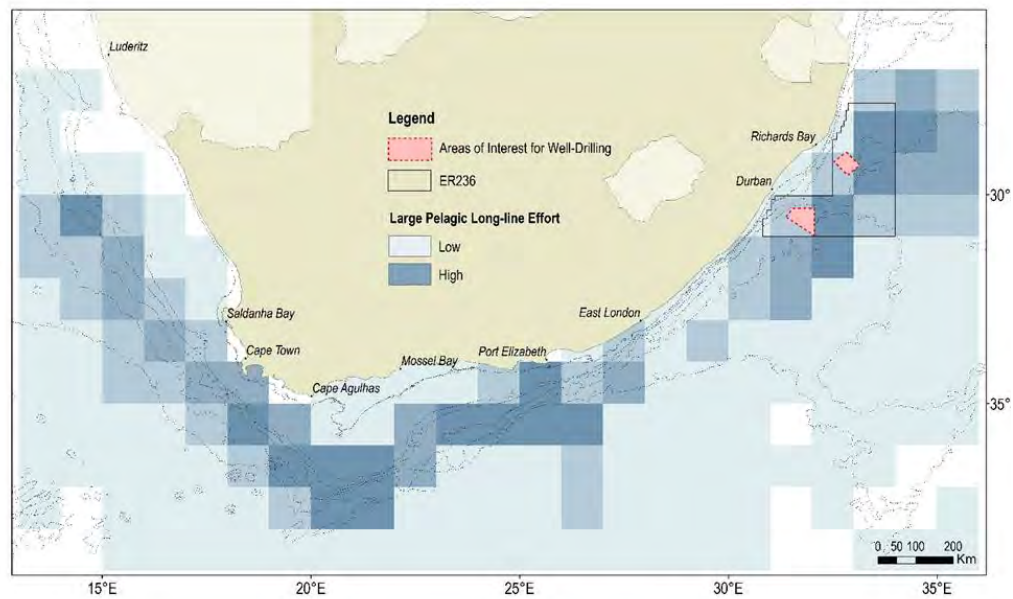
Highly migratory tuna and tuna-like species are caught on the high seas and seasonally within the South African Exclusive Economic Zone (EEZ) by the pelagic long-line and pole fisheries. Targeted species include albacore (*Thunnus alalunga*), bigeye tuna (*T. obesus*), yellowfin tuna (*T. albacares*) and swordfish (*Xiphias gladius*). Tuna, tuna-like species and billfishes are migratory stocks and are therefore managed as a “shared resource” amongst various countries under the jurisdiction of the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the Indian Ocean Tuna Commission (IOTC). In the 1970s to mid-1990s the fishery was exclusively operated by Asian fleets (up to 130 vessels) under bilateral agreements with South Africa. From the early 1990s these vessels were banned from South African waters and South Africa went through a period of low fishing activity as fishing rights issues were resolved. Thereafter a domestic fishery developed and 50 fishing rights were allocated to South Africans only.

These rights holders now include a small fleet of local long-liners, although the fishery is still undertaken primarily with Japanese vessels fishing in joint ventures with South African companies. There are currently 30 commercial large pelagic fishing rights issued and 21 vessels active in the fishery.

The fishery operates extensively within the South African EEZ, primarily along the continental shelf break and further offshore. As indicated in *Figure 5.25*, the Block ER236 coincides with the spatial distribution of pelagic long-line fishing effort.

(1) DAFF. 2016. Small-Scale Fisheries. A guide to the small-scale fisheries sector. <http://small-scalefisheries.co.za/wp-content/downloads/SSF%20Booklet%20English.pdf>

Figure 5.25 *Spatial Distribution of National Pelagic Long-line Fishing Effort*

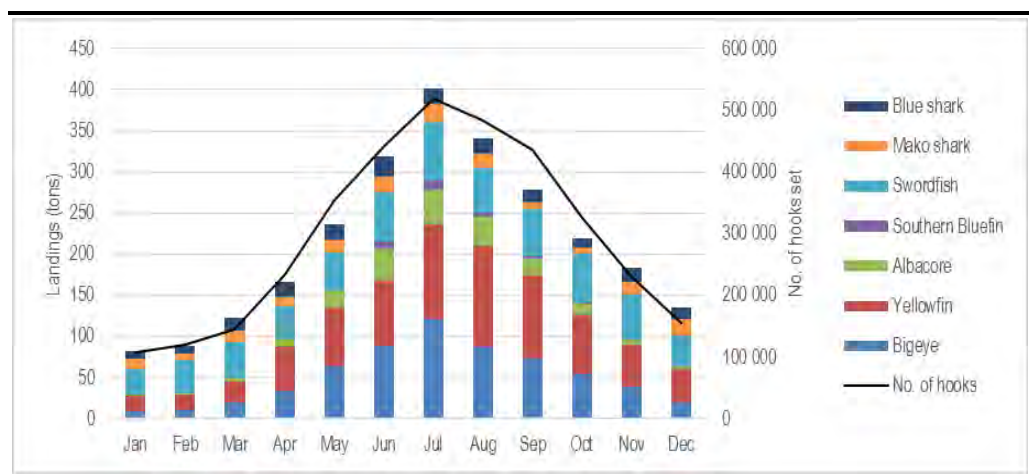


Note: The fishing effort is expended by the long-line sector targeting large pelagic species in relation to ER236 and the proposed areas of interest

Source: Capmarine, 2017

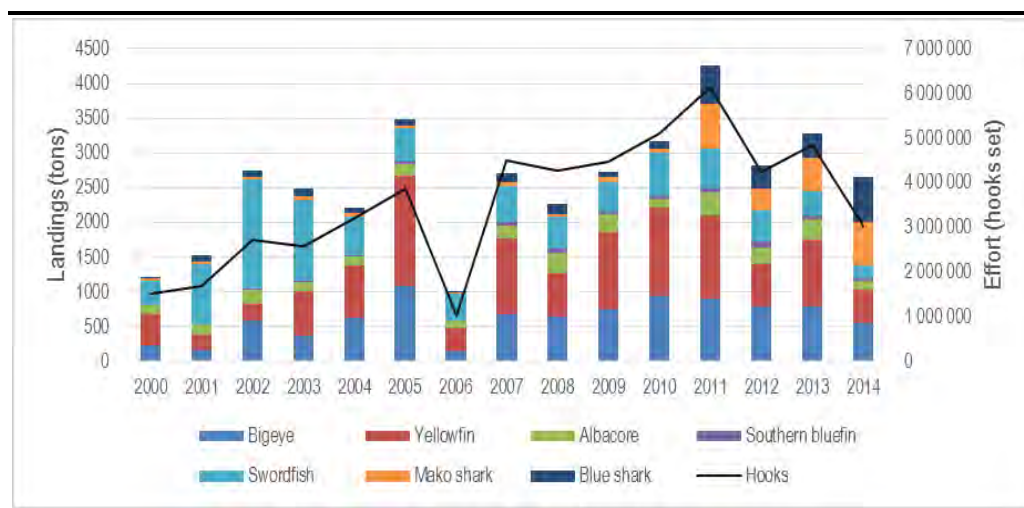
The fishery operates year-round with a relative increase in effort during winter and spring (see Figure 5.26). Catch per unit effort (CPUE) variations are driven both by the spatial and temporal distribution of the target species and by fishing gear specifications. Variability in environmental factors such as oceanic thermal structure and dissolved oxygen can lead to behavioural changes in the target species, which may in turn influence CPUE (Punsly and Nakano, 1992). During the period 2000 to 2014, the sector landed an average catch of 4,527 tons and set 3.55 million hooks per year. Catch and effort figures reported by the fishery for the years 2000 to 2014 are shown in Figure 5.27

Figure 5.26 *Intra-Annual Variation of Catch and Effort Recorded by the Large Pelagic Long-Line Sector (Average Figures for the Period 2000 - 2014)*



Source: Capmarine, 2017

Figure 5.27 Inter-Annual Variation of Catch Landed and Effort Expended by the Large Pelagic Longline Sector (2000 - 2014).

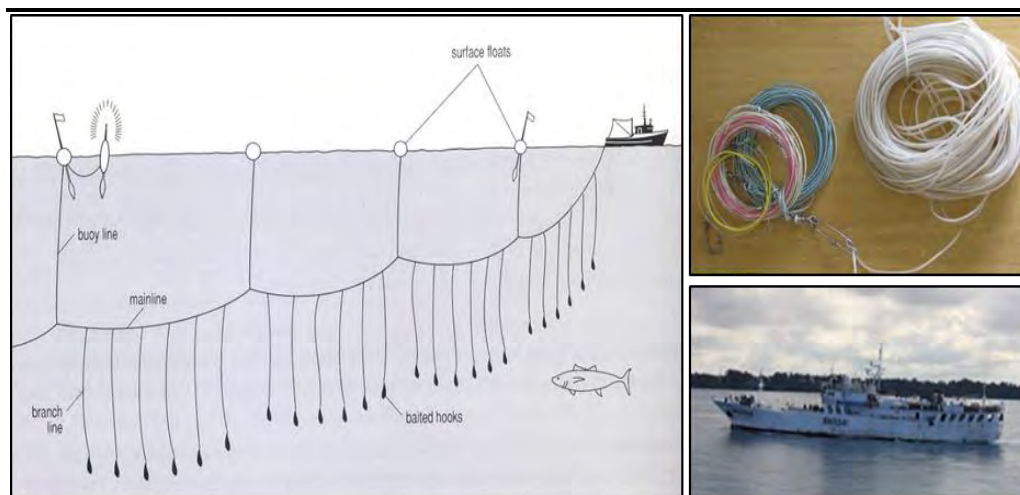


Source: Capmarine, 2017

Gear consists of monofilament mainlines of between 25 km and 100 km in length which are suspended from surface buoys and marked at each end (see Figure 5.28). As gear floats close to the water surface, it would present a potential obstruction to surface navigation. The main fishing line is suspended about 20 m below the water surface via dropper lines connecting it to surface buoys at regular intervals. Up to 3,500 baited hooks are attached to the mainline via 20 m long trace lines, targeting fish at a depth of 40 m below the surface. Various types of buoys are used in combinations to keep the mainline near the surface and locate it should the line be cut or break for any reason. Each end of the line is marked by a Dahn Buoy and radar reflector, which marks the line position for later retrieval.

Lines are usually set at night, and may be left drifting for a considerable length of time (up to 18 hours) before retrieval, which is done by means of a powered hauler at a speed of approximately one knot. During hauling, vessel manoeuvrability is severely restricted and, in the event of an emergency, the line may be dropped and hauled in at a later stage.

Figure 5.28 Typical Configuration of Long-Line Gear Targeting Pelagic Species (Left)



Note: This figure also includes a photograph of mainline with dropper line and trace line (upper right) and photograph of typical high seas long-line vessel (lower right).

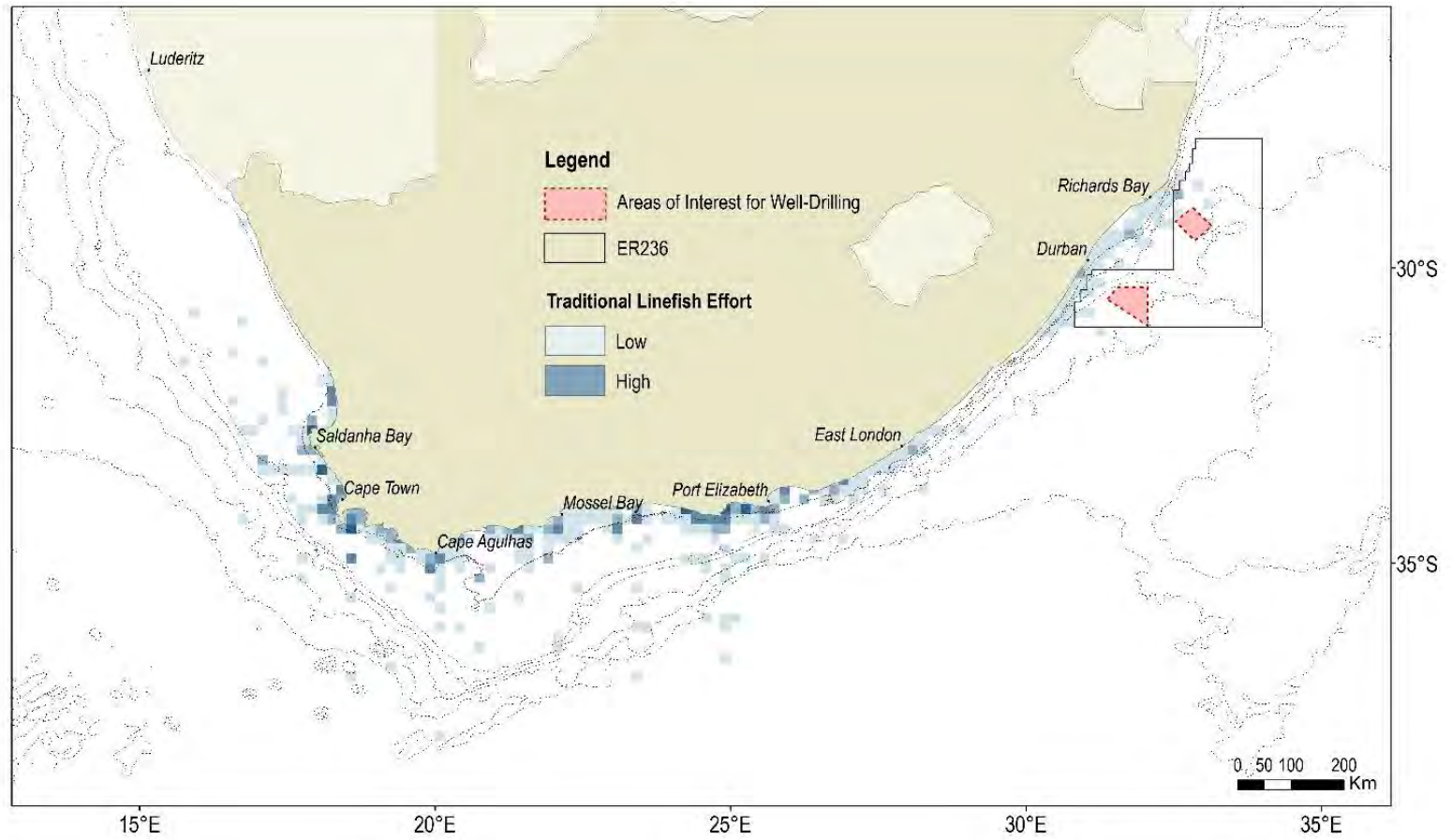
Source: Capmarine, 2017

Traditional Line Fish

The traditional line fishery is the country's third most important fishery in terms of total tons landed and economic value. It is a long-standing, nearshore fishery based on a large assemblage of different species. Within the Western Cape the predominant catch species is snoek (*Thyrsites atun*) while other species such as Cape bream (hottentot) (*Pachymetopon blochii*), geelbek (*Atractoscion aequidens*), kob (*Argyrosomus japonicus*) and yellowtail (*Seriola lalandi*) are also important. Towards the East Coast the number of catch species increases and includes resident reef fish (*Sparidae* and *Serranidae*), pelagic migrants (*Carangidae* and *Scombridae*) and demersal migrants (*Sciaenidae* and *Sparidae*). The fishery is widespread along the country's shoreline from Port Nolloth on the West Coast to Cape Vidal on the East Coast (Figure 5.29). Effort is managed geographically with the spatial effort of the fishery divided into three zones. Most of the catch (up to 95 percent) is landed by the Cape commercial fishery, which operates on the continental shelf from the Namibian border on the West Coast to the Kei River in the Eastern Cape. Fishing vessels generally range up to a maximum offshore distance of about 70 km, although fishing at this outer limit and beyond is sporadic (C. Wilke, pers. comm¹). The spatial distribution of line-fishing effort coincides with inshore areas of Block ER236.

¹ Mr C. Wilke (christopherW@daff.gov.za) is the chief technician at DAFF and is the principle contact for linefish data collation.

Figure 5.29 Spatial Distribution of Fishing Effort Expended by Traditional Line-Fish Sector



Source: Capmarine, 2017

Crustacean Trawl Fishery

South Africa's crustacean trawl fishery operates exclusively within the province of KZN. The fishery consists of inshore and offshore sectors which differ according to their targeted species, areas of operation and gear types. The fishery is managed using a Total Applied Effort (TAE) strategy, which limits the number of vessels permitted to fish on the inshore and offshore grounds. There are currently five vessels operating within the inshore grounds with another two vessels restricted to working in the offshore grounds only.

The KZN prawn trawler fleet comprises steel-hulled vessels ranging in length from 25 to 40 m and up to a Gross Registered Tonnage (GRT) of 280 tons. All are equipped with GPS, echosounders, radar and VHF/SSB radio. Most vessels are single otter trawlers, deploying nets from the stern or side at a speed of two to three knots. Trawl net sizes range from 25 m to 72 m footrope length, with a minimum mesh size of 60 mm. The duration of a typical trawl is four hours. Trip lengths range from three to four weeks and vessels may carry a crew of up to 20.

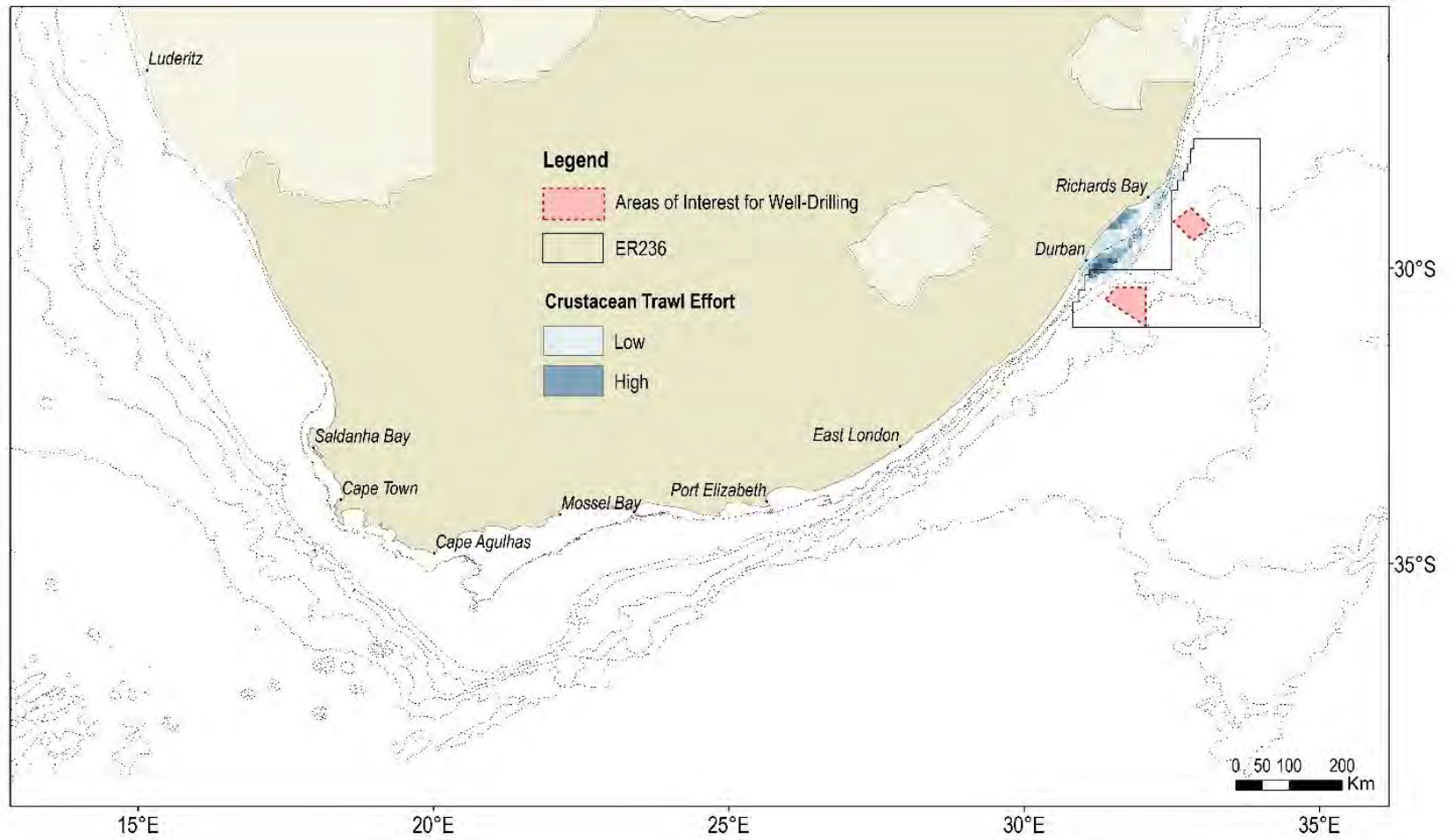
The inshore fishery is based on white prawns (*Fenneropenaeus indicus*), tiger prawns (*Penaeus monodon*) and brown prawns (*Metapenaeus monoceros*) which occur on the shallow water mud banks along the north-eastern coast of KZN. There are few areas within the habitat distribution of penaeid prawns that are suitable for trawling due to the steep drop off of the continental shelf on the East Coast. The inshore fishery operates on the Tugela Bank in water depths of up to 50 m and within 10 nautical miles (approximately 18.5 km) of the shore. There is a seasonal closure of the Tugela Bank grounds in order to minimise high bycatch levels, therefore trawlers operate only within these inshore grounds during the period March to August. During summer months activity shifts northwards towards St Lucia, where the fishery targets bamboo prawns (*Penaeus japonicus*) in addition to the previously-mentioned species. The prawn species on which the inshore fishery is based are fast-growing and are dependent on estuarine environments during the early phase of their life cycle. As juveniles they recruit onto the mud banks where they mature and reproduce. The catch composition within the fishery typically comprises 20 percent prawn species, while approximately 10 percent of the remainder of the catch is also retained for its commercial value and includes crab, octopus, squid, cuttlefish and linefish. The remainder of the catch is discarded.

The deep water fishery operates between water depths of 100 m and 600 m from Amanzimtoti in the south to Cape Vidal in the north, covering approximately 1,700 km² along the edge of the continental shelf. The boundary between the delimitation of offshore and inshore fisheries is about seven nautical miles (12.9 km) from the shore. Offshore trawling takes place year-round. Targeted species include pink (*Haliporoides triarthus*) and red prawns, langoustines (*Metanephrops andamanicus* and *Nephropsis stewarti*), red crab (*Chaceon macphersoni*) and deep water rock lobster (*Palinurus delagoae*).

Catches are packed and frozen at sea and landed at the ports of Richards Bay or Durban.

Figure 5.30 indicates the location of fishing grounds in relation to the Block ER236. There is a potential overlap of the crustacean trawl fishery with the Block ER236.

Figure 5.30 Spatial Distribution of Effort Expended by the Crustacean Trawl Fishery



Source: Capmarine, 2017

5.4.5

Marine Traffic

A large number of vessels navigate along the East Coast on their way around the southern African subcontinent. The majority of this boat traffic, including commercial and fishing vessels, remains relatively close inshore on the East Coast. North- and south-bound cargo vessels usually remain over the mid-shelf (100 m isobath). In contrast, tankers and bulk carriers remain further offshore, unless needing to move inshore to avoid extremely rough conditions that develop in the Agulhas Current. Block ER236 may overlap with the routes taken by tankers and bulk carriers. The supply vessels may interact with the inshore vessel traffic due to the collection of supplies from the Port of Richards Bay or the Port of Durban. Important East Coast commercial harbours include Port Elizabeth, East London, Durban and Richards Bay.

5.4.6

Recreational Uses

Recreational use of the East Coast marine environment involves both consumptive and non-consumptive uses. The former involves coastal and boat-based users removing marine resources for their own consumption (eg recreational fishing), while the latter involves users making use of the marine environment without removing any marine resources from the area.

Consumptive Uses

Consumptive uses of marine resources along the East Coast includes recreational shore and boat-based anglers (Brouwer *et al.*, 1997), spearfishers (Mann *et al.*, 1997), divers collecting subtidal invertebrates, and exploiters of intertidal organisms. The recreational use of marine resources along the East Coast typically occurs within inshore waters in the vicinity of coastal towns and holiday resorts. As the northern area of interest is located a minimum of 62 km offshore and the southern area of interest a minimum of 65 km offshore, it is unlikely that the proposed exploration drilling activity will interfere with onshore recreational users. There is however a possibility that the offshore recreational boat-based fishing activities could be affected if they travel offshore and into the Block ER236.

Non-Consumptive Uses

Non-consumptive utilisation of the marine environment along the East Coast includes water sports such as surfing, boat sailing, power boating, diving, and nature watching and beach recreation.

As noted above, Block ER236 is located from 20 km offshore and thus sailing/boating activities are unlikely to occur within Block ER236. However, there is a possibility of encountering sailing vessels passing into or out of South African waters.

Exploration activities are being undertaken in neighbouring oil and gas blocks including the following which are currently under Exploration Right:

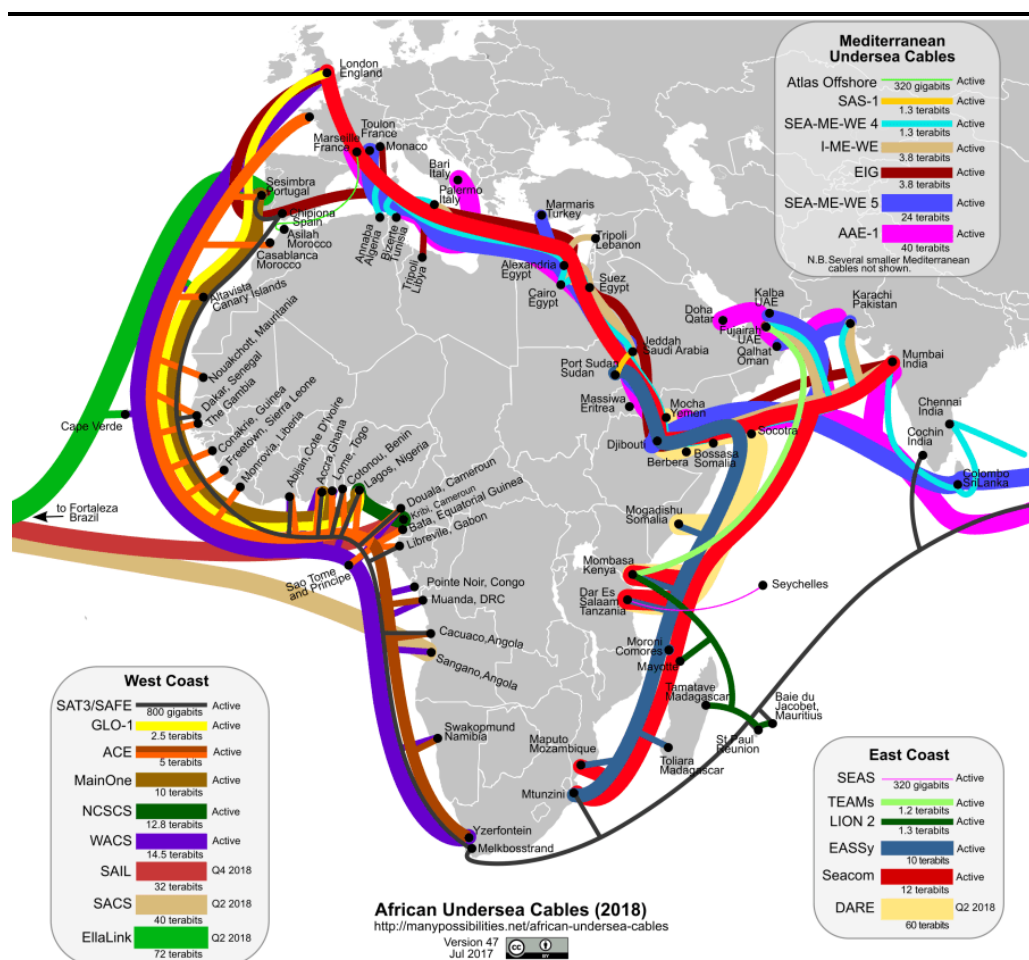
- Tugela South operated by EMEPSAL to the north-west.
- DeepWater Durban operated by EMEPSAL to the south.
- Silverwave deepwater block to the east.

No mineral prospecting activities are currently being undertaken within the Block ER236 which is situated in deep water. Although some mineral prospecting has taken place in South African waters, commercially viable ore has not been found.

Submarine Cables

There are a number of submarine telecommunications cable systems in South African waters (Figure 5.31). The SAFE, EASSy and Seacom cables land at Mtunzini, located approximately 40 km south of Richards Bay. Both the EASSy and Seacom cables may pass through Block ER236.

Figure 5.31 Submarine Cables



Source: <https://manypossibilities.net/african-undersea-cables/>

Table 5.4 Summary of Key Sensitivities

Feature	Description
Agulhas Current	<ul style="list-style-type: none"> • The Agulhas Current forms between 25° and 30° S, its main source coming from recirculation in a South-West Indian Ocean subgyre. • It flows southwards at a rapid rate following the shelf edge along the East Coast, before retroflecting between 16° and 20° E. It is a well-defined and intense jet some 100 km wide and 2,300 m deep. • Current speeds of 2.5 m/s or more have been recorded.
Seabed features and benthic habitat	<ul style="list-style-type: none"> • The AOI for well drilling lies east of the Natal Bight in >1,500 m water depth. • The southern point of the northern area of interest overlaps with a portion of the Goodlad Canyon. • The Goodlad Canyon differs significantly in morphology from those in northern KZN, where coelacanths have been reported and therefore it is unlikely that coelacanths will be found here. • There is evidence from the seismic data collected in the northern area of interest of deep water canyons being present in the center of the area. • In the northern area of interest for well drilling Southwest Indian Upper and Lower Bathyal benthic habitats are found, whereas Southern Indian Lower Bathyal benthic habitat dominates in the southern area of interest, both of which have been assigned an ecosystem threat status of 'least threatened' in the SANBI 2011 National Biodiversity Assessment. • The benthic communities within these habitats are generally ubiquitous throughout the southern African East Coast region, being particular only to substratum type and/or depth zone.
Deep Water Corals	<ul style="list-style-type: none"> • The occurrence of deep water corals in Block ER 236 and the areas of interest are unknown.
Whales and Dolphins	<ul style="list-style-type: none"> • There are 36 species of cetaceans that are likely to be found within Block ER236. Of the 36 species, the Antarctic Blue whale is 'critically endangered', the Indo-Pacific humpback dolphin, fin whale and sei whale are considered 'endangered' and the Ifafi-Kosi Bay sub-population of the Indo-Pacific bottlenose dolphin, Sperm whale and Bryde's whale (inshore population) are considered 'vulnerable' in the IUCN South African Red Data book List Assessment. • The most common species within the areas of interest (in terms of likely encounter rate not total population sizes) are likely to be the common bottlenose dolphin, Indo-pacific bottlenose dolphin, short-finned pilot whale and humpback whale. • ER236 lies within the migratory route of Humpback (Least Concern) and Southern Right (Least Concern) whales. <ul style="list-style-type: none"> ○ Southern right whales will pass through Block ER236 in July and August and again on their southward migration in October/November. ○ Humpbacks have a bimodal distribution off the East coast, most reaching southern African waters around April, continuing through to September/October when the southern migration begins and continues through to December and as late as February. The calving season for Humpbacks extends from July to October, peaking in early August.

Feature	Description
Marine Turtles	<ul style="list-style-type: none"> • Five species of turtle are known to occur along the East Coast: leatherback, which is most frequently sighted, and the loggerhead, green, olive ridley and hawksbill turtles. In the IUCN Red listing, the hawksbill turtle is described as 'Critically Endangered', green turtle is 'Endangered' and leatherback, loggerhead and olive ridley are 'Vulnerable' on a global scale. • Both the leatherback and the loggerhead turtle nest on the beaches of the northern KZN coastline (St Lucia, iSimangaliso) between mid-October and mid-January. Hatchlings are born from mid-January through to mid-March when the Agulhas Current is warmest. Once hatchlings enter the sea, they move southward following the Agulhas Current and are thought to remain in the southern Indian Ocean gyre for the first five years of their lives. • The inshore regions of the northern portion of Block ER236, coincide with the inter-nesting migrations for leatherbacks, but the northern area of interest lies offshore of the inter-nesting range. • Leatherback and loggerheads are likely to be encountered in Block ER236 during their foraging migrations.
Marine Protected Areas	<ul style="list-style-type: none"> • Block ER236 does not overlap with the existing iSimangaliso Wetland Park. • Although Block ER236 overlaps with the proposed Protea Banks MPA and the extension of the iSimangaliso Wetland Park MPA, there is no overlap of the areas of interest with the proposed protection areas. • It should be noted that sections of the original ER236 which overlapped with the existing iSimangaliso and Aliwal Shoal MPA's were relinquished during the Exploration Right renewal process in 2016.
Fish spawning, nursery and recruitment areas	<ul style="list-style-type: none"> • The areas of interest are offshore of the major fish spawning and migration routes and ichthyoplankton abundance is likely to be low. • The sardine run along the Eastern Cape coast and up to southern KZN is inshore of the area of interest. • Pilchard eggs are inshore of the areas of interest.
Long Line Fishing	<ul style="list-style-type: none"> • The areas of interest overlaps with the long line fishing area which targets primarily tuna but also swordfish. • Block ER236 overlaps with the crustacean trawl fishery.
Marine Traffic	<ul style="list-style-type: none"> • The Project Area may overlap with the routes taken by tankers and bulk carriers. The supply vessels may interact with the inshore vessel traffic due to the collection of supplies from the Port of Durban. • Important East Coast commercial harbors include Port Elizabeth, East London, Durban and Richards Bay.
Recreational users	<ul style="list-style-type: none"> • The recreational use of marine resources along the East Coast typically occurs within inshore waters in the vicinity of coastal towns and holiday resorts.

6.1

INTRODUCTION

An Environmental Impact Assessment (EIA) is a systematic process that identifies and evaluates the potential impacts (both positive and adverse) a proposed project may have on the physical, biological, chemical, and social environment. Mitigation/ enhancement measures are subsequently developed that will be incorporated in order to eliminate, minimise or reduce adverse impacts and enhance positive impacts.

As described in *Chapter 2*, the process in South Africa is regulated by the NEMA Environmental Assessment Regulations (GNR R982/2014, as amended 2017). The overall Scoping and Environmental Impact Reporting (EIR) process is illustrated in *Figure 6.1*.

The EIA process that is being undertaken for the project is aligned with the requirements of the 2014 EIA Regulations (as amended).

Figure 6.1 Environmental Impact Assessment Process



An EIA process is initiated by the Scoping Phase, as shown in *Figure 6.1*. During the Scoping Phase, the Terms of Reference for the full EIA is formulated and requirements from the authorities clarified, and potential issues and concerns identified via consultation. A pre-application initial notification period was undertaken for this EIA process in order to announce the project, provide initial information on the project and gather initial concerns. This process has assisted in developing the Interested and Affected Party (I&AP) database.

After completion of the Scoping Phase, detailed specialist studies will be undertaken in order to address issues identified during the Scoping Phase. Specialists are expected not only to provide baseline information in their particular field of expertise for the Project Area, but also to identify which project actions will result in significant impacts. Specialists will recommend ways in which adverse impacts could be mitigated to reduce their severity, and positive impacts enhanced.

Draft reports are submitted for public review, during which time ERM present the key findings to all I&APs. All comments made by I&APs are captured in a Comments and Response Report (CRR), and in this report responses to all issues and concerns raised during the public review period are provided.

All recommendations cited in the EIA report must be detailed in an Environmental Management Programme report (EMPr), which defines the mitigation/ enhancement actions to be implemented. EMPrs are recognised as important tools for the sound environmental management of projects.

A principal objective of the Scoping Phase is to identify the key environmental, social and health issues and those project activities with the potential to contribute to, or cause, impacts to the environmental and social receptors.

At the Scoping Phase, the key issues are identified (often together with input from key stakeholders) and understood to a level which allows the definition of the Plan of Study for the EIA.

Issues that are not relevant are scoped out. This enables the resources for the EIA to be focused on collecting required information and identifying significant impacts while carrying out specialist studies and stakeholder engagement activities in an effective and efficient manner.

Specifically, the objectives of the Scoping Phase are to:

- Understand the legislative context and establish a description of baseline conditions;
- Identify project alternatives and preferred options for the proposed development;
- Identify stakeholders and plan or initiate communication with these stakeholders so as to gather issues of concern;
- Identify potential significant impacts; and
- Develop the Plan of Study for the EIA which sets out the proposed approach to the EIA, potential impacts to be evaluated and methodology to be used.

The following steps have been undertaken as part of the Scoping Phase, and are described below:

- Pre-application correspondence with the PASA;
- Desktop review of available information;
- Preparation of the draft Scoping Report;
- Submission of application form;
- Release of draft Scoping Report for public comment; and
- Finalisation of Scoping Report for submission to DEA.

6.3.1 *Desktop Review*

An initial review of available information was conducted. The desktop review included the following tasks:

- Initial review of relevant legislative and guidance documents;
- Identification and review of secondary data;
- Development of an outline description of the planned project activities; and
- Development of a plan for stakeholder engagement.

6.3.2 *Public Participation*

Details of the public participation process are provided in *Section 6.6*.

6.3.3 *Scoping Report*

In accordance with the regulatory requirements stipulated in GNR 984 of the EIA Regulations, 2014 (as amended), this draft Scoping Report (including Plan of Study), has been compiled as part of the EIA process.

The Scoping Report will be made available to stakeholders through the project website, selected libraries, and hard copies provided on request for a period of 30 days. After the 30 day public comment period, a CRR will be compiled and included in the final report along with any other updates or changes. The final Scoping Report (including Plan of Study) will be submitted to the Petroleum Agency South Africa (PASA) for their consideration.

Registered I&APs will be notified once the final Scoping Report has been submitted. The CRR will be included in the final Scoping Report and distributed to registered I&APs.

6.3.4 *Submission of Application Form*

The completed EIA application form will be submitted to the competent authority together with the draft Scoping Report. In terms of the 2014 EIA Regulations (as amended) the final Scoping Report is to be submitted to the competent authority within 43 days of submission of the application form.

6.4 *SPECIALIST STUDY PHASE*

A number of specialist studies have been identified to address key issues of concern. The findings of these studies will be incorporated into the Environmental Impact Assessment Report (EIR) that will close out the Integration and Assessment Phase. Further information related to the approach to the specialist studies and the impact assessment is contained in the Plan of Study for EIA in *Chapter 8*.

6.5 *INTEGRATION AND ASSESSMENT PHASE*

The final phase of the EIA is the Integration and Assessment Phase, which is described in detail in the Plan of Study for EIA (*Chapter 8*).

The assessment of impacts proceeds through an iterative process considering three key elements:

- a) Prediction of the significance of impacts that are the consequence of the proposed development on the natural and social environment.
- b) Development of mitigation measures to avoid, reduce or manage the adverse impacts and enhance positive impacts.
- c) Assessment of residual significant impacts after the application of mitigation measures.

The draft EIR will be made available to I&APs for a 30 days public comment period. Registered and identified I&APs will be notified of the release of the draft EIR and where the report can be reviewed.

A public meeting will be held where the findings of the specialist studies and outcomes of the Integration and Assessment Phase will be presented and discussed.

Comments received on the draft EIR will be assimilated and the EIA project team will provide appropriate responses to all comments. A Comments and Responses Report will be included in the final EIR, which will be submitted to PASA for decision-making.

All registered I&APs will be notified when an Environmental Authorisation has been issued by the DMR. A 90 day (maximum time should an appeal be submitted) appeal period will follow the issuing of the Environmental Authorisation.

Table 6.1 *Proposed Timeframe for the EIA*

Activity	Timing
Final Scoping Report Submission	March 2018
Scoping Report Approval	April 2018
Disclosure of Draft EIA Report	May 2018
Submission of Final EIA Report	July 2018
Environmental Authorisation	November 2018

6.6 *PUBLIC PARTICIPATION DURING SCOPING*

6.6.1 *Public Participation Objectives*

Public consultation is an inclusive and culturally appropriate process which involves sharing information and knowledge, seeking to understand the concerns of others and building relationships based on collaboration. It allows stakeholders to understand the risks, impacts and opportunities of the project in order to achieve positive outcomes.

The public participation process is designed to provide information to and receive feedback from I&APs throughout the EIA process, thus providing organisations and individuals with an opportunity to raise concerns, make comments and suggestions regarding the proposed project. By being part of the assessment process, stakeholders have the opportunity to influence the project layout and design, input into mitigation measures and technical solutions as well as the Plan of Study for the EIA.

The main objectives of public participation are:

- To ensure that adequate and timely information is provided to those potentially affected by the project;
- To provide these groups with sufficient opportunity to voice their opinions and concerns; and

- To ensure that comments are received in a timely manner so that they can be taken into account in project decisions.

6.6.2 *Legislative Context*

Public participation with regards to EIA's in South Africa is determined by the principles of the National Environmental Management Act (NEMA) (Act 107 of 1998, as amended) and elaborated upon in 'GN 657: Guideline 4: Public Participation' (Department of Environmental Affairs and Tourism, 19 May 2006), which states that: "Public participation process means a process in which potential interested and affected parties (I&APs) are given an opportunity to comment on, or raise issues relevant to, specific matters."

Public participation is required for an Environmental Authorisation process in terms of the EIA Regulations GN R.982 (December 2014, as amended).

6.6.3 *Public Participation Activities*

Table 6.2 details the public participation tasks that have been undertaken to date. More details around the initial consultation and the pre-scoping engagement activities are provided after the table.

Table 6.2 *Public Participation Tasks*

Activity	Description and Purpose
Pre-Application	
Preparation of a preliminary stakeholder database	A preliminary database has been compiled of authorities (local and provincial), Non-Governmental Organisations, neighbouring landowners and other key stakeholders (refer to <i>Annex B</i>). This database of registered I&APs will be maintained and updated during the ongoing EIA process.
Preparation and Distribution of a Background Information Document (BID)	BIDs were distributed via email/post to all I&APs on the stakeholder database. See <i>Annex B</i> . The BID provides an introduction to the project and the EIA process.
Advertisement of the Project	The project was advertised in four newspapers; The Mercury and Isolezwe (in Zulu) with distribution around Durban, and The Zululand Observer and Ilanga Newspaper (in Zulu), with distribution around Richards Bay. The dates of distribution were as follows: <ul style="list-style-type: none"> • The Mercury - 18 September 2017 • The Zululand Observer - 18 September 2017 • Ilanga (advert in isiZulu) - 21 September 2017 • Isolezwe (advert in isiZulu) - 21 September 2017 See proof of advertisement in <i>Annex B</i> .

Activity	Description and Purpose
Erection of Site Notices	<p>Site notices have been placed at the following locations:</p> <p>eThekweni Municipality libraries:</p> <ul style="list-style-type: none"> • Durban North; • Durban Central Lending; • Amanzimtoti; • Warner Beach; • Isipingo Beach; • Umkomaas; and • Tongaat Beach. <p>uMhlathuze Local Municipality:</p> <ul style="list-style-type: none"> • Richards Bay Municipality; and • Richards Bay Library. <p>Entrance to the Port of Richards Bay.</p>
Development of an Initial Comments and Response Report	All comments received during the initial consultation period were recorded into a Comments and Response Report. See included in <i>Annex C</i> .
Scoping Phase	
Release of draft Scoping Report for Public Comment	<p>The draft Scoping Report will be released for public comment. An advert will be published, notifications will be sent to all stakeholders on the database and the report will be made available online and in the following libraries:</p> <ul style="list-style-type: none"> • Durban Public Library • Richards Bay Public Library • <u>Port Shepstone Public Library</u> <p>All comments received will be included in the final Scoping Report.</p> <p><u>*It should be noted that an earlier version of the Draft Scoping Report was released for comment on 27 October 2017. Due to a change in project scope a notification was sent out on 7 November 2017 to notify stakeholders that the report would be re-released (this report) for a full 30 day comment period in early 2018.</u></p>
Public Engagement Meeting	Public engagement meetings are planned to be held in Richards Bay, Durban <u>and Port Shepstone</u> to present the proposed project and solicit input from stakeholders into the scoping process. Presentation, attendance registers and meeting notes will be included in the Final Scoping Report.
EIA Phase	
Release of draft EIR and EMP for Public Comment	The draft EIR and EMP document will be made available for a 30-day comment period to stakeholders and the relevant authorities. A notification will be sent to all registered I&APs on the project database. This letter will invite I&APs to comment on the draft EIR. Newspaper adverts will be placed in local newspapers notifying stakeholders of the availability of the draft EIR report for review and inviting them to public meetings. All comments received, along with responses will be included in the final EIR.
Public Engagement Meetings	Public engagement meetings will be held during the comment period in order to present the findings of the EIA to stakeholders and receive their feedback. Presentation, attendance registers and meeting notes will be included in the final Scoping Report.
Notification of Environmental Authorisation	I&APs will be notified of the Environmental Authorisation and the statutory appeal period.

7.1 INTRODUCTION

A key part of the Scoping Phase is a preliminary analysis of the ways in which the project may interact (positively and negatively) with environmental (including physical and biological receptors) and social resources or receptors. The impacts that are identified as potentially significant during the Scoping process provide focus for the studies undertaken during the EIA Phase. Each of the potentially significant impacts will be discussed and assessed in more detail in the EIR.

In order to complete the Scoping Phase, the EIA team has drawn upon:

- knowledge of sources of potential impacts associated with oil and gas exploration projects;
- an identification of the main environmental and social resources and receptors from the review of existing published data sources; and
- the results of the initial consultation.

This Chapter provides a preliminary identification and evaluation of the environmental and social impacts of the project.

7.2 RESOURCES AND RECEPTORS

For this project the following main resources and receptors were determined to be relevant.

- *Physical Environment*: ambient air quality, global climate, noise levels, light, seabed features and geology, seabed sediment and characteristics, marine water quality.
- *Biological Environment*: benthic communities, deepwater corals, seabirds, fish and pelagic flora and fauna, marine mammals, marine turtles, protected areas/critical habitats, mangroves, marine flora.
- *Human Environment*: community health, community safety and security; local community, workforce, government stakeholders, infrastructure (eg submarine cables) marine traffic and transportation; fishing, navigation, cultural heritage, tourism/recreation, employment and income, utilities, local economy, visual, occupation health and safety.

7.3

OUTCOME OF THE SCOPING PROCESS AND IMPACT IDENTIFICATION MATRIX

The interactions of project activities with resources and receptors were identified during the Scoping Phase.

Activities that will occur during the project (mobilisation, operation and decommissioning) were identified (*Table 7.1*).

The evaluation of the significance of an interaction between an activity and an environmental or social resource or/receptor was made and significance was rated according to the following scale:

	No interaction
I	Interaction with the environment or receptor which is <u>not</u> expected to be significant
S	Interaction with the environment or receptor that <u>could</u> be significant
P	Positive interaction

Table 7.1 Summary of Impact Sources and Receptors

Project Activity	ENVIRONMENT & RECEPTORS																													
	Physical										Biological					Human														
	Ambient Air Quality	Global Climate	Noise Levels (Airborne and Underwater)	Light	Seabed features and geology	Seabed sediment and characteristics	Marine Water Quality	Benthic Communities	Sensitive Seabed Features (incl deepwater corals)	Seabirds	Fish & Pelagic Flora & Fauna	Marine Mammals	Marine Turtles	Protected Areas/ Critical/ Sensitive Habitat	Marine Flora	Community Health	Community Safety & Security	Local Community	Workforce	Government Stakeholders	Infrastructure (eg submarine cable)	Marine Traffic & Transportation	Fishing	Navigation	Cultural Heritage	Tourism/ Recreation	Employment & Income	Utilities (eg water, onshore waste facilities)	Local Economy	Visual Impact & Aesthetic
1 Vessel activities																														
1.1 Presence supply and support vessels from onshore logistics base			i																											
1.2 Power generation by vessels	i	s																												
1.3 Disposal of non hazardous wastes																														
1.4 Disposal of hazardous wastes																														
1.5 Discharge of oily water (eg deck drainage, bilge water, machinery space)																														
1.6 Discharge of sanitary effluents (black and grey water)																														
1.7 Disposal of galley waste																														
1.8 Ballast from support and supply vessels (potentially international)																														
1.9 Provision of potable water																														
1.10 Bunkering	i	i																												
1.11 Local labour, equipment and services supply																														
2 Drilling																														
2.1 Drillship positioning																														
2.2 Physical presence drillship, wellhead and riser																														
2.3 Power generation on drillship	i	s																												
2.4 Cooling water system																														
2.5 Provision of potable water to Person on Board (POB) (discharge from reverse osmosis plant)																														
2.6 Provision of water for muds																														
2.7 Disposal of excess Water Based Drilling Fluid (WBDF) at surface																														
2.8 Discharge of top hole cuttings at seabed																														
2.9 Disposal of LTOBM ROC overboard																														
2.10 Disposal of excess cement																														
2.11 Well logging including Vertical Seismic Profiling (VSP). Logging while drilling and wireline logging																														
2.12 Discharge of oily water (eg deck drainage, bilge water, machinery space)																														
2.13 Discharge of sanitary effluents (black and grey water)																														
2.14 Disposal of galley waste																														
2.15 Disposal of non hazardous wastes																														
2.16 Disposal of hazardous wastes																														
2.17 Ballast from drillship (potentially international)																														
2.18 Helicopter support	i	i	i																											
2.19 Local labour, equipment and services supply, incl. crew changes																														
2.20 Well clean-up	i	i	i																											
2.21 Well testing appraisal well	i	s	i	i																										
2.22 Well abandonment																														
3 Accidental/ Unplanned Events																														
3.1 Small (Tier 1) oil/ chemical spill, eg hose failure during bunkering																														
3.2 Medium (Tier 2) oil spill, eg vessel collision diesel spill																														
3.3 Blowout (Tier 3 oil) at seabed	i	s																												
3.4 Dropped Objects																														
3.5 Helicopter incidents	i	i																												
3.6 Piracy for mob/ demob																														
3.7 Emergency disconnect riser																														

Potentially significant interactions are summarised in this section. The impacts associated with the project will probably be narrower in scope than what is identified below because mitigation measures will be built into the project design. However, the impact identification process is intended to be broad at this stage to consider a wide range of possibilities and inform project mitigation priorities.

Based on the results of the scoping workshop the key issues (denoted with an amber colour in the scoping matrix) described in *Table 7.2* were identified as being potentially significant. Non-significant issues are presented in *Table 7.3*.

Table 7.2 Potential Impacts from Planned Activities and Unplanned/Accidental Events

No.	Issue	Activities	Scoping Results
1	Planned Activities		
1.1	Seawater and sediment quality degradation /contamination and impacts on marine fauna	Wastewater discharges from the drillship, supply and support vessels	Operational discharges from the drillship and all the other project vessels could have an impact on the water quality of the area and therefore potentially impact fish, marine mammals and turtles present in the Project Area. This impact will be assessed further in the EIR including a discussion around the mitigation of this impact by ensuring all vessel discharges are compliant with MARPOL 73/78 Annex I, Annex V and Annex IV.
		Disposal of cuttings to the seafloor and overboard during drilling	Cuttings discharged both at the seabed (prior to the installation of the riser) and overboard (after the installation of the riser) will generate a plume of sediment which would disturb the marine habitats, benthic communities and marine fauna present in the area. This issue will be assessed further in the EIR, which will include a discussion around the treatment and base fluid content of these muds and cuttings prior to disposal.
1.2	Disturbance of marine organisms	<ul style="list-style-type: none"> Noise generated by drillship dynamic positioning Noise and vibration generated by drilling Light generated by the drillship 	Scoping determined that the underwater noise generated during the drilling works and the presence of vessels could lead to disturbances to marine habitats and fauna, especially to marine mammals and fish. The impact of underwater noise and vibrations on marine fauna will be assessed further in the EIR.
1.3	Disturbance to fishing (commercial and subsistence)	<ul style="list-style-type: none"> Drillship, supply, survey and support vessels transit to and from the Richards Bay/Durban Port Presence of drillship at drilling location (including 500 m exclusion zone) 	<p>Both the Port of Richards Bay and the Port of Durban are large, commercial, high traffic ports and as such the additional vessel traffic for this project will be insignificant and will not be a major change from the current status quo in terms of impact to fishing activities.</p> <p>Long-line commercial and traditional line fishing activities occur within the area of interest and may therefore be impacted by the presence of the drillship at the drilling location and the enforcement of the 500 m exclusion zone.</p> <p>The extent to which fishing activities could be interrupted or placed at risk as a result of the drilling and vessel activities of this project will be assessed further in the EIR.</p>
1.4	Climate change	Burning of fossil fuels	There are climate change implications from the burning of fossil fuels by the project vessels. The significance of this impact will be assessed further in the EIR.

No.	Issue	Activities	Scoping Results
2	Unplanned/ Accidental Events		
2.1	Marine pollution and impacts on marine fauna Community and workforce health and safety	Vessel collisions/ electrical fires on-board etc.	<p>The risk of a vessel collision due to the project vessel activities is low if appropriate mitigation measures are put in place and included in the EMPr for this project.</p> <p>Although the risk is low, the impact of a diesel spill due to a vessel collision between the project vessels and other vessels (eg fishing and commercial) on sensitive receptors (fish, marine mammals, turtles etc.), coastal and marine habitats, fishing and other users will be assessed further in the EIR.</p> <p>The impact of a vessel collision on the health and safety of the workforce and other users of the sea will also be assessed further in the EIR.</p>
2.2	Marine pollution and impacts on marine fauna and fishing Community and workforce health and safety	Vessel collision between a drillship and a supply boat	<p>The risk of a vessel collision between the drillship and supply vessels is low if appropriate mitigation measures are put in place and included in the EMPr for this project.</p> <p>Although the risk is low, the impact of a diesel spill due to a vessel collision between the drillship and supply vessel on sensitive receptors (fish, marine mammals, turtles etc.), coastal and marine habitats, fishing and other users will be assessed further in the EIR.</p> <p>The impact of this type of vessel collision on the health and safety of the workforce and other users of the sea will also be assessed further in the EIR.</p>
		Blowout	<p>The risk of a blowout for the project can be minimised by ensuring the blowout management protocol is included in the EMP and Oil Spill Response Plan for this project.</p> <p>The impact of a blowout of oil/gas will result in marine pollution and disturbance of sensitive receptors and marine and potentially coastal habitats. It will also impact the health and safety of the workforce and result in decreased air quality in the region of the blowout. The significance of the impact of a blowout will therefore be assessed further in the EIR.</p>
2.3	Community and workforce health and safety	Dropped objects	Dropped objects from the project vessels could lead to significant health and safety risks, the mitigation and prevention of these incidents needs to be included in the EMP for this project to minimise the risk. The significance of this impact will therefore be assessed further in the EIR.
		Helicopter incidents	The prevention of helicopter accidents during crew transfers will be included in the EMPr for this project in order to minimise the risk. The significance of this impact will therefore be assessed further in the EIR.

Table 7.3 Non Significant Issues

No.	Issue	Activities	Scoping Results
1			Planned Activities
1.1	Community Health, Safety & Security	Interactions of foreign/ migrant workers with local residents	Although Scoping determined that the project will employ workers during all the phases of the project, due to the nature of the work, the majority of the employees onboard the drillship will be expatriate staff who may transit through Durban or Richards Bay for a short period of time. Shore base employees are likely to be mainly current employees of existing logistics companies based in these areas. Given the short-term nature of the project and the limited workers to be employed this impact was considered insignificant and will not be assessed further.
1.3	Local employment / income generation	Employment of labour and allocation of jobs Training / capacity building of local people	Eni has estimated that in the order of 10 jobs will be created for locals by this project. The project will use local labour as far as possible based on their existing skills and provide new employees with appropriate training. The temporary creation of local jobs and employment opportunities by this project and the associated possible positive impact on the economy is considered insignificant and will therefore not be assessed further in the EIR.
1.4	Local economy	Trade with local suppliers for food, fuel, water, hotel, waste treatment and other supplies	Scoping determined that the project will result in trade with local suppliers for food, fuel, water, hotel, waste treatment and other supplies. This may result in a positive impact, however given the short-term nature of the benefit and the large-scale suppliers who likely be utilised this impact was considered insignificant and will not be assessed further.
1.5	Degradation of air quality	Vessels and helicopter atmospheric emissions Power generation on the drillship during drilling Bunkering	A reduction in air quality from the vessel and helicopter activities, power generation and bunkering are not expected to be significant in a regional context, or to cause human health impacts due to the temporary nature of the project, the well mixed air shed of the offshore environment and the distance of the project site to shore. Therefore this impact was considered not significant and will not be assessed further.
1.6	Community Health, Safety & Security	Noise from helicopters	The noise generated by helicopters for crew transfers will be over the Port of Richards Bay or Durban, helicopters will not fly over residential areas and therefore this impact was considered not significant and will not be assessed further.
1.7	Increase in non-hazardous and hazardous wastes disposal	Disposal of non-hazardous and hazardous wastes generated by the project activities at onshore disposal sites	The project will result in an increase in waste generated in the area. Wastes will be transported by vessels to the onshore supply base in Richards Bay or Durban for temporary storage prior to off-site disposal. Solid non-hazardous waste will be disposed of at a suitably licensed waste facility. Hazardous wastes will be treated/ disposed of at a licensed waste treatment/ disposal facility. Therefore this impact was considered not significant and will not be assessed further.

No.	Issue	Activities	Scoping Results
1.8	Fresh water supply	Provision of drinking water for the crew on all vessels Storage of water at onshore base	Water will be provided via a reverse osmosis plant onboard the project vessels, where required bottled water may be provided. Therefore this impact was considered not significant and will not be assessed further. Water stored at the onshore base for water supplies for the onshore staff will be sourced from the local municipality and will not have a significant impact.
1.9	Marine pollution and impacts on marine fauna	Discharge of well clean-up and well testing water	Following cessation of drilling activities, contaminant concentrations in seawater would be expected to return to background levels rapidly, with the assistance of currents and the mixing capacity of the water body (natural dispersion, dilution and assimilative capacity of water would be expected to minimise any impacts) and therefore have limited impacts on marine fauna. Impacts of well clean-up and testing water on water quality and marine fauna are therefore not expected to be significant and will not be assessed further.
		<u>Well logging</u> Logging while Drilling (LWD) and wireline logging (radioactive sources).	This will be a closed system and therefore there will be no interaction with the environment. Therefore this impact was considered not significant and will not be assessed further.
		Vertical Seismic Profiling (VSP) - either zero offset VSP or walk-away VSP	Standard industry mitigation measures will be implemented for VSP activities. This, in addition to the very short duration of the activity means that the impact is considered not significant and will not be assessed further.
		Disposal of excess cement	Already mixed excess cement will be disposed of overboard. Contaminant concentrations in seawater would be expected to return to background levels rapidly, with the assistance of currents and the mixing capacity of the water body (natural dispersion, dilution and assimilative capacity of water would be expected to minimise any impacts) and therefore have limited impacts on marine fauna. Therefore this impact was considered not significant and will not be assessed further.
1.10	Physical disturbance of seabed	Drilling	The impact of drilling on the seabed will be very localised and short-term. Therefore this impact was considered not significant and will not be assessed further.
1.11	Visual	Drillship	The drillship will be located more than 60 km offshore and therefore is very unlikely to be seen from the shore. Therefore this impact was considered not significant and will not be assessed further.
1.12	Community and workforce health and safety	Well abandonment	Wells drilled will be plugged and abandoned. Given that the water is deep and that the wellhead will be removed it is therefore not anticipated that the abandoned wells will have any impact on navigation or deep sea fishing. This impact is therefore considered not significant and will not be assessed further.

2	Unplanned/ Accidental Events		
2.1	Marine pollution and impacts on marine fauna	Small oil/chemical spills	Small chemical and oil spills on-board the vessel will be cleaned up immediately and adhere to the oil spill response plan and EMP. This means the impact of a small oil or chemical spill will not be significant and will not be assessed further.
2.2	Introduction of alien invasive species	Ballast from support and supply vessels (potentially international)	De- and re-ballasting of project vessels will only be undertaken in adherence to International Maritime Organisation (IMO) guidelines governing discharge of ballast waters at sea. The IMO states that vessels using ballast water exchange should, whenever possible, conduct such exchange at least 200 nm from the nearest land and in water of at least 200 m depth. 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 from the nearest land and preferably in water at least 200 m in depth. Based on the implementation of these measures the impact is considered insignificant and will not be further assessed.

8.1 INTRODUCTION

The purpose of the Impact Assessment Phase of an EIA is:

- to address issues that have been raised during the Scoping Phase;
- address and assess alternatives to the proposed activity in a comparative manner;
- address and assess all identified significant impacts; and
- establish mitigation measures.

A key outcome of screening and scoping activities undertaken to date (described in *Chapter 6*) is the Plan of Study (PoS) for the EIA.

This *Chapter* provides the proposed PoS for the EIA and is structured as follows.

- Overview of the Impact Assessment Phase;
- Specialist studies;
- Impact Assessment methodology;
- Proposed structure of the EIA Report (EIR); and
- Provisional schedule for the EIA process.

8.2 OVERVIEW OF IMPACT ASSESSMENT PHASE

Once public comments on the Scoping Report have been concluded, the Final Scoping Report will be submitted to PASA for consideration. This represents the end of the Scoping Phase of the EIA. The subsequent Impact Assessment Phase is described in more detail below.

8.2.1 Impact Assessment

Following the Scoping Phase of the project, the EIA team will:

- update and finalise the technical project description as further project details become available;
- conduct additional consultation and further refine the scope of the EIA as necessary;

- collect additional baseline data through desktop research to complete a comprehensive description of the environmental and social conditions;
- undertake an impact assessment of the project activities interactions with the key environmental and social resources and receptors;
- develop mitigation and enhancement measures and outline an Environmental Management Programme (EMPr) including an approach for monitoring;
- report the findings in a comprehensive EIR.

8.2.2 *Stakeholder Engagement Activities*

During the Impact Assessment Phase the following stakeholder engagement activities will be undertaken:

- The draft EIR and EMPr document will be made available for a 30-day comment period to stakeholders and the relevant authorities.
- A notification letter will be sent to all registered I&APs on the project database. This letter will invite I&APs to comment on the draft EIR.
- Newspaper adverts will be placed in local newspapers notifying stakeholders of the availability of the draft EIR report for review and inviting them to public meetings.
- A public meeting will be held during the comment period in order to present the findings to stakeholders.
- The final EIR will then be compiled and submitted to PASA for review and decision-making. All comments made during the comment period will be compiled in a comments and responses report in the final EIR.
- I&APs will be notified of the Environmental Authorisation and the statutory appeal period.

8.2.3 *Authority Interaction*

Authority consultation is integrated into the public consultation process, with additional one-on-one meetings held with the lead authorities where necessary. The competent authority (DMR, through PASA) as well as other lead authorities will be consulted at various stages during the EIA process.

A number of issues have been identified during this Scoping Study which require specialist studies to understand the potential impact in more detail. The following specialist studies have been identified to address the key issues and data gaps:

- Marine fauna;
- Fisheries;
- Oil Spill modelling; and
- Drill cuttings modelling.

The below table identifies the provisional Terms of Reference for each proposed specialist study.

Table 8.1 *Scope of Work for Specialist Studies*

Topic	Terms of Reference
Marine Fauna	<ul style="list-style-type: none"> • The baseline study of marine ecology will be based on secondary data and will include a description of the marine environment and habitats as well as marine fauna, especially sensitive species. • A general description of the physical environment will also be prepared. • The study will focus on sensitive aspects of the marine environment. This will include marine reserves and other sensitive locations. • It will also include sensitive species such as marine mammals, sea turtles, and sea birds. • Assessment of potential impacts on fisheries using prescribed impact rating methodology. • A description of any assumptions made and any uncertainties or gaps in knowledge. • Recommendation of mitigation measures, where appropriate. • The baseline description and impact assessment will be included into the EIA Report.
Fisheries	<ul style="list-style-type: none"> • A description of the existing baseline fisheries characteristics within Block ER 236 and the area of interest for well-drilling (distribution of fish stocks and commercial, subsistence and recreational fishing activities). • An introduction presenting a brief background to the study and an appreciation of the requirements stated in the specific terms of reference for the study. • Details of the approach to the study where activities performed and methods used are presented. • The specific identified sensitivity of fishing sectors related to the proposed activity. • Map/s superimposing the proposed area of interest for well-drilling on the spatial distribution of effort expended by each fishing sector (data: 2005 – 2016). • Calculation of proportion of fishing ground that coincides with the proposed affected area. • Assessment of potential impacts on fisheries using prescribed impact rating methodology. • A description of any assumptions made and any uncertainties or gaps in knowledge. • Recommendation of mitigation measures, where appropriate.
Oil Spill Modelling	<ul style="list-style-type: none"> • Physical and chemical environmental impacts on surface waters from potential hydrocarbon spills will be assessed using a comprehensive modelling approach. In the comprehensive modelling approach, a single model, GEMSS® (Generalized Environmental Modelling System for Surfacewaters), is used to determine the fate and transport of unplanned hypothetical oil spills. • The following scenarios will be assessed: <ul style="list-style-type: none"> • Scenario 1 - diesel spill associated with vessel collision happening either during drilling of wells; • Scenario 2 - release of NADF due to the accidental disconnection of the riser occurring

Topic	Terms of Reference
	<p>during the drilling phase</p> <ul style="list-style-type: none"> • Scenario 3 – blowout of crude oil at the wellhead on the seabed. • For each scenario, the “worst cases” will be determined using three different criteria: the conditions that result in the shortest time for oil to contact a shoreline, the case with the most amount of shoreline oiling, and the conditions in which the most amount oil spreads across the water surface. • Impacts will be assessed in terms of the probability of the presence of a visible hydrocarbon slick on the surface, probability of oil contacting shorelines, and dissolved aromatic concentrations in the water column. For the riser disconnect scenario, impacts will also include an evaluation of the suspended solids concentration and untreated NADF contamination on the sea floor using the GIFT module. • Results of the modelling will be provided as a stand-alone report, included as an annex to the main EIA report.
Drill Cuttings Dispersion Modelling	<ul style="list-style-type: none"> • Use of a global circulation model to represent the movement of currents, ocean temperatures, and salinity concentrations in three dimensions. Statistical analysis of the range of current speeds likely to be present where the discharges of cuttings and drilling fluids will take place. • Drill cuttings modelling will use the sediment fate and transport model, GIFT, a module of the Generalized Environmental Modelling System for Surfacewaters (GEMSS®). This three-dimensional particle-based model uses Lagrangian algorithms in conjunction with currents to estimate the fate and transport of release particulate material. • The intent of the study is to determine the water column suspended sediment concentrations and the bottom accumulation of the drill cuttings (the “footprint”) to assess potential impacts to aquatic and benthic organisms. • Time-varying velocities mapped onto the model grid and computed by the hydrodynamic model will be used to disperse drill cuttings, modelled as particles. • Results of the modelling will be provided as a stand-alone report, included as an annex to the main EIA report.

An EIA methodology should minimise subjectivity as far as possible and accurately assess the project impacts. In order to achieve this ERM has followed the methodology defined below.

8.4.1 *Impact Identification and Characterisation*

An 'impact' is any change to a resource or receptor caused by the presence of a project component or by a project-related activity.

Impacts can be negative or positive.

Impacts are described in terms of their characteristics, including the impact type and the impact spatial and temporal features (namely extent, duration, scale and frequency). Terms used in this EIA are described in *Table 8.2*.

Table 8.2 *Impact Characteristics*

Characteristic	Definition	Terms
Type	A descriptor indicating the relationship of the impact to the project (in terms of cause and effect).	<p>Direct - Impacts that result from a direct interaction between the project and a resource/receptor (eg between occupation of the seabed and the habitats which are affected).</p> <p>Indirect - Impacts that follow on from the direct interactions between the project and its environment as a result of subsequent interactions within the environment (eg viability of a species population resulting from loss of part of a habitat as a result of the project occupying the seabed).</p> <p>Induced - Impacts that result from other activities (which are not part of the project) that happen as a consequence of the project.</p> <p>Cumulative - Impacts that arise as a result of an impact and effect from the project interacting with those from another activity to create an additional impact and effect.</p>
Duration	The time period over which a resource / receptor is affected.	<p>Temporary - impacts are predicted to be of short duration and intermittent/occasional.</p> <p>Short term - impacts that are predicted to last only for the duration of the drilling and well testing phase, ie 6 months or less.</p> <p>Medium term - impacts that are predicted to extend beyond the drilling phase but not longer than three years.</p> <p>Long term - impacts that will continue beyond three years but within 10 years.</p> <p>Permanent - impacts that cause a permanent change in the affected receptor or resource or ecological process, and which endures beyond 10 years.</p>
Extent	The reach of the impact	On-site - impacts that are limited to the site area

	(i.e. physical distance an impact will extend to)	<p>only, ie within 500m of drilling well (exclusion zone).</p> <p>Local - impacts that are limited to the project site and within the block.</p> <p>Regional - impacts that affect regionally important environmental resources or are experienced at a regional scale as determined by administrative boundaries, habitat type/ecosystems, ie extend to areas outside the block.</p> <p>National - impacts that affect nationally important environmental resources or affect an area that is nationally important/ or have macro-economic consequences.</p> <p>Trans-boundary/International - impacts that affect internationally important resources such as areas protected by international conventions or impact areas outside of South Africa.</p>
Scale	Quantitative measure of the impact (eg the size of the area damaged or impacted, the fraction of a resource that is lost or affected, etc.).	Quantitative measures as applicable for the feature or resources affects. No fixed designations as it is intended to be a numerical value.
Frequency	Measure of the constancy or periodicity of the impact.	No fixed designations; intended to be a numerical value or a qualitative description.

Unplanned events (eg incidents, spills) are considered in terms of likelihood (*Table 8.3*). The likelihood of an unplanned event occurring is determined qualitatively, or when data are available, semi-quantitatively. It is also important to distinguish that likelihood is a measure of the degree to which the unplanned event is expected to occur, not the degree to which an impact or effect is expected to occur as a result of the unplanned event.

Table 8.3 *Definitions for Likelihood*

Likelihood	Definition
Unlikely	The event is unlikely but may occur at some time during normal operating conditions.
Possible	The event is likely to occur at some time during normal operating conditions.
Likely	The event will occur during normal operating conditions (i.e., it is essentially inevitable).

Determining Impact Magnitude

Once impacts are characterized they are assigned a 'magnitude'. Magnitude is typically a function of some combination (depending on the resource/receptor in question) of the following impact characteristics:

- Extent;
- Duration;
- Scale; and
- Frequency.

Magnitude (from small to large) is a continuum. Evaluation along the continuum requires professional judgement and experience. Each impact is evaluated on a case-by-case basis and the rationale for each determination is noted. Magnitude designations for negative effects are: negligible, small, medium and large.

The magnitude designations themselves are universally consistent, but the definition for the designations varies by issue. In the case of a positive impact, no magnitude designation has been assigned as it is considered sufficient for the purpose of the impact assessment to indicate that the project is expected to result in a positive impact.

Some impacts will result in changes to the environment that may be immeasurable, undetectable or within the range of normal natural variation. Such changes are regarded as having no impact, and characterised as having a negligible magnitude.

In the case of impacts resulting from unplanned events, the same resource/receptor-specific approach to concluding a magnitude designation is used. The likelihood factor is also considered, together with the other impact characteristics, when assigning a magnitude designation.

Determining Magnitude for Biophysical Impacts

For biophysical impacts, the semi-quantitative definitions for the spatial and temporal dimension of the magnitude of impacts used in this assessment are provided below.

High Magnitude Impact affects an entire area, system (physical), aspect, population or species (biological) and at sufficient magnitude to cause a significant measurable numerical increase in measured concentrations or levels (to be compared with legislated or international limits and standards specific to the receptors) (physical) or a decline in abundance and/ or change in distribution beyond which natural recruitment (reproduction, immigration from unaffected areas) would not return that population or species, or any population or species dependent upon it, to its former level within several generations (physical and biological). A high magnitude impact may also adversely affect the integrity of a site, habitat or ecosystem.

Moderate Magnitude Impact affects a portion of an area, system, aspect (physical), population or species (biological) and at sufficient magnitude to cause a measurable numerical increase in measured concentrations or levels (to be compared with legislated or international limits and standards specific to the receptors) (physical) and may bring about a change in abundance and/or distribution over one or more plant/animal generations, but does not threaten the integrity of that population or any population dependent on it (physical and biological). A moderate magnitude impact may also affect the ecological functioning of a site, habitat or ecosystem but without adversely affecting its overall integrity. The area affected may be local or regional.

Low Magnitude Impact affects a specific area, system, aspect (physical), group of localised individuals within a population (biological) and at sufficient magnitude to result in a small increase in measured concentrations or levels (to be compared with legislated or international limits and standards specific to the receptors) (physical) over a short time period (one plant/animal generation or less, but does not affect other trophic levels or the population itself), and localised area.

Determining Magnitude for Socio-economic Impacts

For socio-economic impacts, the magnitude considers the perspective of those affected by taking into account the likely perceived importance of the impact, the ability of people to manage and adapt to change and the extent to which a human receptor gains or loses access to, or control over socio-economic resources resulting in a positive or negative effect on their well-being. The quantitative elements are included into the assessment through the designation and consideration of scale and extent of the impact.

8.4.3 *Determining Receptor Sensitivity*

In addition to characterising the magnitude of impact, the other principal step necessary to assign significance for a given impact is to define the sensitivity of the receptor. There are a range of factors to be taken into account when defining the sensitivity of the receptor, which may be physical, biological, cultural or human. Where the receptor is physical (for example, a water body) its current quality, sensitivity to change, and importance (on a local, national and international scale) are considered. Where the receptor is biological or cultural (ie the marine environment or a coral reef), its importance (local, regional, national or international) and sensitivity to the specific type of impact are considered. Where the receptor is human, the vulnerability of the individual, community or wider societal group is considered. As in the case of magnitude, the sensitivity designations themselves are universally consistent, but the definitions for these designations will vary on a resource/receptor basis. The universal sensitivity of receptor is low, medium and high.

For ecological impacts, sensitivity is assigned as low, medium or high based on the conservation importance of habitats and species.

For the sensitivity of individual species, *Table 8.4* presents the criteria for deciding on the value or sensitivity of individual species.

For socio-economic impacts, the degree of sensitivity of a receptor is defined as the level of resilience (or capacity to cope) with sudden social and economic changes. *Table 8.4* and *Table 8.5* present the criteria for deciding on the value or sensitivity of biological and socio-economic receptors.

Table 8.4 *Biological and Species Value / Sensitivity Criteria*

Value / Sensitivity	Low	Medium	High
Criteria	Not protected or listed as common / abundant; or not critical to other ecosystem functions (eg key prey species to other species).	Not protected or listed but may be a species common globally but rare in South Africa with little resilience to ecosystem changes, important to ecosystem functions, or one under threat or population decline.	Specifically protected under South African legislation and/or international conventions e.g. CITES Listed as rare, threatened or endangered eg IUCN

Note: The above criteria should be applied with a degree of caution. Seasonal variations and species lifecycle stage should be taken into account when considering species sensitivity. For example, a population might be deemed as more sensitive during the breeding/spawning and nursery periods. This table uses listing of species (e.g. IUCN) or protection as an indication of the level of threat that this species experiences within the broader ecosystem (global, regional, local). This is used to provide a judgement of the importance of affecting this species in the context of project-level changes.

Table 8.5 *Socio-economic Sensitivity Criteria*

Sensitivity	Low	Medium	High
Criteria	Those affected are able to adapt with relative ease and maintain pre-impact status.	Able to adapt with some difficulty and maintain pre-impact status but only with a degree of support.	Those affected will not be able to adapt to changes and continue to maintain-pre impact status.

8.4.4 *Assessing Significance*

Once magnitude of impact and sensitivity of a receptor have been characterised, the significance can be determined for each impact. The impact significance rating will be determined, using the matrix provided in *Figure 8.1*.

Figure 8.1 Impact Significance

		Sensitivity/Vulnerability/Importance of Resource/Receptor		
		Low	Medium	High
Magnitude of Impact	Negligible	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Major
	Large	Moderate	Major	Major

The matrix applies universally to all resources/receptors, and all impacts to these resources/receptors, as the resource/receptor-specific considerations are factored into the assignment of magnitude and sensitivity/vulnerability/importance designations that enter into the matrix. Box 8.1 provides a context for what the various impact significance ratings signify.

Box 8.1 Context of Impact Significances

An impact of negligible significance is one where a resource/receptor (including people) will essentially not be affected in any way by a particular activity or the predicted effect is deemed to be ‘imperceptible’ or is indistinguishable from natural background variations.
An impact of minor significance is one where a resource/receptor will experience a noticeable effect, but the impact magnitude is sufficiently small and/or the resource/receptor is of low sensitivity/ vulnerability/ importance. In either case, the magnitude should be well within applicable standards.
An impact of moderate significance has an impact magnitude that is within applicable standards, but falls somewhere in the range from a threshold below which the impact is minor, up to a level that might be just short of breaching a legal limit. Clearly, to design an activity so that its effects only just avoid breaking a law and/or cause a major impact is not best practice. The emphasis for moderate impacts is therefore on demonstrating that the impact has been reduced to a level that is as low as reasonably practicable (ALARP). This does not necessarily mean that impacts of moderate significance have to be reduced to minor, but that moderate impacts are being managed effectively and efficiently.
An impact of major significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors. An aim of IA is to get to a position where the project does not have any major residual impacts, certainly not ones that would endure into the long-term or extend over a large area. However, for some aspects there may be major residual impacts after all practicable mitigation options have been exhausted (i.e. ALARP has been applied). An example might be the visual impact of a facility. It is then the function of regulators and stakeholders to weigh such negative factors against the positive ones, such as employment, in coming to a decision on the project.

8.4.5

Mitigation Potential and Residual Impacts

A key objective of an EIA is to identify and define socially, environmentally and technically acceptable and cost effective measures to manage and mitigate potential impacts. Mitigation measures are developed to avoid, reduce, remedy or compensate for potential negative impacts, and to enhance potential environmental and social benefits.

The approach taken to defining mitigation measures is based on a typical hierarchy of decisions and measures, as described in *Table 8.6*.

The priority is to first apply mitigation measures to the source of the impact (ie to avoid or reduce the magnitude of the impact from the associated project activity), and then to address the resultant effect to the resource/receptor via abatement or compensatory measures or offsets (ie to reduce the significance of the effect once all reasonably practicable mitigations have been applied to reduce the impact magnitude).

Once mitigation measures are declared, the next step in the impact assessment process is to assign residual impact significance. This is essentially a repeat of the impact assessment steps discussed above, considering the assumed implementation of the additional declared mitigation measures. The approach taken to defining mitigation measures is based on a typical hierarchy of decisions and measures, as described in *Table 8.6*.

Table 8.6 Mitigation Hierarchy

Avoid at Source; Reduce at Source: avoiding or reducing at source through the design of the Project (eg avoiding by siting or re-routing activity away from sensitive areas or reducing by restricting the working area or changing the time of the activity).
Abate on Site: add something to the design to abate the impact (eg pollution control equipment).
Abate at Receptor: if an impact cannot be abated on-site then control measures can be implemented off-site (eg traffic measures).
Repair or Remedy: some impacts involve unavoidable damage to a resource (eg material storage areas) and these impacts require repair, restoration and reinstatement measures.
Compensate in Kind; Compensate through Other Means: where other mitigation approaches are not possible or fully effective, then compensation for loss, damage and disturbance might be appropriate (eg financial compensation for degrading agricultural land and impacting crop yields).

8.4.6

Residual Impact Assessment

Once mitigation measures are declared, the next step in the impact assessment process is to assign residual impact significance.

This is essentially a repeat of the impact assessment steps discussed above, considering the assumed implementation of the additional declared mitigation measures.

8.4.7 *Cumulative Impacts*

A cumulative impact is one that arises from a result of an impact from the Project interacting with an impact from another activity to create an additional impact. How the impacts and effects are assessed is strongly influenced by the status of the other activities (eg already in existence, approved or proposed) and how much data is available to characterise the magnitude of their impacts.

The approach to assessing cumulative impacts is to screen potential interactions with other projects on the basis of:

- projects that are already in existence and are operating;
- projects that are approved but not as yet operating; and
- projects that are a realistic proposition but are not yet built.

8.5 *PROPOSED STRUCTURE OF THE EIA REPORT*

An outline of the proposed contents of the EIA Report is *Table 8.1* below.

Table 8.7 *Proposed EIA Report Structure*

Chapter Number	Contents Heading	Explanatory Note
Acronyms and Abbreviations		
Executive Summary		Summary of the entire EIA report.
1	Introduction	This <i>Chapter</i> will outline the development and structure of the EIA report including the background, terms of reference and declaration.
2	Administrative Framework	This <i>Chapter</i> will outline the policy, legal and institutional framework within which the EIA has been conducted.
3	Project Description	This <i>Chapter</i> will provide a concise description of the project and its geographical and temporal context. It will include a site description, an overview of the project design and details of project inputs and outputs.
4	Baseline Condition	This <i>Chapter</i> will summarise the available baseline data on the environmental and social resources and receptors within the Project Area. It will be based on secondary data sources and will consider changes in the baseline condition without the development in place.
5	Public Participation Process	This <i>Chapter</i> will present the results of consultation undertaken as part of the EIA, plus plans for future consultation. It will identify key project stakeholders and present their feedback on the project.
6	Impact	This <i>Chapter</i> will provide the methodology used to assess

Chapter Number	Contents Heading	Explanatory Note
	Assessment Methodology	the impacts of the project on the bio-physical, terrestrial and socio-economic environment.
7	Impact Assessment	This <i>Chapter</i> will document the predicted positive and negative impacts of the project, outline general and specific mitigation measures to reduce, remove or avoid negative impacts to environmental and social receptors as well as measuring for monitoring these impacts. Any residual impacts (post mitigation) will be outlined. Cumulative impacts will be assessed as appropriate.
8	Environmental Management Programme (EMPr)	The EMPr will draw together the possible mitigation measures; group them logically into components with common themes; define the specific actions required and timetable for implementation; identify training needs, institutional roles and responsibilities for implementation.
9	Conclusion	This <i>Chapter</i> will provide conclusions based on the assessment as well as outline any further recommendations.
	Bibliography & References	All references made in the report and documents drawn upon during the course of the assessment
	Annexes	These will include all public consultation information as well as technical annexes with details of specialist reports.

8.6 PROVISIONAL SCHEDULE FOR THE EIA PROCESS

A provisional schedule for the EIA is provided in *Table 8.8* below.

Table 8.8 *Provisional EIA Schedule*

Activity	Timing
Final Scoping Report Submission	March 2018
Scoping Report Approval	April 2018
Disclosure of Draft EIA Report	May 2018
Submission of Final EIA Report	July 2018
Environmental Authorisation	November 2018

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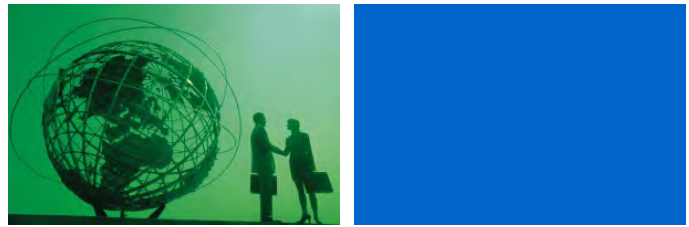
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Annex A

Project Team CV's

Claire Alborough

Senior Consultant
Impact Assessment and Planning Team (IAP)



Claire Alborough joined ERM Sub-Saharan Africa in 2007 as a consultant in the Impact Assessment and Planning (IAP) team based in Cape Town, South Africa.

Since joining ERM Claire has worked on projects based in South Africa, Namibia, Uganda, Nigeria, Ghana and Equatorial Guinea. These projects include large and small scale Environmental Impact Assessments, legislative reviews and permit applications with a focus on oil and gas, power and telecommunications.

Claire's experience includes numerous South African environmental authorisation applications in the oil and gas, telecommunications and power sectors. She has been involved in all phases of environmental authorisation applications from screening through to compliance auditing. Claire has recently project managed the development of a number of Environmental Impact Assessments as well as other project support for offshore oil and gas exploration activities in South Africa. Claire has recently project managed the development of a number of Environmental Impact Assessments as well as other project support for offshore oil and gas exploration activities in South Africa.

Professional Affiliations and Registrations

- Member of the IAIA (International Association for Impact Assessment) South Africa

Fields of Competence

- Environmental Impact Assessments (EIAs)
- Environmental Management Programmes (EMPrs)
- Environmental Law (RSA & International)
- Environmental Management Plans (EMPs)

Education

- MPhil (Marine and Environmental Law), University of Cape Town (UCT), South Africa, 2006
Dissertation focussed on the implementation of the NEM: Air Quality Act 39 of 2004
- Postgraduate Certificate (Project Management), Continuing Professional Development programme, UCT, 2006
- BSc Honours (Environmental Management), UCT, South Africa, 2004
- BSc (Environmental and Geographical Science and Oceanography), UCT, South Africa, 2003

Languages

- English
- Afrikaans

Key Industry Sectors

- Oil and Gas
- Telecommunications (focus on offshore)
- Power Sector (focus on Natural Gas and Renewable Energy)
- Local and national government
- Industrial development

Project Experience

Environmental Impact Assessment for Goldfields South Deep PV Solar Power Facility, South Africa 2017

Consultant

Provided assistance with the management of the Environmental Impact Assessment for the Goldfields South Deep Mine PV Solar Power Facility. Assisted the project manager with the SA EIA process requirements, and managed the drafting of the Scoping Report.

Environmental and Social Risk Identification for New Country Entry, South Africa, Confidential Client 2017

Project Manager

Project managed an environmental and social risk identification exercise for a confidential client wanting to enter into the South African Oil and Gas market. Appointed and managed specialists, organised and assisted in facilitation of workshops, drafted and consolidated reporting.

Environmental Impact Assessment for Offshore Exploration Drilling, Equatorial Guinea, ExxonMobil, 2016 – 2017

Project Manager

Responsible for the drafting of an Environmental Impact Assessment for an offshore exploration drilling project offshore Bioko Island, Equatorial Guinea. The EIA compilation included an evaluation of the relevant legal and regulatory requirements; determination of the environmental (biological and physical) and social conditions; determination of potential impacts; and creation of a comprehensive mitigation and management plan.

Environmental and Social Due Diligence for an Oil Storage Facility, South Africa, Confidential Investment Client, 2016

Project Manager

Project managed and undertook a field visit and write up of an ESDD to international standards of a proposed oil storage facility in South Africa for a client looking to invest in the project.

Environmental and Social Due Diligence for a Gas-fired Power Plant, Nigeria, Confidential Investment Client, 2016

Project Manager

Project managed and undertook the desk-based component and write-up of a ESDD to international standards of a proposed gas-fired power station for a client looking to invest in the project.

Environmental Impact Assessment for a 1500 MW Gas-fired Power Plant, Saldanha Bay, South Africa, ArcelorMittal South Africa, 2015 – 2016

Assistant Project Manager

ERM were appointed to undertake an EIA for the development of a gas-fired power plant to supply Saldanha Steel and other industry in Saldanha. Responsible for technical delivery, reporting and specialist co-ordination.

Environmental Impact Assessment for an LNG Import Facility in Saldanha Bay, South Africa, Department of Energy, 2015 – on hold

Assistant Project Manager

ERM were commissioned to undertake and Environmental Impact Assessment for an LNG import facility in Big Bay of the Port of Saldanha, South Africa. Responsible for the compilation of the Scoping Report and appointment of specialists. Future involvement will include public engagement activities as well as the compilation of the Environmental Impact Assessment Report.

Environmental Support for Commenting on South Africa's Proposed Marine Protected Areas, Confidential Oil and Gas Client, 2016

Project Manager

Prepared a summary presentation regarding the proposed MPA's in order to facilitate the clients understanding of the process and motivations for the MPA's. Attended a meeting with the SANBI to discuss the proposed MPA's and the impact to the clients potential future exploration. Assisted the client with the drafting of comments regarding the proposed new MPA's offshore of South Africa.

Environmental and Social Due Diligence Review for a Gas-Fired Power Station, Freetown, Sierre Leone, Confidential Power Client, 2016

Project Manager

Undertook the environmental component of a desk-based ESDD review to IFC performance standards of a

proposed gas-fired power station in Freetown, Sierre Leone.

Environmental Reporting for Reconnaissance Permit Application for a Seismic Survey offshore East Coast South Africa, Schlumberger, 2015 - 2016

Project Manager

Responsible for the drafting of an Environmental Report for submission to the Petroleum Agency South Africa in support of Schlumbergers application for a Reconnaissance Permit for the undertaking of a seismic survey offshore the east coast of South Africa. The project also involved the development of public consultation materials and the notification of stakeholders.

Environmental and Social Scoping Study for a Gas-fired Power Plant in Saldanha Bay, South Africa, Confidential power client, 2015

Project Manager

Led in the preparation of a Scoping Report and Public Consultation Documentation for a gas-fired power station in Saldanha Bay, South Africa.

Environmental and Social Screening Study for a Gas-fired Power Plant in Saldanha Bay, South Africa, Confidential power client, 2015

Project Manager

Led in the development of a Screening Study for a gas-fired power plant in Saldanha Bay and possible associated LNG import. This included a permitting plan and identification of marine and terrestrial risks.

Permitting Plan for oil and gas activities in South Africa, ExxonMobil Exploration and Production South Africa Limited (EMEPSAL), 2014 - 2015

Project Manager

Led in the development of a permitting roadmap for EMEPSAL's potential upcoming exploration activities. This permitting roadmap included all applicable environmental, social, maritime and aviation legislation. All permits and notification requirements were detailed and a timeline for these developed.

Environmental and Socio-economic Impact Assessment (ESIA) for the Batoka Hydro-Electric Scheme (HES) on the Zambezi River, Zambia and Zimbabwe, Zambezi River Authority (ZRA), 2014 – 2015

Project Consultant

Assisted with the preparation of the Scoping and ESIA reports for the proposed Batoka HES project. The proposed project lies on the Zambezi River, approximately 50 km downstream of the Victoria Falls.

Environmental Management Programme (EMPr) Addendum for oil and gas exploration activities in the Tugela South Exploration Area, South Africa, ExxonMobil Exploration and Production South Africa Limited (EMEPSAL), 2014

Project Manager

Prepared a comprehensive addendum EMPr for the renewal of the Tugela South Exploration Right in terms of the South Africa Mineral and Petroleum Resources Development Act (MPRDA). The client wished to include additional activities and update the Implementation Plan. The block is located close to the Durban South Coast.

Environmental Management Programme (EMPr) for oil and gas exploration activities in the Deepwater Durban Exploration Area, South Africa, ExxonMobil Exploration and Production South Africa Limited (EMEPSAL), 2013 - 2014

Project Manager

Prepared a comprehensive EMPr for the client's planned oil and gas exploration surveys (excluding drilling) in the Deepwater Durban Exploration Area off the east coast of South Africa. The block is located at it's closest 50 km offshore and in water depths ranging from 2200m and 3600m. The development of the EMPr was carried out in terms of the South Africa Mineral and Petroleum Resources Development Act (MPRDA) and included an evaluation of the relevant legal and regulatory requirements; determination of the environmental (biological and physical) and social conditions; determination of potential impacts; and creation of a comprehensive mitigation and management plan. The process also included a comprehensive public consultation process including public meetings. The project had complicated stakeholder issues and went through a Regional Mining Development and Environmental Committee hearing process subsequent to submission. Preparation for and attendance of the meeting was required.

Environmental Impact Assessment (EIA) update for changes to the offshore Zafiro Field oil and gas development, Equatorial Guinea, Mobil Equatorial Guinea Inc. (MEGI), 2013

Project Manager

Prepared an EIA update report for the client for both onshore and Block B offshore operations to meet the

intent of the environmental licensing requirements of the Republic of Equatorial Guinea Environmental Law. The update included the following aspects: providing an updated description of the client's current onshore and offshore operations related to the Zafiro Field, including the new planned drilling programme; incorporating aspects of on-going production activities that were not previously addressed in the EIA (produced sand waste management, completion / workover fluids waste management, abrasive blast media); incorporating applicable requirements of the operation's Environmental License ; and providing the client's staff with sound environmental management guidance and direction with regard to continued offshore operations from the Zafiro Field, as well as their logistical and operational support facilities on Bioko Island.

EIA update, exploration drilling programme in Block P offshore, Equatorial Guinea, Guinea Ecuatorial de Petroleos (GEPetrol), 2013

Project Consultant

Prepared a revised/updated EIA for a proposed exploration drilling programme in the Rio Muni Basin, offshore Equatorial Guinea. Involved in the preparation of an updated report including updates to the project description, baseline and impact assessment sections and the development of an Environmental Management Plan (EMP).

EMPr for oil and gas exploration activities in the Transkei and Algoa exploration areas off the East Coast, South Africa, Impact Africa, 2013

Project Manager

Prepared a comprehensive EMPr for planned oil and gas exploration surveys (excluding drilling) in the Transkei and Algoa Blocks off the east coast of South Africa. The block is located between the shore and approximately 100 km and 180 km offshore and up to 4000 m water depth. The development of the EMPr was carried out in terms of the South Africa Mineral and Petroleum Resources Development Act (MPRDA) and included an evaluation of the relevant legal and regulatory requirements; determination of the environmental (biological and physical) and social conditions; determination of potential impacts; and creation of a comprehensive mitigation and management plan. The process also included a comprehensive public consultation process and public meetings.

Port of Saldanha (Liquified Petroleum Gas) project EIA, South Africa, Sunrise Energy, 2012 - 2013
Project Consultant

Developing an EIA for the installation of and LPG Importation and Storage Facility within and adjacent to the Port of Saldanha, West Coast, South Africa. Responsible for report writing, public consultation activities, management of subcontractors, as well as aspects of client liason and financial management.

EMPr for Exploration of the Bredasdorp Exploration Area, South Africa, Impact Africa, 2012 - 2013
Project Manager

Prepared a comprehensive EMPr for the client's planned exploration surveys in the Bredasdorp Exploration Area off the south coast of South Africa. The block is located adjacent to the coast in water depths between 100m and 200m. The development of the EMPr was carried out in terms of the South Africa Mineral and Petroleum Resources Development Act (MPRDA) and included an evaluation of the relevant legal and regulatory requirements; determination of the environmental (biological and physical) and social conditions; determination of potential impacts; and creation of a comprehensive mitigation and management plan. The process also included a public consultation process.

Amendment to an EMPr for exploration in the Algoa/Gamtoos Block, South Africa, NewAGE, 2012
Project Manager

South Africa's Mineral and Petroleum Resources Development Act requires an EMPr to be compiled and submitted to the Petroleum Agency South Africa as part of an application for an Exploration Right. The client appointed ERM to develop the EMPr and the subsequent amendment required due to a change in work programme. Responsibilities included project management, public consultation, developing the EMPr including the preparation of EMPs for seismic surveys and prospect well drilling.

Photovoltaic (PV) solar power facility Environmental Impact Assessments, South Africa, Solaire Direct, 2012
Project Consultant and assistant Project Manager

Conducted EIAs for two solar power facilities in the Northern and Eastern Cape. Responsible for aspects of public consultation, subcontractor management, liason with authorities, and report writing and submission. Also responsible for some aspects of financial management and client liason.

Cable system screening study, Angola, Alcatel Lucent Submarine Networks (ASN), 2012

Project Manager and co-ordinator

Performing a screening/feasibility study for an offshore optical fibre cable system in Angola. Responsible for client liaison, financial management, subcontractor management, report compilation and review.

Waste Management Licence Basic Assessment, Cape Town Refinery, Chevron, 2011 - 2013**Project Consultant**

Assisted with a Waste Management Licence Application and associated Basic Assessment process for the construction of a consolidated waste facility at the Chevron Refinery in Cape Town. Responsible for report writing, stakeholder engagement, site visit and client liaison.

Underground pipeline project for Cape Town Refinery, South Africa, Chevron, 2010 - 2012**Project Manager**

ERM were commissioned to provide the client with an EIA for the installation of an underground pipeline from the refinery, extending approximately 1.3 km along Koeberg Road. Responsible for client liaison, stakeholder engagement, organising and undertaking a site visit, and report writing.

Wind Farm EIAs, G7 Renewable Energies, 2010 – 2011**Assistant Project Manager**

Performed EIAs for five wind farms in the Western and Northern Cape. Responsible for aspects of public consultation, organisation of site visits, conduction of primary and secondary research, liaison with authorities, and report writing and submission. Also responsible for some aspects of financial management and client liaison.

Solar power farm EIAs, South Africa, Intikon Energy, 2010 – 2011**Assistant Project Manager**

ERM completed EIAs for two solar power farms in the Northern Cape and Free State. Responsible for aspects of public consultation, organisation of site visits, conduction of primary and secondary research, liaison with authorities, and report writing and submission. Also responsible for some aspects of financial management and client liaison.

West Africa cable system project EIAs, South Africa and Namibia, Alcatel-Lucent Submarine Networks, 2009 - 2011**Assistant Project Manager**

Provided assistance with the EIAs for the submarine telecommunications cable landings in South Africa and Namibia. Responsible for organisation of site visits, consultation meetings, public participation, conduction

of primary and secondary research, liaison with authorities, as well as report compilation and submission. Additional responsibilities included co-ordination of permits required other than the EIA and liaison with the client and landing parties.

West Africa cable system project EIAs, Cote d'Ivoire, Congo, DRC and Togo, Alcatel-Lucent Submarine Networks, 2009 - 2011**Project Co-ordinator**

Coordinated EIAs for the submarine telecommunications cable landings in Cote d'Ivoire, Congo, DRC, Togo and Cameroon. Responsible for co-ordination between the ERM team based in France, the client and the overall project management team.

EMPr for exploration in the Ultra Deepwater Orange Basin Block, South Africa, Shell, 2010**Project Consultant**

South Africa's Mineral and Petroleum Resources Development Act requires an EMPr to be compiled and submitted to the Petroleum Agency South Africa as part of an application for an Exploration Right. Shell appointed ERM to develop the EMPr. Responsibilities included developing the EMPr including the preparation of EMPs for seismic surveys and prospect well drilling.

Flare Modernisation Basic Assessment, Cape Town Refinery, Chevron, 2008 – 2009**Project Consultant**

Basic Assessment for the modernisation of Chevron's Cape Town Refinery's flaring system. Responsible for organising an authorities consultation meeting, submission of notice of intent, liaising with specialists and the client, assisting with stakeholder engagement, and compilation and submission of the Basic Assessment Report.

Environmental Performance Strategy, South Africa, City of Cape Town, 2008 – 2009**Project Consultant**

The project involved the development of an environmental performance strategy for the City of Cape Town. Responsibilities included attending and taking minutes of interviews undertaken for an 'as is' assessment of the City, assistance with report preparation, the compilation of a case study on the eThekweni Municipality and the drafting of an EIA Manual for the City of Cape Town.

Environment, Health and Safety Legal Register, South Africa, mining client, 2009
Project Consultant

Review of legislation applicable to a Mining Industry client's Johannesburg Offices and the development of an Environment, Health and Safety Legal Register.

**Environment, Health and Safety Legal Register, Ghana, Baker Hughes Oil Tools, 2008 – 2009
Project Consultant**

Review of all environmental, health and safety legislation applicable to Baker Hughes current and potential future operations in Ghana and the development of an Environment, Health and Safety Legal Register to be used by incountry EHS staff.

**MaIN OnE submarine cable project Phase 1 EIAs, Nigeria and Ghana, Main Street Technologies, 2008 – 2009
Project Consultant**

Phase 1 EIAs for a submarine cable and the associated landing sites in both Nigeria and Ghana. Responsible for conducting secondary level research and report compilation, as well as other project related activities.

**Early Production System (EPS) EIA, Lake Albert, Uganda, Tullow Uganda Operations Pty Ltd, 2007 – 2008
Project Consultant**

EIA for an EPS because the client has a Memorandum of Understanding (MoU) with the Government of Uganda to develop an onshore EPS – the first oil production in Uganda. Responsible for researching and writing sections of the biophysical baseline chapter and the legal overview chapter, editing, compiling and submission of the final report, and assisting the project manager with client and sub-contractor liaison.

**Lake Albert offshore exploration drilling EIA, Uganda, Tullow Uganda Operations Pty Ltd, 2007 – May 2008
Project Consultant**

EIA for offshore exploration drilling in Lake Albert. The EIA also includes an assessment of the onshore facilities required for the project. Responsible for researching and compiling the legal overview and biophysical baseline sections as well as editing the final report.

**Air Pollution Regulation Review, South Africa, Zimco Group, 2008
Researcher**

Reviewed proposed regulations under South Africa's National Environmental Management: Air Quality Act 39 of 2004. The objective of this review was to assess the proposed ambient and point source requirements for five metallurgical and mineral processing facilities.

**Basic Assessment for the Installation of LPG Tanks, Simba Parow Industria, 2008
Project Consultant**

Basic Assessment of two fully-mounded LPG tanks at Simba's Parow Industria facility. Undertook site visit and compiled the Basic Assessment Report, also responsible for public participation and assisting the project manager with client liaison.

**Atmospheric Pollution Prevention Act (APPA) permit amendment application, South Africa, Corning Products South Africa Pty Ltd, 2008
Researcher**

Researched and liaised with authorities to gather information on the current APPA permitting requirements. Compiled and submitted the amendment application form, this required a thorough understanding of the current and future air pollution legislation.

**Freight line upgrade EIA, Coega to De Aar, South Africa, Transnet Projects, 2008
Project Consultant**

Assisted with the compilation of a stakeholder database and drafting of the stakeholder engagement material for the project.

**NEMA Rectification Applications for above and underground fuel storage tanks, South Africa, Shell SA Marketing Pty Ltd, 2007 – 2008
Project Consultant**

NEMA rectification applications for above and underground fuel storage tanks throughout South Africa. Involved in the undertaking of site visits, report writing and submission of reports to the authorities in the Mpumalanga Province. Also assisted with the compilation of a synopsis of the rectification sites.

**Angara Spit Environmental and Social Baseline Report, Lake Albert, Uganda, Tullow Uganda Operation Pty Ltd, 2007
Project Consultant**

EIAs for exploration well drilling on the Angara sand spit near Kaiso village. Responsible for final editing and compilation of the environmental and social baseline report.

Ingeborg M McNicoll

Senior Partner
Capital Projects



Ingeborg McNicoll is a Senior Partner with ERM Sub Saharan Africa, based in Cape Town, South Africa. She brings over 30 years' experience working as an environmental consultant predominantly in the marine environment, initially in fish farming and marine resources and latterly for the oil and gas industry starting in the UK North Sea and Atlantic Margin, Norwegian Sector of the North Sea, Republic of Ireland focusing on exploration through the whole project life cycle to decommissioning for Upstream, Midstream and Downstream Projects. She has developed extensive global experience in Oil and Gas projects including the Mediterranean, Former Soviet Union, South East Asia, North Asia, Australia, New Zealand, North, East and West Africa and the Gulf of Mexico.

She has acted as Project Director/ Manager in numerous environmental projects which include Strategic Environmental Assessments for Oil and Gas exploration and decommissioning, environmental impact assessments, environmental permitting, oil spill contingency planning, consultation with stakeholder and statutory authorities, environmental management systems. Her experience in all stages of the oil and gas lifecycle including technical and process aspects enables her to provide due diligence support for transactions and facilitate a range of types of Environmental Workshops such as environmental scoping, BAT, eALARP and ENVIDs, etc.

Her clients include eni, Sasol, Shell, Premier Oil, Statoil, Aker, Chevron, Petronas Carigali, Talisman, BHPB Billiton, Total, BP Exploration and Production, Hess, ExxonMobil, Tullow, EMAS, Toyo, Vopak, Coastal Energy, PTTEP, Petrofac, Brunei LNG as well as financial institutions.

Fields of Competence

- Environmental Impact Assessment
- Environmental Risk Assessment
- Strategic Environmental Assessment
- Best Available Techniques Studies
- Design and execution of marine ecology studies
- Onshore and offshore oil spill contingency plans
- Environmental Management
- Environmental Due Diligence
- Marine assessments
- Training and capacity building
- Public consultation and participation

Education

- BSc (Hons) Marine Biology, Heriot-Watt University (1979)
- ERM CVS Lead Assessor 14001 training course, 2006

Languages

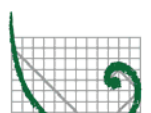
- English

Key Industry Sectors

- Oil and Gas,
- Government

Professional Affiliations & Registrations

- Member of the Energy Institute
- Member of the Society of Petroleum Engineers
- Affiliate Member of the Institute of Environmental Management and Assessment
- Nuffield Scholar
- DOE registered EIA Consultant (Reg. No.: CS0120)
- DOE registered Subject Consultant, Marine Ecological Studies (Reg. No.: CS0120)
- NREB registered EIA Consultant and Permanent Specialist in Marine Biology and Environmental Management (Reg. No. NREB/1/00810)



Environmental Impact Assessment/ Environmental Management

ExxonMobil (2017)

Project Director – Blockwide EIA for exploratory drilling and seismic in Block B, offshore Equatorial Guinea. The EIA presented the assessment of the important environmental and social issues relating to the project. A waste management plan was also prepared for drilling and seismic operations.

ExxonMobil (2017)

Project Director – Blockwide EIA for exploratory drilling in Block 6, offshore Equatorial Guinea. The EIA presented the assessment of the important environmental and social issues relating to the project. A waste management plan was also prepared for drilling operations.

eni East Africa (2016)

Technical Specialist – specialist studies for the Floating LNG project offshore Mozambique including and Offshore Environmental Baseline Action Plan, Biodiversity Action Plan including Critical Habitat Assessment and a number of Management Plans.

BG Tanzania (2016)

Project Director – Blockwide EIAs for Blocks 1 and 4, offshore Tanzania. The Block-Wide EIAs covered a defined programme of exploration and drilling activities that were currently planned as well as activities that may be carried out in the future. The EIA presented the assessment of the important environmental and social issues relating to the project. Management and mitigation measures proposed in order to minimise potential impacts were also an outcome of the process.

Sasol Exploration & Production International (SEPI)

(2017) –Project Director for the Environmental and Social Impact Assessment for the Export pipeline from the onshore Liquid Export Facility to an Offshore FSO, Mozambique. The ESIA required extensive field and specialist studies to enable assessment of biodiversity, cultural heritage, tourism, fisheries, marine ecology, communities, flora and fauna as well as the physical environment.

Department of Mineral Fuels (2016)

Technical Advisor –. Preparation of a Manual to undertake the Best Practicable Environmental Option (BPEO) process for decommissioning oil and gas facilities and deliver training to key operators in Thailand.

Idemitsu (2016)

Technical Advisor – Facilitator for Best Available Techniques (BAT) Workshop for FEED Stage of a Full Field Development offshore Vietnam.

Hess (2015)

Technical Advisor and ENVID Facilitator for an Environmental and Social Impact Assessment Scoping for the DWT OCTP Development deepwater oil production and export project offshore Ghana. The project comprises installation of production wells and reinjection wells and a FPSO. An ENVID workshop was conducted to inform the scoping process

ION (2015)

Project Director – Environmental Impact Assessment for 2D Seismic Survey, offshore Angola.

Confidential Client (2015)

Technical Advisor – Decommissioning Environmental Assessment for Phase I decommissioning of platforms and pipelines in South East Asia.

Department of Mineral Fuels, Thailand (2015)

Technical Advisor –. Delivery of a Technical Seminar on the Environmental Issues and Assessment Process for Decommissioning.

Confidential Client (2015)

Technical Advisor –Waste management study on potential decommissioning facilities in Asia Pacific.

Hess Oil and Gas (2015)

Project Director-Sdn Bhd Environmental Impact Assessment and associated Marine Environmental Baseline Survey, and an Environmental Issues Identification (ENVID) Workshop for the Full Field Development, Offshore Peninsular Malaysia.

Petrofac (Malaysia-PM304) Limited (2014-2015)

Project Director –. Decommissioning Environmental Risk Assessment and Environmental Management Plan for the disconnection and removal of a Floating Storage and Offloading (FSO) vessel and Mobile Production Unit (MOPU) at the Cendor Field, Offshore Peninsular Malaysia.

eni East Africa (2014-2015)

Technical advisor - specialist studies for the Floating LNG project offshore Mozambique.

Hess Oil and Gas (2014)

Project Director-Sdn Bhd Environmental Impact Assessment and associated Marine Environmental

Baseline Survey, and an Environmental Issues Identification (ENVID) Workshop for the Integrated Gas Development Early Production System, Offshore Peninsular Malaysia.

Aker Engineering International (2014)

Environmental Adviser seconded to Aker for the Detailed Design of Statoil's Gina Krog Platform Project, Norway. Responsible for aligning Detailed Design to environmental performance standards. Additional studies included an Environmental Design Review, BAT Evaluation Report, Environmental Budget Study and the Waste Handling Philosophy.

Brunei Shell Joint Venture (2014)

Project Director - (BSJVs) Strategic Impact Assessment (SIA) and Environmental Management Plan (EMP) for 6 jetty and wharf facilities along the coastline of Brunei that service BSP's offshore operations.

Cobalt International Energy (2014)

Technical Advisor for an ESHIA for an oil and gas field development offshore Angola. IFC Gap analysis was also conducted as well as a BAT workshop for the FPSO design.

Salamander Energy Ltd (2014)

Project Director for Environmental Risk Assessment (ERA) and Environmental Management Plan (EMP) for 3D Seismic Survey Block PM 322, Straits of Malacca, Malaysia.

Sabah Shell Petroleum Company (2014)

Project Director - Environmental Impact Assessment for Ocean Bottom Cable Seismic Survey, offshore Sabah.

Confidential Client (2014)

Project Director - Coral survey to assess the condition and quality of the confirmed corals along the corridor of the proposed new pipeline route between CPCB-07 and CPDP-11.

Brunei LNG (2014)

Project Director - A scoping study, ESH baseline study, impact assessment and ESHMP for the extension of the existing cogeneration (COGEN) I units.

Petrofac Malaysia-PM304 Limited (2014)

Project Director - Environmental Risk Assessment, Environmental Management Plan and Health Risk Assessment for Decommissioning of CP1 facilities, offshore Terengganu.

Hess Oil and Gas Sdn Bhd (2014)

Project Director- ERA and EMP for Exploration/ Appraisal Wells Drilling in Blocks 302, 325 and 326 B, offshore Peninsular Malaysia.

JX Nippon Oil & Gas Exploration (Deepwater Sabah Limited) (2014)

Project Director - Environmental Management Plan and Environmental Risk Assessment for exploratory drilling in Block R and Block 2F, Offshore Sabah and Sarawak.

Confidential Client (2013 - 2014)

Project Director - IA on the environmental, social and public health impacts associated with an onshore/offshore 3D Seismic Survey.

Technip Geoproduction/Petronas (2013-2014)

Project Director - Environmental Impact Assessment and associated Environmental Baseline Survey for the Sepat Gas Development Project, Block PM313, Exclusive Economic Zone, Offshore Terengganu.

Coastal Energy KBM (2013)

Project Director - Environmental Impact Assessment and associated Marine Environmental Baseline Survey for the Kapal, Banang and Meranti (KBM) Cluster Fields Development Block PM 316, offshore Peninsular Malaysia.

Confidential Client (2013)

Project Director - An Environmental Impact Assessment (EIA) for the drilling of three (3) onshore exploratory wells in Block L, Tutong, Brunei Darussalam

Confidential Client (2012)

Project Director - Scoping study to identify the environmental, social and public health impacts associated with two onshore fabrication yards sites and preliminarily assess the significance of these impacts.

Sonaref (2012)

Technical Advisor - ESHIA for the Sonangol refinery in Angola comprising construction of a new refinery, Single Buoy Mooring and offloading wharf and jetty facility.

Confidential Client (2012)

Scoping study scoping to identify the environmental, social and public health impacts associated with an onshore/offshore 3D Seismic Survey and preliminarily assess the significance of these impacts; and scope the IIA

Confidential Client (2012)

Technical Advisor for Deepwater Environmental Baseline for offshore ESHIA West Australia

Chevron Angola (2012)

Technical Advisor for deepwater ESHIA

Statoil Angola (2012)

Technical Advisor for Environmental Risk Assessment for deepwater drilling including ENVID facilitator

Maersk Angola (2011)

Technical Advisor for deepwater drilling

Confidential Client (2012)

Project Director - Environmental Issue Identification/IA Scoping Study for a deepwater field development, South China Sea

Premier Oil Natuna Sea BV (2012)

Technical Advisor - Environmental Review/ALARP/BAT for the Naga Pelikan Field Development.

Premier Oil Natuna Sea BV (2012)

Technical Advisor - Environmental Review/ALARP/BAT for the Anoa Complex

Petronas Carigali Sdn Bhd (2012)

Project Director - Pre-, during and post-decommissioning environmental surveys together with an Environmental Management Plan for the decommissioning of two structures, South China Sea.

Talisman Malaysia Limited (2012).

Project Director - Desktop EIA for Exploration Drilling offshore East Malaysia

Petrofac (Malaysia-PM304) Limited (2012)

EIA Team Leader/Project Director - Environmental Impact Assessment and associated Marine Environmental Baseline Survey, and an Environmental Issues Identification (ENVID) Workshop for the West Desaru Field, Block PM-304, Offshore Peninsular Malaysia.

Brunei Shell Petroleum Company Sdn Bhd (2012)

Project Director - Hydrodynamic computational modelling of discharge of produced water from the Seria Crude Oil Terminal, Brunei Darussalam
Project Director - Hydrodynamic computational modelling of the dispersion of drilling waste discharges from offshore drilling platforms for Bugan and Bubut exploratory wells, offshore Brunei Darussalam.

Brunei Shell Petroleum Company Sdn Bhd (2012)

Project Director - Baseline and Post-Drilling Monitoring of the marine environment (physico-chemical and biological) in sensitive coral ecosystems off the coast of Brunei Darussalam

EMAS (2011-2012)

Project Director- Provision of Environmental Services to support the preparation of an Exit Plan for the dismantling and redeployment of an FPSO in the Gulf of Thailand.

IEV (2011-2012)

Project Director - Environmental Management and Monitoring for the decommissioning of two structures offshore Sabah, East Malaysia

Shell Eastern Petroleum Limited (2011-2012)

Technical Advisor - Scoping Report and Environmental Social and Health Management Plan for Pipeline Repair Project, Singapore

PHE ONW, Indonesia (2011)

Project Director - Review of the Existing PHE ONWJ Integrated Risk Matrix, Development of the Likelihood vs Severity Curves (L-S Curves) and Oil Spill Risk Assessment.

GMAPS Engineering Services Pte Ltd (2011)

EIA Team Leader/Project Director - A Preliminary Environmental Impact Assessment for the proposed dredging works at the Jasar Jetty which is located in Serasa, Brunei Darussalam.

Technip Geoproduction (M) Sdn Bhd (2011)

EIA Team Leader/Project Director - Environmental Impact Assessment and associated Marine Baseline Survey for the Dulang Phase II Field Redevelopment Project, Block PM6, Offshore Peninsular Malaysia

BP (2010)

Technical Advisor on behalf of BP to Oil and Gas UK Decommissioning Working Group 3 and preparation of a Global Legislation on Decommissioning Reference report.

Petrofac (Malaysia-PM304) Limited (2010)

Project Director - An EIA for the development of the Berantai Field, offshore Terengganu including conducting an ENVID and marine baseline survey to support the impact assessment.

Petrofac (Malaysia-PM304) Limited (2010)

Project Director - A supplementary EIA for the Phase 2 development of the Cendor Field, Block PM 304,

offshore Terengganu including conducting an ENVID and marine baseline survey to support the impact assessment.

Brunei LNG Sdn Bhd (2006)

Project Director – IA Scoping, Impact Assessment and associated Environmental, Social and Health Management Plan for BLNG Power Plant Rejuvenation Project Phase 2. The IA and ESHMP for Phase 1 of the Project were completed by ERM

Hess (Malaysia – SB 302) Limited (2009)

Project Director – Development of an Environmental Road Map for Belud Field Development, Offshore Sabah.

Premier Oil Vietnam (2009)

Technical Advisor – A Critical Environmental Review (e-ALARP) of the Block 12 development - Chim Sao and Dua Fields.

Premier Oil Indonesia (2009 -2010)

Technical Advisor – A Critical Environmental Review (E-ALARP) of the Gajah Baru Field

Confidential Client (2009 – 2010)

Project Director –An Environmental Impact Assessment (EIA) and associated Management Plan for the drilling of three (3) onshore exploratory wells in Block L, Tutong, Brunei Darussalam

Chevron (2009-2012)

Project Director – ESHIA for shore-based facility to support the offshore oil and gas industry offshore Thailand.

Shell Global Solutions (Malaysia) Sdn Bhd (2008 - 2010)

Project Director – An Environmental, Social and Health Impact Assessment for two proposed upgrades to Shell's Bukom Refinery in Singapore.

Shell Global Solutions (Malaysia) Sdn Bhd (2008)

Project Director – Impact Assessment for PRL Refinery Upgrade Project, Pakistan. An Impact Assessment Study for the PRL Refinery Upgrade Project in Pakistan

Brunei LNG Sdn Bhd (2008-2009)

Project Director – Nearshore Environmental Monitoring Study for Brunei LNG. An environmental monitoring study of the nearshore environment in front of the BLNG plant in Lumut, Brunei Darussalam

Sarawak Shell Berhad (2008-2009)

Project Director - An EMP was prepared for the proposed field development of the Cili Padi Gas Field, offshore Sarawak.

Sarawak Shell Berhad (2008-2009)

Project Director – To conduct an environmental monitoring programme for Scheduled Waste Storage Facility in Labuan Supply Base and Labuan Crude Oil Terminal.

Sarawak Shell Berhad (2008)

Project Director – Environmental Impact Assessment (EIA) Study for Cili Padi Gas Field Development Project, Offshore Sarawak.

Nations Petroleum Brunei Ltd. (2008)

Project Director – Environmental and Social Management and Monitoring plan (ESMMP) for an onshore seismic survey in Brunei Darussalam.

Loon Brunei Limited and Nations Petroleum Limited (2008).

Project Director - Environmental and Social Baseline Survey for proposed 3-Dimensional Seismic Survey over a 350km² onshore area in Tutong District, Brunei Darussalam

Nations Petroleum Company Limited (2007)

Project Director - Environmental and Social Baseline Study in support of a proposed 3-Dimensional Seismic Survey in Block L, Tutong District, Brunei Darussalam.

Thailand - Chevron, PTTEP, Hess, DMF and ONEP (2007-2008)

Technical Advisor - BPEO Decommissioning Guideline for Offshore Oil and Gas Facilities in Thailand, for representative of the oil and gas industry in Thailand (ie. Chevron, PTTEP) and regulatory authorities (ie. DMF and ONEP). The project involved preparing a Guideline on the application of BPEO to the offshore decommissioning of oil and gas facilities in Thailand.

Murphy Oil Sabah (2006-2007)

Project Director - Environmental impact assessment for offshore Sabah, inclusive of marine and coastal baseline survey for a proposed pipeline linking Murphy's deepwater Kikeh field and the Labuan Crude Oil Terminal on Labuan

PETRONAS Carigali Sdn Bhd (2006-2007).

Project Director - Environmental impact assessment for Proposed Angsi – TCOT Crude Oil Pipeline, Exclusive Economic Zone, Offshore Peninsular Malaysia

Brunei Shell Petroleum Project (2006-2007)

Project Director - Impact Assessment for Mampak Block 4 Field Development, offshore Brunei Darussalam. An Integrated (Environmental, social and health) impact assessment of the proposed development of a gas field offshore Brunei.

Brunei Shell Petroleum (2006-2007)

Project Director - Initial Screening, Scoping and Constraints Assessment for Bugan Phase 2 Field Development offshore Brunei Darussalam, The field is located in an area surrounded by sensitive coral ecosystems.

Brunei Shell Petroleum (2006-2007)

Project Director - Impact Assessment for the proposed on and offshore field development of the Seria North Flank, Brunei Shell Petroleum, including marine baseline monitoring for the on- and offshore development of the Seria North Flank field area of Brunei.

Department for the Marine, Natural Resources and Communications, Republic of Ireland (2006 - 2007)-

Project Director - First and Second Irish Offshore Strategic Environmental Assessment for. Project director including active participation in Steering Group Meetings, presentations at public consultation meetings, contributing to environmental assessment sections and overall review of baseline environment report and SEA report

Transaction Services – Due Diligence and Finance Environmental and Social Management Systems**Confidential Client (2017)**

Senior Marine Specialist - Environmental and Social Due Diligence (ESDD) of a Petroleum Mooring System (GPMS) operations to evaluate compliance with applicable international environmental and social standards and Client's E&S requirements.

Confidential Client (2016)

Technical Reviewer- Health, Safety, Security and Environment (HSSE) Vendor Due Diligence Review of onshore and offshore exploration & production operations including assets for retirement located in Asia Pacific.

Confidential Client (2016)

Technical Reviewer- Environmental & Social Due Diligence for Project involving the potential buy-out of the Marine Services Division from its current corporate shareholder. It involved review of information

available from public domain and the data room, the desktop-based evaluation of documentation, interviews and on-site inspections.

Confidential Client (2014)

Technical Advisor - Environmental Review of offshore facilities comprising platforms and Floating Production Storage Offtake vessel under Asset Transfer, offshore China. The assessment provided an independent determination of material environmental and social risks associated with the field assets. The assessment was carried out against the requirements of applicable laws and regulations. It involved review of information available from public domain and the data room, the desktop-based evaluation of documentation, interviews and on-site inspections offshore.

Dialog (2014)

Project Director - an assessment of Equator Principles compliance on behalf of the project company (the borrower) for a greenfield coastal tank farm facility with associated marine structures - loading/unloading jetties.

Confidential Client (2014)

Project Reviewer - environmental due diligence (EDD) services for the proposed acquisition of up to 30% of Target upstream Malaysian assets, The assignment involved desktop based review of project documents (including impact assessments and monitoring data) and a field survey and inspection of the assets including oil wells, connecting pipelines, FPSO and gas pipeline to shore. The overall objective of this project was to provide an assessment of the material liability issues in relation to key environmental and safety issues.

Workshops**Sasol Exploration & Production International (SEPI), December 2016**

Facilitator for Mitigation Workshop for the Sasol Pipeline and FSO ESIA Project.

Confidential Client, October 2016

Chairman for Decommissioning Strategic Assessment Scoping Workshop, South China Sea

Idemitsu, October 2016

ENVID Facilitator for Block 05-01b/01c Field development, offshore Vietnam.

Idemitsu, August 2016

Facilitator for BAT Brainstorming Workshop for Block 05-01b/01c Field development, offshore Vietnam.

BG Tanzania, April 2016

ENVID Facilitator for two Blockwide EIAs

Sasol Exploration & Production International (SEPI), January 2016

ENVID Facilitator for the Sasol Pipeline and FSO ESIA Project.

Hess, July 2015

ENVID Facilitator and Technical Reviewer for the Scoping Study for the Tano Deepwater Field Development, Offshore Ghana.

Brunei Shell Petroleum, August 2014

Facilitator for Mitigation Workshop for Marine Construction Yard.

Cobalt International Energy, August 2014

Facilitator for ENVID/BAT Workshop for Cameia FPSO, Angola

Aker Engineering International, August 2014

Facilitator for an Environmental Issues Identification Workshop for Wellhead platforms, offshore Peninsular Malaysia.

Aker Engineering International, August 2014

Facilitator for an Environmental Issues Identification Workshop for Bergading CPP, offshore Peninsular Malaysia.

Brunei Shell Petroleum, June 2014

Facilitator for IA Scoping Workshop for BSJV Jetty and Wharf Facilities, Brunei.

Confidential Client May 2014

Facilitator for IA Scoping Workshop for Ocean Bottom Cable Seismic Survey, offshore Sabah.

Brunei LNG, March 2014

Facilitator for IA scoping study for the extension of the existing cogeneration (COGEN) I units in Brunei.

Salamander Energy March 2014

Facilitator for IA an Environmental Issues Identification (ENVID) Study to identify the Environmental, Public Health and Social (EHS) issues/ risks associated with the initial seismic survey in Block PM322

Hess Oil and Gas Sdn Bhd, February 2013

Facilitator for an Environmental Issues Identification Workshop for Full Field Development, offshore Peninsular Malaysia

Shell Deepwater Borneo Ltd, January 2013

Facilitator for Scoping Workshop for Offshore Field Development

INPEX Ichthys FPSO Project (Subsea Production Systems) January 2013

Facilitator for an Environmental Issues Identification Workshop

Brunei Shell Petroleum, December 2012

Facilitator for Scoping Workshop for Onshore 3D seismic campaign

Brunei Shell Petroleum, December 2012

Facilitator for Scoping Workshop for Marine Construction Yard

Angola Statoil, November 2012

Facilitator for an Environmental Issues Identification Workshop for Deepwater drilling, offshore

INPEX Ichthys FPSO Project (Turret, November 2012

Facilitator for an Environmental Issues Identification Workshop

Tullow October 2012

Facilitator for BAT and ENVID for Deepwater Field Development, Offshore Ghana

Dua Field Development, Premier Oil Vietnam, August 2012

Facilitator for Environmental ALARP/BAT Workshop

Confidential Client Development, June 2012

Facilitator for an Environmental Issues Identification Workshop for Deepwater Field Development, South China Sea

Shell Chemical Seraya Pte Ltd, May 2012.

Facilitator for Scoping Workshop for Ethylene Oxide facility in Singapore.

Hess Oil and Gas Sdn Bhd, May 2012

Facilitator for an Environmental Issues Identification Workshop for Early Production System Field Development, Malaysia

Premier Oil Indonesia, January 2012

Facilitator for Environmental ALARP/BAT Workshop for Anoa Phase 4

Premier Oil Indonesia, February 2012

Facilitator for Environmental ALARP/BAT Workshop for Naga Pelikan Field Development

Thailand (Confidential Client), November 2011
Facilitator for an Environmental Issues Identification Workshop for Decommissioning Project Offshore
Sabah for IEV Sdn Bhd, November 2011
Facilitator for an Environmental Issues Identification Workshop for Decommissioning Project Offshore

Petrofac Malaysia Limited, October 2011
Facilitator for an Environmental Issues Identification Workshop for West Desaru Field Development, Malaysia

Brunei Shell Petroleum, October 2011.
Facilitator for an IA Scoping Workshop for Champion Field Brunei

FPSO Decommissioning Project, Singapore, October 2011
Facilitator for a Scoping Workshop

Petrofac Malaysia Limited, Woking January 2011
Facilitator for an Environmental Issues Identification Workshop for Berantai Field, Malaysia for.

PC Muriah Limited, August 2010
Chairman for Environmental Issues Identification workshop for Kepodang Field, Indonesia

Brunei Darussalam, April 2010
Facilitator for IA Scoping Workshop, Brunei LNG Sdn Bhd.

Petrofac Malaysia, Kuala Lumpur 24 March 2010
Facilitator for ENVID for Cendor Phase 2,

BHPBilliton Vietnam, Kuala Lumpur, February 2010
Facilitator for IA Scoping Workshop,

Premier Oil Vietnam, December 2009
Facilitator for Environmental Review of Conceptual Design for Chim Sao Field Development

Premier Oil Indonesia, November 2009
Facilitator for Environmental Review of Conceptual Design for Gajah Baru Field Development.

Statoil Hydro Indonesia, August 2009
Facilitator for IA Scoping Workshop

Shell Petroleum July 2009.
Facilitator for IA Scoping Workshop, Brunei

Workshop for Technip, 2007
Chairman for an Environmental Issues Identification

Lundin Britain Limited, Aberdeen, December 2006.
Chairman for an Environmental Issues Identification Workshop
Faroe Petroleum, Aberdeen, May 2006.
Chairman for an Environmental Issues Identification Workshop

Amerada Hess Ltd, Aberdeen, March 2006.
Chairman for an Environmental Issues Identification Workshop

Petronas Carigali, Myanmar, February 2006.
Chairman for an Environmental Issues Identification Workshop

Hurricane Exploration plc, Alton, February 2006.
Chairman for an Environmental Issues Identification Workshop

Exmar Oil and Gas Ltd, Aberdeen, November 2005.
Chairman for an Environmental Issues Identification Workshop

Annex B

Stakeholder Engagement

Annex B1

Interested & Affected Party Database

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Authority	National	Mr	Thabo	Mokoena	Director General	Department of Mineral Resources
		Mr	Molefe	Morokane	Director	Department of Mineral Resources
Authority	National	Mr	Khayaletu	Matrose	Director General's Office	Department of Mineral Resources
Authority	National	Ms	Mamabefu	Modipa	Director General's PA	Department of Mineral Resources
Authority	National	Ms	Kefilwe	Chibogo	Deputy Minister's PA	Department of Mineral Resources
Authority	National	Mr	Tebogo	Motlounq	Manager Licensing and Legal Compliance (Acting GM Regulation)	Petroleum Agency SA
Authority	National	Ms	Lindiwe	Mekwe	General Manager: Regulation (Acting CEO)	Petroleum Agency SA
Authority	National	Ms	Phumla	Ngesi	Manager: Environmental Compliance	Petroleum Agency SA
Authority	National	Mr	Stet	Mushwana	Senior Environmental Coordinator	Petroleum Agency SA
Authority	National	Mr	Dave	D van der Spuy	Manager: Resource Evaluation	Petroleum Agency SA
Authority	National	Ms	Milicent	Solomons	Director: Integrated Environmental Authorisation	Department of Environmental Affairs
Authority	National	Mrs	Nosipho	Ngcaba	Director General	Department of Environmental Affairs
Authority	National	Dr	Yazeed	Peterson	Director: Emergency Oil Spill Response Coastal Pollution Managemen	Department of Environmental Affairs: Oceans and Coasts
Authority	National	Mr	Shonisani	Munzhedzi	Deputy Director-General: Coastal and Biodiversity Conservation	Department of Environmental Affairs: Oceans and Coasts
Authority	National	Mr	Gqobani	Popose	Director: Oceans Conservation Strategies	Department of Environmental Affairs: Oceans and Coasts
Authority	National	Dr	Jonas	Mphepya	Chief Directorate - Oceans Conservation	Department of Environmental Affairs: Oceans and Coasts
Authority	National	Mr	Andy	Cockcroft		Department of Environmental Affairs: Oceans and Coasts

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Authority	National	Mr	Mike	Meyer		Department of Environmental Affairs: Oceans and Coasts
Authority	National	Mr	Herman	Oosthuizen		Department of Environmental Affairs: Oceans and Coasts
Authority	National	Dr	Alan	Boyd	Director	Department of Environmental Affairs: Oceans and Coasts
Authority	National	Mr	Siphokazi	Ndundane	Deputy Directory General	Department of Agriculture, Forestry and Fisheries: Fisheries Management
Authority	National	Mr	Justice	Matshili	Chief Director (Acting)	Department of Agriculture, Forestry and Fisheries: Fisheries Research and Development
Authority	National	Mrs	Sue	Middleton	Chief Director	Department of Agriculture, Forestry and Fisheries: Fisheries Operational Support
Authority	National	Mr	Muzi	Mkhize	Chief Director	Department of Energy: Hydrocarbons
Authority	National	Dr	Kim	Prochazka	Director	Department of Agriculture, Forestry and Fisheries: Resources Research
Authority	National	Mrs	Veronica	Mangala	Chief Inspector	Department of Agriculture, Forestry and Fisheries: Cetane
Authority	National	Mr	Deon	Durholtz		Department of Agriculture, Forestry and Fisheries
Authority	National	Mrs	Janet	Coetzee		Department of Agriculture, Forestry and Fisheries: Resource Research
Authority	National	Mr	Chris	Wilkie		Department of Agriculture Forestry and Fisheries
Authority	National	Mr	Charles	Ashford	Air Navigation	Civil Aviation Authority (Department of Transport)
Authority	National	Ms	Briege	Williams	Heritage Officer	South African Heritage Resources Agency (SAHRA)
Authority	National	Mr	John	Gibble	Acting Manager	South African Heritage Resources Agency (SAHRA)
Authority	National	Ms	Elizabeth	Mahlangu	PA to CEO	SANParks

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Authority	National	Captain	Ravi	Naicker	National Operations Manager : Centre for Sea Watch & Response	South African Maritime Safety Authority (SAMSA)
Authority	National	Mr	Daron	Burgess		South African Maritime Safety Authority (SAMSA)
Authority	National	Mr	Dave	Manley		South African Maritime Safety Authority (SAMSA)
Authority	National	Ms/Mr	M	Brkovic		South African Maritime Safety Authority (SAMSA)
Authority	Provincial	Mr	Hopewell	Mkhize	Principal Officer	South African Maritime Safety Authority (SAMSA) (Durban)
Authority	Provincial	Cpt		Lobo	Principal Officer	South African Maritime Safety Authority (SAMSA) (Richards Bay)
Authority	Provincial	Mr	Thando	Tubane	Head of Department	KZN Department of Cooperative Governance and Traditional Affairs
Authority	Provincial	Ms	N	Khanyile	Regional Manager	KZN Department of Mineral Resources
Authority	Provincial	Mr	Sibusiso	Myeza	Deputy Director General: Intergrated Economic Development Services	KZN Department of Economic Development, Tourism and Environmental Affairs
Authority	Provincial	Mr	Omar	Parak	Coastal and Biodiversity Management Unit	KZN Department of Economic Development, Tourism and Environmental Affairs
Authority	Provincial	Mr	Bonisiwe	Sithole	Coastal and Biodiversity Management Unit	KZN Department of Economic Development, Tourism and Environmental Affairs
Authority	Provincial	Mr	Kim	van Heerden		KZN Department of Economic Development, Tourism and Environmental Affairs
Authority	Provincial	Mr	Nombulelo	Zungu		KZN Department of Economic Development, Tourism and Environmental Affairs
Authority	Provincial	Dr	Peter	Kuyler		KZN Department of Agriculture and Environmental Affairs
Authority	Provincial	Mr	Vishnu	Govender	Managing Director	KZN Department of Cooperative Governance and Traditional Affairs
Authority	Provincial	Mr		Mzila	Director	KZN Department of Cooperative Governance and Traditional Affairs

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Authority	Provincial	Ms	Nerissa	Pillay	eThekwini Region	Ezemvelo KZN Wildlife
Authority	Provincial	Mr	Santosh	Bachoo	Marine Ecologist	Ezemvelo KZN Wildlife
Authority	Provincial	Mr	Andy	Blackmore	Integrated Environmental Management Unit	Ezemvelo KZN Wildlife
Authority	Provincial	Mr	Cedric	Coetzee		Ezemvelo KZN Wildlife
Authority	Provincial	Mr	Kevin	Green	uMhlathuze Region	Ezemvelo KZN Wildlife
Authority	Provincial	Ms	Tamsyn	Livingstone		Ezemvelo KZN Wildlife
Authority	Provincial	Mr	George	Nair	eThekwini Region	Ezemvelo KZN Wildlife
Authority	District Municipal	Mrs	Adelaide	Dlamini	Municipal Manager	Harry Gwala District Municipality
Authority	District Municipal	Clr	AS	Mazibuko	Mayor	Uthukela District Municipality
Authority	District Municipal	Mrs	Noloyiso	Nkgeto	Coastal Management Committee secretariat	Ugu District Municipality
Authority	District Municipal	Mr	DD	Naidoo	Municipal Manager	Ugu District Municipality
Authority	District Municipal					Umzinyathi District Municipality
Authority	District Municipal	Mr	SM	Mkhombo		Umkhanyakude District Municipality
Authority	District Municipal	Mrs	Nonhlanhla	Gamede	Municipal Manager	iLembe District Municipality
Authority	District Municipal		M	Pumes		Amajuba District Municipality
Authority	District Municipal	Mr	Mandla	Nkosi	Municipal Manager	uThungulu District Municipality
Authority	Metropolitan Municipal	Ms/Mr	Peron	Amein		eThekwini Municipality

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Authority	Metropolitan Municipal	Mr	Sean	O'Donoghue	Acting Manager: Climate Protection Branch	eThekwini Municipality
Authority	Metropolitan Municipal	Mr	Sipho	Nzuza	City Manager	eThekwini Municipality
Authority	Local Municipal	Mr	Chumisa	Thengwa	Manager: Biodiversity Impact Assessment	eThekwini Municipality
Authority	Local Municipal	Mr	Sihle Maxwell	Mbili	Municipal Manager	Ray Nkonyeni Municipality
Authority	Local Municipal	Ms	Bridgette	Turrell	Acting PA	Ray Nkonyeni Municipality
Authority	District Municipal	Mr	Terence Lancelot Sibusiso	Khuzwayo	Municipal Manager	uMgungundlovu District Municipality
Authority	Local Municipal	Mr	X	Luthuli	Municipal Manager	Umdoni Local Municipality
Authority	Local Municipal	Ms	NC	Mgijima	Municipal Manager	Umzumbe Local Municipality
Authority	Local Municipal	Ms	N	Mgwatyu	Municipal Manager's PA	Umzumbe Local Municipality
Authority	Local Municipal	Mr	Nathi	Mthethwa	Chief Operations Officer	uMhlathuze Local Municipality
Authority	Local Municipal	Mr	KC	Zulu	Municipal Manager (Acting)	uMlalazi Local Municipality
Authority	Local Municipal	Mr	Nhlanhla J	Sibeko	Municipal Manager	uMhlathuze Local Municipality
Authority	District Municipal	CLlr	Inkosi Mzamo	Buthelezi	Mayor	Zululand District Municipality
Authority	Local Municipal	CLlr	Ricardo	Mthembu	Mayor	KwaDukuza Local Municipality
Authority	Local Municipal	CLlr	SB	Zulu	Mayor	Mandeni Local Municipality
Authority	Local Municipal	Ms/Mr	F	Mhlongo		Hibiscus Coast Local Municipality
Authority	Parks	Ms	Terri	Castis	Director Commercial Development	iSimangaliso Wetland Park Authority
Authority	Parks	Mr	Andrew	Zaloumis	CEO	iSimangaliso Wetland Park Authority

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Authority	Parks	Mr	Thembi	Buthelezi		iSimangaliso Wetland Park Authority
Authority	Navy	Captain	A	Kampfer	Captain	South African Navy Hydrographic Office
Authority	Other Government Agency	Ms/Mr	Aradhana	Dasarath	Legal & Compliance: Environmental Management	Transnet National Ports Authority
Authority	Ports	Mr	Faisal	Sultan		Transnet National Ports Authority
Authority	Ports	Mr	Brynn	Adamson		Transnet National Ports Authority
Authority	Ports	Mr	Temba	Mkhize	Environmental Manager	Transnet National Ports Authority
Authority	Ports	Mr	Ricky	Bhikraj	Port Manager	Transnet National Ports Authority: Port of Durban
Authority	Ports	Mr	Khosi	Zondi	Environmental Manager	Transnet National Ports Authority: Port of Durban
Authority	Ports	Mr	Preston	Khomo	Port Manager	Transnet National Ports Authority: Port of Richards Bay
Authority	Ports	Mr	Neal	Naidoo	Environmental Specialist	Transnet
Authority	Ports	Mr	Vuyo	Keswa	Environmental Manager	Transnet National Ports Authority: Port of Richards Bay
Industry	Fishing	Mr	Chris	Hamel		Africa Tuna Traders
Industry	Fishing	Mr	Andrew	Kaye	Chairman	Association of Small Hake Industries
Industry	Fishing	Mr	Pierre	Rocher	Managing Director	Blue Continent Products (Pty) Ltd
Industry	Fishing	Mr	Mike	Sands		Blue Continent Products (Pty) Ltd
Industry	Fishing	Mr	Judian	Bruk		Demersal Shark Longline Association
Industry	Fishing	Mr	Sandile			Eyethu Fishing
Industry	Fishing	Mr	Jeremy	Marillier	Deputy	Fish SA
Industry	Fishing	Mr	Suleiman	Salie	Chairman	Fish SA
Industry	Fishing	Mr	Achmat	Abrahams		Fresh Tuna Exporters Association
Industry	Fishing	Mr	Blanche	Damons		Fresh Tuna Exporters Association
Industry	Fishing	Mr	Achmat	Abrahams		Fresh Tuna Exporters Association
Industry	Fishing	Mr	Alex	Penglides		Hackey Fishing
Industry	Fishing	Mr	Bok Jin	Jung		Hanill Shipping
Industry	Fishing		Jerome	Solomon		I&J- Operations Centre

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Industry	Fishing	Ms	Renée	Welby-Cooke		I&J
Industry	Fishing	Mr	Aiko	Koyama		Japan Marine
Industry	Fishing	Mr	Rob	Giddey		KZN Longline Tuna /Big Catch (Pty) Ltd
Industry	Fishing	Mr	Bobby	Naidoo		KZN Small Marine Business Association
Industry	Fishing	Mr	Salome			Live Fish Tanks
Industry	Fishing	Mr	Lionel	Shaer		Lusitania
Industry	Fishing	Mr	Wayne Cothill	Marzul		Marzul Fishing
Industry	Fishing	Mr	U	Ally		Natal Rock and Surf Angling Association
Industry	Fishing	Mr	Douglas	Goswell		Ocean Trawling
Industry	Fishing	Mr	Gert	du Plessis		Pioneer Fishing
Industry	Fishing	Mr	Shaun			Premier Fishing
Industry	Fishing	Mr	Johan			Premier Fishing
Industry	Fishing	Mr	Len	Harvey		Richards Bay Commercial Linefishers Association
Industry	Fishing	Mr	Walter			Seaharvest
Industry	Fishing	Mr	Tim			Select a fish
Industry	Fishing	Mr	Nivalda	Fernandes		Shark Longline Association
Industry	Fishing	Ms	Clair	Attwood		South African Commercial Fisherman
Industry	Fishing	Mr	Wally	Croome		South African Commercial Line Fishing Association
Industry	Fishing	Mr	Craig	Hagan		South African Deep Sea Angling Association
Industry	Fishing	Dr	Bruce	Jones	For Natal: Resource Management/ Environmental Officer	South African/ Natal Deep Sea Angling Association
Industry	Fishing	Mr	Marius	Vermaak		South African Deep Sea Angling Association
Industry	Fishing	Mr	Johann	Augustyn	The Secretary	South African Deep Sea Trawling Industry Association
Industry	Fishing	Mr	Dan	De Villiers		South African Inshore Fishing Industry Association
Industry	Fishing	Mr	Peter	Foley		South African Pelegic Fish Industry Association
Industry	Fishing	Mr	Dino	Moodaley		South African Squid Management Industrial Association
Industry	Fishing	Dr	Eugene	van Niekerk	Chairperson	South African Squid Management Industrial Association

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Industry	Fishing	Mr	Richard	Ball	Secretary	South African Tuna Longline Association
Industry	Fishing	Mr	Clyde	Bodenham		South African Tuna Association
Industry	Fishing	Mr	Don	Lucas	Chairman of SA tuna	South African Tuna Longline Association/Combined Fishing Enterprise
Industry	Fishing	Ms	Belinda	Roux	Representative	KZN Tuna
Industry	Fishing	Mr	Shaun	Bhana		South Coast Rock Lobster Association
Industry	Fishing	Ms/Mr	Ilona	Sorenson		Spray Fishing
Industry	Fishing	Mr	Nishikawa			Taiyo Fishing
Industry	Fishing	Mr	Mandy	Naidoo	admin	Viking Fishing
Industry	Fishing	Mr	Rudie	Botha		Viking Fishing
Industry	Fishing	Mr	Craig	Bacon		Viking Fishing
Industry	Fishing	Mr	Rory	Williams		Viking Fishing
Industry	Fishing	Ms/rs	Tracy	Berry	Manager	Viking Fishing
Industry	Fishing	Mr	Rudy	Botha	Shore Skipper	Viking Fishing
Industry	Fishing	Mr	Greg	Christy		DMA Fishing
Industry	Fishing	Mr	Andrew	Kaye		Kaytrad Fishing Company
Industry	Fishing	Mr	Mark	Rowe		Balobi Group
NGO	Environmental	Ms	Carolyn	Schwegman		Coastwatch
NGO	Environmental	Mr	Paddy	Norman		Coastwatch
NGO	Environmental	Ms	Nan	Rice	Secretary	Dolphin Action & Protection Group
NGO	Environmental	Ms	Norma	Patrick		Ocean Watch South Africa
NGO	Environmental	Ms	Mia	du Plessis		Ocean Watch South Africa
NGO	Environmental	Mr	Dave	Halle		South Coast Conservation Forum
NGO	Environmental	Mr	Desmond	D'sa		South Durban Community Environmental Alliance
NGO	Environmental	Mr	Morgan	Griffiths		Wildlife and Environment Society of South Africa (WESSA) KZN
NGO	Environmental	Mr	Chris	Galliers		Wildlife and Environment Society of South Africa (WESSA) KZN
NGO	Environmental	Ms	Bianca	McKelvey Morgan		Wildlife and Environment Society of South Africa (WESSA) KZN
NGO	Environmental	Ms	Wanda	Stadler		Wildlife and Environment Society of South Africa (WESSA) KZN

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
NGO	Environmental	Mr	Junaid	Francis	Seafood Industry Liaison Officer, Biodiversity Unit, Sustainable Fisheries Programme,	World Wildlife Federation- South Africa
NGO	Environmental	Mr	John	Duncan	Senior Manager: Marine Programme	World Wildlife Federation- South Africa
NGO	Environmental	Ms	Samantha	Petersen	Manager	World Wildlife Federation- South Africa
NGO	Environmental	Mr	Gareth	Roberts	Project Manager	Zinkwazi Blythedale Conservancy
NGO	Environmental					Conservation KZN
NGO	Health and Safety					NSRI
Industry	Environmental Services	Mr	Dave	Japp	Director	CAPFISH
Industry	Oil and Gas	Mr	Neil	Robertson	Acting Vice President: New Ventures Upstream	PetroSA
Industry	Oil and Gas	Ms	Eileen	Douse	Operations SHEQ Manager	PetroSA
Industry	Oil and Gas	Mr	Siphiwe	Msipho	Strategy and Commercial	PetroSA
Industry	Oil and Gas	Mr	Lee	Kong Ling		Silver Wave Energy PTE Ltd
Industry	Oil and Gas	Mr	Charles	Ramsden		Silver Wave Energy PTE Ltd
Industry	Oil and Gas	Ms/Mr	Mthozami	Xiphu	Acting Director	South African Oil and Gas Alliance
Industry	Oil and Gas	Ms/Mr	Avhaphani	Tshifularo	Managing Director	South African Petroleum Industry Association
Industry	Oil and Gas	Ms	Heidi	Webber		OPASA
Industry	Oil and Gas	Mr	Sean	Lunn		
Industry	Oil and Gas	Mr	Dan	Jacofsky		ExxonMobil Exploration Company
Industry	Oil and Gas	Mr	Mike	Doherty	Chairman	Impact Africa Limited
Industry	Oil and Gas	Mr	Steve	Ilett		Impact Africa Limited
Research	Biodiversity	Dr	V	Cockcroft		Centre for Dolphin Studies
Research	Biodiversity	Mr	Harry	Mbambo	Executive Business Development	Kwazulu Natal Sharks Board
Research	Biodiversity	Mr	Mike	Anderson-Reade		Kwazulu Natal Sharks Board

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Research	Biodiversity	Ms	Debbie	Hargreaves	PR/Edu Man	Kwazulu Natal Sharks Board
Research	Biodiversity	Mr	Larry	Oellermann	Director	Oceanographic Research Institute
Research	Biodiversity	Mr	Bruce	Mann		Oceanographic Research Institute
Research	Biodiversity	Dr	Kerry	Sink	Marine Program Manager	South African National Biodiversity Institute
Research	Biodiversity	Dr	Albert	van Jaarsveld	Vice Chancellor	University of Kwa Zulu Natal
Research	Biodiversity	Mr	David	Glassom		University of Kwa Zulu Natal
Research	Marine	Mr	Douglas	Oliver		CSIR
Research	Marine	Mr	Greg	Hofmeyer		Bayworld
Research	Biodiversity	Mr	William	Froneman		Rhodes University
Research	Marine					University of Zululand - Coastal Research Unit
Research	Biodiversity					Durban University of Technology
Research	Biodiversity					Mangosuthu University of Tecnology
Research	Biodiversity	Mr	Pierre	Pistorius		Nelson Mandela Metropolitan University
Research	Biodiversity	Ms	Michelle	Caputo		Nelson Mandela Metropolitan University
Research	Biodiversity	Dr	Ronel	Nel		Nelson Mandela Metropolitan University
Research	Biodiversity	Ms	Stephanie	Plon	Marine Mammal Scientist	SA Institute for Aquatic Biodiversity (SAIAB) and NNMU
Public	Marine	Ms	Juliet	Hermes	Node Manager	SAEON - Egagasini Node
Public	Marine Recreation	Cpt	Mike	Cooper	Vice President	Bluff Yacht Club
Public	Marine Recreation	Mr	Don	Whitaker		KZN Yachting Association
Public	Marine Recreation	Comm.	Alexander	Campbell		Point Yacht Club
Public	Marine Recreation	Mr	Richard	Crockett		Royal Natal Yacht Club
Public	Marine Recreation					Zululand Yacht Club
Public	Marine Recreation					Richards Bay Ski Boat Club
Public	Marine Recreation					Meerensee Ski Boat Club
Public	Marine Recreation					Sodwana dive company

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Public	Marine Recreation					Aliwal shoal dive company
Public	Marine Recreation					Zululand Kayak club
Public	Marine Recreation					Expert tours
Public	Marine Recreation	Mr	Dannie			St Lucia Tours & Charters
Public	Marine Recreation					Oceans Africa
Public	Marine Recreation	Mr	Lloyd	Edwards		Raggy Charters
Public	Interested Party	Dr	Ken	Findlay		Mammal Institute / Iziko Museum
Public	Interested Party	Ms	Denise	Hamerton		Mammal Institute / Iziko Museum
Industry	Marine Transport	Mr	Herman	Venter		GAC Shipping (SA) (Pty) Ltd
Industry	Marine Transport	Mr	Andrew	Howell		Offshore Shipping Supplies
Industry	Marine Transport	Mr	Raphaell	Lawrence	Operations Director	Saldanha Freight Services
Industry	Marine Transport	Mr	Nils	Warner		Wallem Shipping South Africa (Pty) Ltd
Industry	Marine Transport	Mr	Guy			World Shipping Agencies
NGO	Environmental					Groundwork
NGO	Environmental	Ms	Yolan	Friedmann	CEO	Endangered Wildlife Trust EWT
Public	Interested Party	Ms	Janet	Solomon		Vanishing Present Productions
Public	Interested Party	Ms	Judy	Bell		Frackfreesa
NGO	Environmental	Ms	Jennifer	Olbers	Marine Ecologist	Ezemvelo KZN Wildlife, Scientific Services
Industry	Fishing	Mr	Andre	Hector		Hacky Fishing (Pty) Ltd
NGO	Environmental	Ms	Sandy	Camminga	Director	Richards Bay Clean Air Association (RBCAA)
Public	Environmental	Dr	Sean	O'Donoghue		Personal
NGO	Environmental	Ms	Janet	Cuthbertson		Suni Ridge
Industry	Interested Party	Mr	Percy	Langa	SHEQ Manager	Richards Bay Industrial Development Zone

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Public	Interested Party	Ms	Shanice	Gomes		South Durban Community Environmental Alliance (SDCEA)
Industry	Interested Party	Mr	Madimetja	Lephoto		Alectrona Consulting (Pty)Ltd
Public	Interested Party	Dr	Adrian	Nel		University of KZN
Public	Interested Party	Mr	Petrus	Viviers		
Public	Interested Party	Mr	Chadley	Joseph		South Durban Community Environmental Alliance (SDCEA)
Public	Interested Party		Sabine	Wintner	KZN Sharks Board	Kwazulu-Natal Sharks Board
Public	Interested Party	Mr	Duminsani	Myeni		
Public	Interested Party	Ms	Suvana	Alakram		Resident
Public	Interested Party	Mr	Kevin	Cole		East London Museum
Public	Interested Party	Mr	Lourens	Britz		
Public	Interested Party	Ms	Riette	Bennett		Advantage Tours
Public	Interested Party	Mrs	Debbie	Smith		Stokkiesdraai
Public	Interested Party		Alex and Ann	Paretas-Brosens		Kwalucia Enterprises (Pty)Ltd
Public	Interested Party	Mrs	Adel	Scheidle		Avalone Guesthouse
Public	Interested Party	Mr	Sean	Scheidle		Avalone Guesthouse
Public	Interested Party	Mr	Elsa	Karam		
Public	Interested Party	Mr	John	Field		Private
Public	Interested Party	Mr	Barend	Verster		Fishermans Restaurant & Wave Dancer Charters
Public	Interested Party	Ms	Caroline	Fox		Ezemvelo KZN Wildlife
Public	Interested Party	Mrs	Simphiwe	Mbonambi		Mbanambi Traditional Authority
Public	Interested Party	Mrs	Norma	Patrick		POD abd Iceabwatcg SA
Public	Interested Party	Mr	Eghard	Greyling		J.S Greyling Trust
Public	Interested Party		Siboniso	Mbense		iSimangoliso Wetland Park Authority
Public	Interested Party		Phumlani	Lugagu		iSimangoliso Wetland Park Authority
Public	Interested Party		Dieter	Heinsohn		ACER Africa Environmental Consultants
Public	Interested Party	Mr	Deon	Steyn		Elephant Lake Group
Public	Interested Party	Mrs	Norma	Hall		
NGO	Interested Party	Mr	Jon	Marshall	Vice Chairman	Coastwatch KZN
Public	Interested Party	Mrs	Bonisile	Mthembu		Department of Education
Public	Interested Party	Mr	Donald	Pittindrigh		Indus Automation & Systems Intergration
Public	Interested Party	Mr	McDonald	Mutsvangwa		
Public	Interested Party	Mr	John	Cawood	Owner	

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Public	Interested Party	Ms	Sharin	Govender	Project Manager:Environmental Planning	City of uMhlathuze
Public	Interested Party	Mr	Niall	Kramer		
Public	Interested Party	Mr	Desmond	D'sa	SDCEA Coordinator	South Durban Community Environmental Alliance (SDCEA)
Public	Interested Party	Mr	AJ	Laas	Private	
Public	Interested Party	Ms	Imke	Summers	Private	
Public	Interested Party	Mr	Samuel	Chademana	Climate and Energy Justice Campaign Manager	Groundwork
Public	Interested Party	Ms	Jacquette	Adamson		Exigent Environmental
Public	Interested Party	Ms	Dee	Fischer	Chief Director: Intergrated Environmental Management Support	Department of Environmental Affairs
Public	Interested Party	Mr.	Paul	Phelan	Private	
Public	Interested Party	Ms	Tamlyn	Jolly	Senior Journalist	Zululand Observer
Public	Interested Party	Mr.	Warren	Hale	Private	
Public	Interested Party	Mr.	Khalid	Mather		KZN Environmental Network
Public	Interested Party	MS	Anne	Louw		ICM People South Africa (Pty) Ltd
Public	Interested Party	Mr	Fred	Kockott	Director	Roving Reporters
Public	Interested Party	Mr	Frans	Van der Walt	Quantity Surveyor	QS2000
Public	Interested Party	Mr	Matthew	Hemming	Private	
Public	Interested Party	Ms	Cheryl	Smart	Lawyer	Advocates Group Seven North
Public	Interested Party	Mr	Willem	Hofland	Private	
Public	Interested Party	Mr	Elise	Tempelhoff	Environmental Specialist Journalist	Netwek24 Beeld
Public	Interested Party	Mr	Clive	Reid		SynergyWorldWideLogistics
Public	Interested Party	Ms	Nuala	Gage		Intertek Industry Services
Public	Interested Party	Mr	Enrico	Ganter		Falconmere (Pty)Ltd
Public	Interested Party	Mr	Dries	Laas	Production Designer	Bell Equipment Company SA (Pty)Ltd
Public	Interested Party	Mrs	Mareike	Straueli	Environmental Consultant	ACER Africa Environmental Consultants
Public	Interested Party	Ms	Dilene			
Public	Interested Party	Ms	Catherine	Lea	Private	
Public	Interested Party		Ndoda	Biyela	Private	MD Ukhaba Investments
Public	Interested Party	Mr	Andrew	Dippenaar	Manager: GeoScience Specialist and Data Suppoer	PetroSA - New Venture Upstres

Stakeholder Type	Stakeholder Subtype	Title	Name	Surname	Position	Organisation
Public	Interested Party	Ms	Nicole	Joubert		Lovemore Bro's Machine Movers and Riggers

Annex B2

Initial Notification Material

Annex B2.1

Notification

**Environmental
Resources
Management**

2nd Floor
Great Westerford
240 Main Road, Rondebosch
7700, Cape Town, South Africa

Postnet Suite 90
Private Bag X12
Tokai, 7966
Cape Town, South Africa

Tel: +27 21 681 5400
Fax: +27 21 686 0736
www.erm.com



15 September

ERM Ref: 0414229

Dear Stakeholder,

RE: Environmental Impact Assessment for an Exploration Drilling Campaign within Block ER236, offshore of the East Coast of South Africa

Dear Stakeholder

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an exploration right off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 (12/3/236) to assess the commercial viability of the hydrocarbon reservoir for future development.

The Project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR), through the Petroleum Agency South Africa (PASA). The authorisation would be under the National Environmental Management Act (NEMA) (Act No. 107 of 1998).

This notification serves to announce the commencement of the EIA process. For further information about the Project and associated EIA, as well as the public participation process, please refer to the attached Background Information Document.

To register as an Interested and Affected Party I&AP please contact Charlene Jefferies of ERM:

Tel: 021 681 5400

Email: eni.offshore.eia@erm.com

Postal address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Visit the Project website: www.erm.com/eniexplorationeia

Yours Sincerely

Yours sincerely

ERM Team

Registered Office Address
Environmental Resources Management
Southern Africa (Pty) Ltd
1st Floor, Building 32
The Woodlands Office Park
Woodlands Drive, Woodmead
2148, Johannesburg, South Africa

Company Registration Number
2003/001404/07

Directors
Claudio Bertora
Urmilla Bob (Non-Executive)
Linda Kumbemba
Tania Swanepoel
Marinda Rasmussen

**A member of the Environmental
Resources Management Group**

Notification of Environmental Impact Assessment: Exploration Drilling within Offshore Block ER236, South Africa

Lindsey Bungartz on behalf of ERM South Africa Project ENI Offshore Expl

Reply all |

Fri 2017-09-15 11:57 AM

To: Lindsey Bungartz; 'Charlene Jefferies'

Bcc: Molefe.Morokane@dmr.gov.za; khayaletu.matrose@dmr.gov.za; mamabefu.modipa@dmr.gov.za; kefilwe.chibogo@dmr.gov.za; motlountg@petroleumagencysa.com; mekwel@petroleumagencysa.com; ngesip@petroleumagencysa.com; mushwanas@petroleumagencysa.com; vanderspuyd@petroleumagencysa.com; msolomons@environment.gov.za; nngcaba@environment.gov.za; DG@environment.gov.za; Ypeterson@environment.gov.za; smunzhedzi@environment.gov.za; Gpopose@environment.gov.za; jmphepya@environment.gov.za; AndrewC@daff.gov.za; Mmeyer@environment.gov.za; oosthuiz@environment.gov.za; ajboyd@environment.gov.za; SiphokaziN@daff.gov.za; JusticeMA@daff.gov.za; SueM@daff.gov.za; muzi.mkhize@energy.gov.za; KimP@daff.gov.za; VeronicaM@daff.gov.za; DeonD@daff.gov.za; JanetC@daff.gov.za; christopherw@daff.gov.za; aats@caa.co.za; bwilliams@sahra.org.za; ane.oosthuizen@nnmu.ac.za; rnaicker@samsa.org.za; DBurgess@samsa.org.za; dmanley@samsa.org.za; mbrkovic@samsa.org.za; mmpisana@samsa.org.za; wlobo@samsa.org.za; kznonline@kznpremier.gov.za; Nqobile.khanyile@Dmr.gov.za; Sibusiso.Myeza@kznedtea.gov.za; omar.parak@kznedtea.gov.za; bonisiwe.sithole@kznedtea.gov.za; kim.vanheerden@kznedtea.gov.za; nombulelo.zungu@kznedtea.gov.za; Peter.Kuyler@kzndard.gov.za; vishnu.govender@kzncogta.gov.za; nonhlanhla.qhobosheane@kzncogta.gov.za; communications@kzncogta.gov.za; bachoos@kznwildlife.com; andyb@kznwildlife.com; cedricc@kznwildlife.com; greenk@kznwildlife.com; livingst@kznwildlife.com; nairg@kznwildlife.com; mayor@uthukeladm.co.za; Noloyiso.nkqeto@ugu.gov.za; DD.Naidoo@ugu.gov.za; rc3@umzinyathi.gov.za; communications@ukdm.gov.za; mpumes@amajuba.gov.za; malulun@amajuba.gov.za; sceo@kingcetchwayo.gov.za; AmeinP@durban.gov.za; ODonoghueS@durban.gov.za; metroceo@durban.gov.za; chumisa.thengwa@durban.gov.za; mm@mm.gov.za; bridget.turrell@rnm.gov.za; sibusiso.khuzwayo@umdm.gov.za; karenp@umdoni.gov.za; mmoffice@umdoni.gov.za; kavershens@umdoni.gov.za; thulas@umzumbe.gov.za; hlengiwe@umzumbe.gov.za; sibekonj@richemp.org.za; info@zululand.org.za; thembi@isimangaliso.com; ricardom@kwadukuza.gov.za; sphe.zulu@mandeni.gov.za; feziwe.mhlongo@hcm.gov.za; lindy@isimangaliso.com; thembi@isimangaliso.com; thembi@isimangaliso.com; hydrosan@iafrica.com; aradhana.dasarath@transnet.net; Faisal.Sultan@transnet.net; Brynn.Adamson@transnet.net; themba.mkhize@transnet.net; ricky.bhikraj@transnet.net; khosi.zondi@transnet.net; thami.ntshingila@transnet.net; neal.naidoo@transnet.net; vuyo.keswa2@transnet.net; chris@africantuna.com; andrew@kaytrad.co.za; procher@bluecon.co.za; msands@bluecon.co.za; judianbruk@telkomsa.net; sandile@eyethufishing.co.za; suleimans@bluecon.co.za; deepsea@iafrica.com; jeremy@fishsa.org; sfadmin@seafreeze.co.za; ftea@telkomsa.net; longline@mweb.co.za; priscauys@yahoo.com; cttopsradio@ij.co.za; ReneC@ij.co.za; agency@jmss.co.za; rob@kzntuna.com; hans@bigcatch.co.za; luckyladyfishing@gmail.com; salome@lft.co.za; lshaer@lusitaniafishing.co.za; marzul@iafrica.com; gd@goswell.co.za; gduplessis@pioneerfishing.co.za; shaunb@premfish.co.za; johanp@premfish.co.za;

harveya@telkomsa.net; aharvey@absamail.co.za; Walterb@seaharvest.co.za;
 tim@selectafish.co.za; nivalda@yant.co.za; cattwood@mweb.co.za; ladymfishing@telkomsa.net;
 craig@hdpbrokers.co.za; admin@sadsaa.com; bruce@windlands.co.za;
 mjvermaak@worldonline.co.za; johann@sadstia.co.za; dan@new.co.za; safish@new.co.za;
 sasmia@webec.co.za; Dino@talhado.co.za; sasmia@webec.co.za; aqfishing@mweb.co.za;
 rball@iafrica.com; sata@mweb.co.za; clyde@molimoman.co.za; don@comfish.co.za;
 comfish@mweb.co.za; Belinda@kzntuna.com; shaunb@premfish.co.za; kgfishing@mweb.co.za;
 taiyoct@mweb.co.za; angie@vikingfishing.co.za; durbanshore@vikingfishing.co.za;
 craig@vikingfishing.co.za; rory@vikingfishing.co.za; prawn@vikingfishing.co.za;
 durbanshore@vikingfishing.co.za; gregchristy@intekom.co.za; andrew@kaytrad.co.za;
 mark@balobi.com; afromatz@telkomsa.net; paddyn@telkomsa.net; mwdapg@mweb.co.za;
 norma.patrick8@gmail.com; mia@oceanwatchsa.co.za; david@halle.co.za; priya@sdceango.co.za;
 desmond@sdceango.co.za; dianadold@telkomsa.net; christopher.galliers@wessa.co.za;
 conservation@wessakzn.org.za; wstadler@wessakzn.org.za; jfrancis@wwf.org.za;
 jduncan@wwf.org.za; spetersen@wwf.org.za; lowertugela@gmail.com; secretary@kznca.org.za;
 info@searescue.org.za; japp.david@gmail.com; neil.robertson@petrosa.co.za;
 eileen.douse@petrosa.co.za; siphawe.msipho@petrosa.co.za; Klllee824@yahoo.com.sg;
 crramsden@gmail.com; mxiphu@offshoreafrica.co.za; fani@sapia.co.za;
 s.lunn@impactoilandgas.co.uk; dan.s.jackofsky@exxonmobil.com;
 m.doherty@impactoilandgas.co.uk; s.ilett@impactoilandgas.co.uk; cdswhale@worldonline.co.za;
 mbambo@shark.co.za; malpha@shark.co.za; hargreaves@shark.co.za; ori@saambr.org.za;
 jessica@saambr.org.za; bruce@ori.org.za; k.sink@sanbi.org.za; msomij@ukzn.ac.za;
 glassom@ukzn.ac.za; doliver@csir.co.za; greghofmeyr@gmail.com; w.froneman@ru.ac.za;
 Pierre.Pistorius@nmmu.ac.za; michellecaputo3@gmail.com; ronel.nel@nmmu.ac.za;
 stephanie.plon@nmmu.ac.za; juliet@saeon.ac.za; bluffyachtclub@xsinet.co.za;
 kzn@sailing.org.za; alexander@alexandercox.co.za; editor@sailing.co.za; info@msbc.co.za;
 greg@sodwanadiving.co.za; dive@aliwalshoal.co.za; ZululandKC@gmail.com;
 info@expert-tours.com; advantage@zululink.co.za; info@oceansafrica.com;
 lloyd@raggycharters.co.za; kenfin@mweb.co.za; pbest@iziko.org.za; southafrica@gacworld.com;
 offshore@mweb.co.za; raphaell@safreight.co.za; new@wallem.com;
 nils.warner@worldshipping.co.za; team@groundwork.org.za; yolanf@ewt.org.za;
 Claire Alborough; Khosi Dlamini; Ingeborg McNicoll

Sent Items

BID_Eni_Exploration_S...

2 MB

Download Save to OneDrive - The ERM Group, Inc.

Dear Stakeholder

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an exploration right off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 (12/3/236) to assess the commercial viability of the hydrocarbon reservoir for future development.

The Project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR), through the Petroleum Agency South Africa (PASA). The authorisation would be under the National Environmental Management Act (NEMA) (Act No. 107 of 1998).

This notification serves to announce the commencement of the EIA process. For further information about the Project and associated EIA, as well as the public participation process, please refer to the attached Background Information Document.

To register as an Interested and Affected Party I&AP please contact Charlene Jefferies of ERM:

Tel: 021 681 5400

Email: eni.offshore.eia@erm.com

Postal address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Visit the Project website: www.erm.com/eni-exploration-eia

Yours Sincerely

ERM Team

ERM Southern Africa (Pty) Ltd

2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa

T +27 21 681 5400 | **F** +27 21 686 0736

W www.erm.com



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Annex B2.2

Adverts



Legals & Tenders

Public Notices Public Notices Public Notices Tenders Tenders Tenders

ERM Reference Number: 0414229

Environmental Impact Assessment for an Exploration Drilling Campaign within Block ER236, off the East Coast of South Africa

INVITATION TO REGISTER AND COMMENT

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an Exploration Right 12/3/236 (ER 236) off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 to assess the commercial viability of the hydrocarbons reservoir for future development.

The Project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR) under the National Environmental Management Act (NEMA) (Act No. 107 of 1998), as amended, through an Environmental Impact Assessment (EIA) process.

Notice is hereby given of the commencement of the EIA and associated public participation process required under NEMA. The proposed project triggers a number of Listed Activities, including the following, in terms of the EIA Regulations of 2014 (as amended in April 2017):

Activity 18 Listing Notice 2 GN R984: Any activity including the operation of that activity which requires an exploration right as contemplated in section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including —

(a) associated infrastructure, structures and earthworks; or

(b) the primary processing of a petroleum resource including winning, extraction, classifying, concentrating or water removal, but excluding the secondary processing of a petroleum resource, including the beneficiation or refining of gas, oil or petroleum products in which case activity 5 in this Notice applies.

Stakeholders are invited to register as Interested and Affected Parties (I&APs) and to participate in the EIA process by identifying issues of concern and providing suggestions to enhance benefits. A draft Scoping Report and draft Environmental Impact Assessment Report will be made available for comment during the EIA process. Registered I&APs will be kept informed about the Project and will be notified of engagement meetings and when reports are available for comment.

To register as an I&AP, submit comments, and to obtain more information, please contact ERM:

Charlene Jefferies
 Email: eni.offshore.eia@erm.com
 Tel: 021 681 5400
 Postnet Suite 90, Private Bag X12, Tokai, 7966
 Website: www.erm.com/eni-offshore-eia

public works
 Department: Public Works
 PROVINCE OF KWAZULU-NATAL

Notification of Intention to Award

No	Wims No.	Project Name	Discipline	Service description
1.	064688	Murchison Hospital	Mechanical Engineer	Replacement of Theatre Air Conditioning
2.	065797	KwaMagwaza (St Maries) Hospital	Civil Engineer (PA)	Installation of 90kl Steel Tank and associated plumbing
3.	065790 and 065795	Ekubungazeleni Clinic and Kwayanguwe Clinic	Civil Engineer (PA)	Re-route the existing sewer line and upgrading of the septic tank
4.	066291	Rietvlei Hospital	Civil Engineer (PA)	Renovations to water and sewer treatment works with Repairs and renovations to building
5.	066045	Church of Scotland Hospital	Electrical Engineer	Replacement of kitchen equipment
6.	063143	Addington Hospital	Architect (PA)	Investigation Of Addington Services: Water, Electricity, Sewer, Storm Water Drain & Boiler Utilities

Kindly note that the names of the recommended bidders will be posted on the Departmental Website and Head Office noticeboard on 18 September 2017.

Withdrawal of bid and intention to award

Kindly note the withdrawal of the intention to award which was advertised in the media and website on 1/09/2017:

No	Wims No.	Project Name	Discipline	Service description
1.	065833	Prince Mahiyeni Hospital	Architect	Kitchen Renovations

Enquiries: Mr. M Mzobe
 Tel: 033-355 5561

Tenders Tenders Tenders

ithala
 DEVELOPMENT FINANCE CORPORATION LIMITED

CANCELLATION OF BID

BID NO.	DESCRIPTION
RFP 02/16	Appointment of specialist service provider to assist with the full scope development and implementation of a new expected loss credit impairment model as required by the new accounting standard IFRS 9

Tenders Tenders Tenders

PROVINCE OF KWAZULU-NATAL
 ISIFUNDAZWE SAKWAZULU-NATALI
 DEPARTMENT OF TRANSPORT
 UMNANYANGO WEZOKUTHUTHA

T1.1 TENDER NOTICE AND INVITATION TO TENDER

CONTRACT NO. ZNT 4128/16T for THE CONSTRUCTION OF CONCRETE BARRIER WALL BETWEEN UMKHANYAKUDE AND MOZAMBIQUE BORDER PHASE 1: KM 0,0 TO KM 8,0 (LABOUR INTENSIVE CONSTRUCTION METHOD)

The Province of KwaZulu-Natal, Department of Transport, invites tenders from Established Contractors, experienced in concrete works, for the construction of concrete barrier wall between uMkhanyakude and Mozambique border: phase 1: km 0,0 to KM 8,0. The duration of the project will be 12 months.

The Established Contractor shall be registered in CIDB contractor grading designation 8CE or Higher with a BBBEE status of level 1.

Subcontract a minimum of 35% of contract value to an EME or QSE which is at least 51% owned by black people who are military veterans/ youth/ women.

A minimum of one decent employment for every R5 million per contract value for the duration of the contract.

Strong emphasis is placed on expanded public works programme principles and on the use of local labour and resources, as well as the training of local labour.

Tender documents will be available as from 10h00 on Monday 18 September 2017 during working hours (i.e., 08h00 to 16h00 Monday to Friday) until 15h00 on the day prior to the Clarification Meeting. The physical address for collection of tender documents is: Department of Transport, Acquisition Section, 'B' Block, 172 Burger Street, Pietermaritzburg.

Queries relating to this tender may be addressed to: Mr.N Ndaba, telephone no. (033) 347 1180, fax no. (086) 568 3806, e-mail address: nhlahlia@impumeleleconsulting.co.za

A compulsory Clarification Meeting with representatives of the Employer will take place at uMhlabuyalingana Local Municipality on Thursday 28 September 2017, starting at 10h00. No latecomers will be admitted.

The closing time for receipt of tenders is 11h00 on Tuesday 17 October 2017. Telegraphic, telephonic, telex, facsimile, electronic, e-mailed and late tenders will not be accepted.

Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the Tender Data.

OPEN TENDER Ver. 2017-04-01: Tender T4

Tenders Tenders Tenders

public works
 Department: Public Works
 PROVINCE OF KWAZULU-NATAL

Intention to Award

The KZN Department of Public Works: Southern Regional Office intends to advertise the following service:

Service : Department of Education: Pholela Circuit Office: Repairs and renovations
 Bid Number : ZNQ UMGDO 052-2016/2017
 Tenderer : Umuziwani Trading (Pty) Ltd
 Tender Amount : R 298 080,00
 BBBEE Points : 20,00
 Contract Period : 4 months

For all your Legal Advertisements
 Contact us on
 Tel: 031 3082004

Legals & Tenders

For all your Legal Advertising
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Sally Hawkins in the Guillermo del Toro standout, *The Shape of Water*.

Brace for a close Best Actress Oscar race

Jacob Stolworthy

AS AWARDS season drew ever nearer, the most exciting Best Actress race in years was manifesting before the eyes of critics and industry folk gathered at the Toronto International Film Festival (TIFF).

Following their initial screenings, films boasting two immensely different yet equally towering performances were on everybody's lips – Frances McDormand for her no-nonsense role in *In Bruges* director Michael McDonagh's black comedy *Three Billboards Outside Ebbing, Missouri* and the star of Guillermo del Toro's standout *The Shape of Water*, Sally Hawkins.

McDormand plays the steely Mildred Hayes in one of those galvanising roles that causes viewers to rub their hands together in glee. Hawkins turns in an astonishing turn playing the mute Elisa Esposito, communicating her way through Del Toro's fantasy tale using sign language.

Both performances will be banded about come next February – nominations are all but guaranteed – aided by the fact the films surrounding them are, simply put, show-stoppers, with Del Toro providing his best film since *Pan's Labyrinth* (2006).

A few days into the festival, however, another actress entered the race in a rather unheralded yet unsurprising fashion: Jessica Chastain, who starts in Aaron Sorkin's very-worshiped directorial debut *Molly's Game*, a memoir adaptation recounting the story of Molly Bloom, an Olympic skier who became investigated by the FBI after running her own poker empire. Chastain is an actress long overdue an Oscar win and in *Molly's Game*, she builds on the powerhouse performance she gave in the underrated *Miss Sloane* to deliver perhaps her best one yet.

Margot Robbie has been gathering chatter for her role as figure skater Tonya Harding in biopic *I, Tonya* ever since her transformation was revealed. While the end product – directed by Craig Gillespie – may be an illuminating, entertaining if overly unremarkable effort, it screams out to be a film in which the central performance elevates its staying power; a nomination for Robbie is inevitable.

Another unremarkable film based on an incredible story comprised of worthy performances is *Battle of the Sexes* which charts the story of tennis champion Billie Jean King's nationally-televised exhibition match opposite self-confessed chauvinist Bobby Riggs in 1973.

Reigning Best Actress stars as King, not so much transforming her appearance as going a tiny bit further out of her comfort zone. It's the kind of performance that'll tickle the appreciation of Academy members and a film that'll gather awards steam.

Hostiles is the new film from Scott Cooper, who directed Jeff Bridges to a deserved Best Actor win for *Crazy Heart* in 2009. The female lead is Rosamund Pike in a performance that proves her astonishing turn in *Gone Girl* was no fluke. Frustratingly, the film is yet to acquire distribution, so it's looking like Pike will miss out on the race this time around.

Two actresses who found themselves talk of the festival were Saoirse Ronan – for her lead role in Greta Gerwig's directorial debut *Lady Bird* (one of the toughest screenings to get into at TIFF), and Eddie Falco, who had key roles in not one but two independent films: Lynn Shelton's bittersweet drama *Outside In* and *I Love You, Daddy*, the “secret” film from comedian Louis CK, in which she steals scenes as his protagonist Glenn Topher's tortured production manager.

These may be roles usually favoured by the Golden Globes, but their placement in the Oscars category would only bolster what is going to be the fiercest Best Actress race in some time.

– The Independent

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MHLAZINGU 12 SEPTEMBER 2017
 Phambi kuka Mhlonishwa Mnumzane Mehluheli MNGUNI Odabeni oluphakathi kuka **MASIPALA WESIFUNDANKANTOLO SASE MZINYATHI** Umfaki Sicelo

no AFRED NDAWONDE Umphenduli Wokuqala
SONOSAKHE XIMBA Umphenduli Wesibili
BHENGU Umphenduli Wesithathu
DORIS ZULU Umphenduli Wesine
PRETTY MHLONGO Umphenduli Wesihlanu
M B PHUNGULA Umphenduli Wesithupha
THOKOZILE NENE Umphenduli Wesikhombisa
BUKIWE NDWAWONDE Umphenduli Wesishiyagalombili
BUSISIWE MAGUBANE Umphenduli Wesishiyagalolunye
MOOI MPOFANA LOCAL MUNICIPALITY Umphenduli Weshumi

EKUFUNDENI isexwayiso somnyakazo, kanye nezinye izinc-futhi ESIPHAKAMISWENI SoMmeli wase Majajini ka Mfaki Sicelo; **KUQUNYWA UKUTHI:**

1. Ukuthi isinqumo Sesikhashana sikhshiwe, sekubizwa Abaphenduli ukuthi banike izzathu, uma zikhona, mhaka 19 ku Oktobha 2017, ngo 9h30 noma ngokushesha ngemva kokholo udaba lungakwazi ukulelelwa, ukuthi kungani isinqumo sin-geke senziwe ngalimbandedela elandelayo:
 1.1 Ukuthi ukuzo kufinyelelwe esiphethweni salesisicelo;
 1.1.1 Umphenduli Wokuqala kuya koWesishiyagalolunye

("Abaphenduli") kanye nanoma yimuphi omunye umuntu owenza ngokuhambisana nabaphenduli futhi beqhuba izen-zo ezingekho emthethweni zabaphenduli, ngalokho bavinj-elwa futhi banqatshehlwa uku:
 1.1.1.1 ukuvimbela abasebenzi base Icon Construction (Pty) Limited ("Icon") nanoma yimuphi omunye umuntu owenza-za noma owenza ngegama lo mfaki sicelo, ukufinyelela endaweni yokusebenzela ezungeze i Craigieburn Dam ("Indawo yokusebenzela") futhi basebenzele lapho; 1.1.1.2 ukuphazamisa, ukwesabisa, ukusongela noma ngayiphi indlela ukuvimbela abenkontileka yomfaki sicelo, kuhlangani-sa Icon, ukusebenza endaweni efanele yokusebenzela; 1.1.1.3 ukubiza, ukhulela, noma ukhulnganisa, noma ngayiphi indlela, noma yimuphi umhlango, iqogo labantu, imashi, umbhikisho, noma isenzo sokuphikisa, okhalweni noma phakathi kokholo olungamkhomitha awu 5 lwendawo okusethenzelwa kuyona ngaphandle kokuhambisana nezinhlinzeko zoMthetho woMthethonqubo weZokuhlanguka 205 ka 1993.
 1.1.1.4 ukugququzela, ukhulela, noma ukhulnganisa, ukwenqabela noma ukuphazamisa ukufinyelela kwabaseben-zi noma izikhuluzo Mfaki Sicelo, kanye ne Icon Construction (Pty) Ltd, abasebenzi bakhe kanye/noma abenkontileka yakhe endaweni yokusebenzela;
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 1.5 Ukuthi izigaba 1.1, 1.3, no 1.4 zaloku zizobenzela njen-gesinqumo sesikhashana kusukela manje, kusalandelwe ukugedwa kwalesisicelo.
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NguMbali ePretoria
Ngiyabonga kuMama Salima ngosizo lwakho ngangisebenza nguThisha iminyaka ewu30, ngikwelela yonke indawo. Ngelinye ilanga ngathenga iphepha ILANGA ngabona abantu bebonga nami ngamfonela wathi inkanyiso so uR100 ngamfakela yon besengimthumelela iminini ngwane yami yaseBank. ebusuku yangena imali uR30 Million kumanje nga yeka nokusebenza ngina ma Business ami, NGIYABONGA uMama nani eninenkinga thintana noMama osiza: (i) Imali engena ebank (ii) Imali esheshayo (iii) Abafana bomoya nama gundane alanda imali **NOKUNYE OKUNINGI FONELA UMAMA SALIMA 065 932 7673**

NguSindi eMorningside
Ngiyabonga uBaba Abraham, ngosizo lwakho ngangisebenza eKing Edward iminyaka ewu 30 lutho ngikwelela yonke indawo. Ngelinye ilanga ngathenga iphepha ILANGA ngabona uPHUMZILE ebonga nami ngamfonela wathi inkanyiso uR100 ngamfakela yona besengi mthumelela imininingwane yami yaseBank. ebusuku yangena imali uR30 Million kumanje ngayeka nokusebenza nginama Business ami, NGIYABONGA BABA Nani enifuna usizo thinta uKING osiza: (i) Imali ingena ebank (ii) Imali esheshayo (iii) Abafana bomoya nama gundane alanda imali **NOKUNYE OKUNINGI FONELA KING ABRAHAM 078 670 3977**

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uNgwenya Iona
eAlexander eGoli ngiyabo nga kuwe Mama Aisha ngabe ngiyini ngaphandle dle kwakho, wavuka umuzi ka Baba Madoda. Ngangisebenzela umulungu ngu iminyaka engu 28 ngingakwazi kondla inga ne zami, uMulungu wayen gibiza ngo Joseph ngithi Boss kuye angangibizi ngesibongo sami lapho nengane zami zazingibiza ngo Baba uJoseph. kodwa phambi kokudibana no Mama AISHA wangikhipha ekuhluphekeni. ngenkanyiso kaR100 wangipha imali engango R80 million. Mina nengane zami sinamaBusi ness manje mphakathi uti NGWENYA kumina: won ke umuntu ufuna usizo fonela **UMAMA AISHA** uvuke umuzi wakho (i) Imali ingena eBank (ii) Imali esheshayo (iii) Abafana bomoya nama gundane alanda imali **NOKUNYE OKUNINGI FONELA UMAMA AISHA 078 027 0740**

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ASSISTANT DIRECTOR: POLICE PERFORMANCE, MONITORING AND EVALUATION (DOCKET AND CASE MONITORING)

• REF. NO.: ETHEKWINI REGION: CSL55/2017 • MIDLANDS REGION: CSL56/2017
• EASTERN REGION: CSL57/2017 • NORTHERN REGION: CSL59/2017
• HEAD OFFICE AND SPECIALISED UNITS: CSL60/2017

CENTRE: PIETERMARITZBURG
Salary: R389 145.00 p.a. (Salary Level 10)

Requirements: • A relevant degree or National Diploma in Law, Police Science, Social Science or Criminology or equivalent plus three (3) to five (5) years' appropriate experience in prosecution or criminal investigation together with a valid driver's licence • A degree/National Diploma in Law will be an added advantage.

Knowledge, skill and competencies: • Constitution, Criminal Law, Law of Evidence, Criminal Procedure Act, Criminal Justice System, Public Service Act and Regulations, PFMA, Civilian Secretariat for Police Act, SAPS Act, Domestic Violence Act, Policing Policies, Procedures and Standing Orders • Criminal Investigation/Prosecution, Communication, Project management, Report writing, Financial Management, Conflict Resolution.

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Enquiries: Mr R.L. Goniwe, tel. (033) 341 9330.

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Note: Candidates must submit separate applications for each post applied for quoting the applicable reference number. Forward your application, stating the reference number, clearly marked for the attention of Ms K.S. Mthembu, Private Bag X 9143, Pietermaritzburg, 3200 or hand-deliver to Department of Community Safety and Liaison, 179 Jabu Ndlovu Street, Pietermaritzburg.

Due to the large number of applications, only short-listed candidates will be contacted and if you have not heard from this Department within 3 months of this advertisement, please regard your application as being unsuccessful.

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CLOSING DATE: 06 OCTOBER 2017.

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Scheme amendment of the General Industry 2 Development Facilitation Table of the Outer West Scheme, by the introduction of the following Additional Control: **"a Crematorium may be permitted by Special Consent on proposed Lease 1 of Portion 8 of Erf 50 Cato Ridge."**

At A SITE BETWEEN R103 AND THE OLD RAILWAY LINE (AS PER LOCALITY PLAN BELOW)



IMINININGWANE YOFAKE ISICELO: Afro Prop Natal Pty Limited
IMINININGWANE WOMELE ABAFAKE ISICELO: CHRISTINE PLATT: Consulting Town Planner, 7 Canal Drive, Westville 3630

Ikhophi yalesisichibiyeli esihlongozwayo ivulelekile uku hlolwa yilayo malunga omphakathi afisa ukwenza lokhu ,kusukela ngehora lesi-08h00 no 12h30 ngemiSombulu ko kuya kulweSihlanu ngaphandle kwamaholidi, emaH hoviisi akwa-Land Use Management Branch, 22 Delamore Road, Hillcrest. Amalunga omphakathi ayamenywa u kufaka uvolwawo ku-Regional Co-Ordinator, Outer West Region, Land Use Management Branch, 22 Delamore Road Hillcrest 3610, noma ngeposi ku-22 Delamore Road Hillcrest 3610, noma nge e-mail ku: **nomzamo.mdladla@durban.gov.za** ngomhlaka **07 November 2017.** Uma ungakwazanga ukufaka uvolwawo kuzekushye usuku olubhaliwe ngenhla, angeke uvu nyelwe ukuba yingxenye yalolu hlelo. Inombolo yocingo zase-Outer West Regional Office: (031) 311 2697

ILANGA

GIVE YOUR BUSINESS THE UPPER HAND BY ADVERTISING WITH US

Tel: 031 334 6777
Fax: 031 337 9821
Email: Classifieds@ilanganews.co.za

Invitation to Attend a Public Meeting for the Presentation of the Draft Baseline Assessment 2017 Gauteng Air Quality Management Plan

The Gauteng Department of Agriculture and Rural Development (GDARD) is reviewing and updating the 2009 Air Quality Management Plan (AQMP), in accordance with the requirements of National Environmental Management: Air Quality Act. The first phase is nearing completion, with the draft baseline assessment report, which will be presented to members of the public at three stakeholder meetings. Opportunity will be given to discuss the findings and to identify gaps and issues for consideration in the revised AQMP in the next phase of the project. As an important stakeholder, you are invited to attend and participate. The draft baseline assessment report will be available on the project website after the final meeting.

Area	Venue	Date	Time
Ekurhuleni Municipality	Boksburg: CC Council Chambers	26.09.2017	17:30 - 20:00
City of Joburg	Johannesburg Zoo: Anglo Ashanti Conference Venue	27.09.2017	
City of Tshwane	Tshwane Leadership & Management Academy	28.09.2017	

All comments on the draft baseline assessment must be submitted to the project secretary by 31 October 2017.

Project website: <http://www.umoya-nilu.co.za>

Contact details:
Benton Pillay (Project Leader)
Email: benton@umoya-nilu.co.za
Sarisha Perumal (Project secretary)
Email: sarisha@umoya-nilu.co.za
Tel: 021 349 1288

Lydia Muditambi
Control Environmental Officer
Grade B: Air Quality
Tel: 011 240 3193
Email: lydia.muditambi@gauteng.gov.za

MOYA-NILU  **GAUTENG PROVINCE**
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

ERM Reference Number: 0414229
Ukuhlolwa Komthelela Wemvelo Wokubhola Kokuhlola kuBhlokwe ER236, kude noGu Olusempumalanga lwaseNingizimu Afrika

ISIMEMO SOKUBHALISA KANYE NOKUPHAWULA

I-Eni South Africa BV (Eni), ne-Sasol Africa Limited (Sasol) baneLungelo Lokuhlola 12/3/236 (ER 236) kude noGu Olusempumalanga lwaseNingizimu Afrika. I-Eni no Sasol icabanga ngethuba lokwenza uhlelo lokubhola kokuhlola kuBhlokwe ER 236 ukuhlola ukuthi kungasebenza yini ngokwezomnotho ukwenza idamu le-hayidrokhab-honi yentuthuko yesikhathi esizayo.

Iphrojekthi idinga Ukugunyazwa Kwemvelo (EA) kuMnyango Wezokumbiwa Phansi (DMR) ngaphansi koMthetho Wokuphathwa Kwemvelo Kazwelonke (NEMA) (Umthetho Nombolo 107 ka-1998) njengoba uchitshiyelwe ngokohlolo loKuhlolwa Komthelela Wemvelo (EIA).

Lapha kunikezwa isaziso sokuqalisa kwe-EIA kanye nohlelo lokuhlanganyela komphakathi oluhambisana nayo oludingeka ngaphansi kwe-NEMA. Iphrojekthi ephakanyiswayo ivusa Imisebenzi Efakwe ohlwinini eminingi, kubandakanya okulandelayo, ngoKwe zimiso Zomthetho we-EIA ka-2014 (njengoba uchitshiyelwe ngo-Ephreli 2017):

- Umsebenzi 18 Isaziso Sokufakwa ohlwinini 2 GN R984: Nanoma yimuphi umsebenzi kubandakanya umsebenzi walowo msebenzi odinga ilungelo lokuhlola njengoba kush iwo kusigaba 79 soMthetho Wezidingongqangi Zamaminali nePhethroliyamu, 2002 (Umthetho Nombolo 28 ka-2002), kubandakanya -:
- (a) ingqalazizinda ehambisana nawo, izakhiwo kanye nezinqwaba zomhlabathi ombiwe; noma
- (b) ukuhlelwa okuyisisekelo kwesidingongqangi esiyiphetroliyamu kubandakanya ukumba umgodi, ukukhipha, ukuhlela, ukujijisa noma ukususa amanzi; kodwa kukhishwa ukusetshenzwa okuncane kwesidingongqangi esiyiphetroliyamu, kubandakanya ukwenza ngcono izinga noma ukucolisisa igesi, uwoyela noma imikhizizo yephetroliyamu lapho okusebenza khona umsebenzi 5 kulesi 5aziso.

Ababambiqhaza bayamenywa ukuthi babhalise njengeBantu Abanentshisekelo Nabathintekayo (ama-I&AP) nokuthi bahlanganyele ohlelweni lwe-EIA ngokukhomba izinto ezikhathazayo nokunikeza iziphakamiso zokwenza ngcono izinzuzo. Umbiko Wobukhulu bendawo owuhlaka kanye noMbiko Wokuhlola Umthelela Wemvelo owu hlaka uzotholakala ukuthi kuphawulwe ngawo ngokwaziwe ngemihlangano yokuban dakanyeka nalapho imibiko seyikhona ukuthi kuphawulwe.

Ukubhalisa njenge-I&AP, ukuletha imibono yokuphawula, nokuthola ulwazi oluthe xaxa, sicela uxhumane ne-ERM: **Charlene Jefferies** Imeyili: eni.offshore.eia@erm.com Ucingo: **021 681 5400**
Postnet Suite 90, Private Bag X12, Tokai, 7966
i-Webhusayithi: www.erm.com/eni-exploration-eia



0850 PROFESSIONAL

VACANCY FOR TEACHER AT MOUSE- HOUSE NURSERY SCHOOL MEERENSEE

- Applicant must have a matric certificate and be fluent in Afrikaans and English.
- Any teaching experience will be beneficial.
- Opportunity for further studies available.

E-mail CV to wimwat58@gmail.com
TS030074

0877 DOMESTIC EMPLOYMENT/ ACCOM.

CAROL
Seeks F/P/T, S/O, Eng, cooks, kids, refs.
Tel: 082 403 9985.
JN004213

GOODNESS
Seeks F/T, S/O, Eng, cooks, kids, refs.
Tel: 081 042 2012.
TS030085

PHUMI
Seeks F/T, S/O, Eng, cooks, kids.
Tel: 060 331 7529.
TS030082

THOBILE
Seeks P/t, S/O, Eng, cleaning, good refs.
Tel: 072 726 7897.
TS030058

0900 LEGALS

0910 PUBLIC/ LEGAL NOTICES

CITY OF UMHLATHUZE
APPLICATION FOR COUNCIL'S SPECIAL CONSENT IN TERMS OF SECTION 67 BIS OF THE TOWN PLANNING ORDINANCE NO.27 OF 1949 READ WITH CLAUSE 1.9.5. OF THE UMHLATHUZE LAND USE SCHEME AND THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT, 2013

Notice is hereby given in terms of Section 33(1) of

• VACANCIES •

CIVIL ENGINEERING & RELATED BURSARIES 2018

Richards Bay based 9CE Civil Construction company will be making bursaries available to students considering career opportunities in the Civil engineering sector upon successful completion of studies.

Funding will be considered for Degrees and National Diplomas (HET Qualifications) under the following qualifications:

- BSci (Civil Engineering)
- BSci (Property Development)
- N.Dip (Civil Engineering)
- N.Dip (Surveying)

CRITERIA

- SA Citizen
- Studying towards a Degree/National Diploma which is a recognised SA Qualification
- Preference will be given to candidates with an exceptional academic record in their 2nd or 3rd year of study within the Engineering Schools of their academic institutions.
- As part of Bursary Agreement, candidate must be able to report to Richards Bay Head office to undertake Vacation Work at own expense
- Employment contractual obligation of one year for every year of bursary funded

APPLICATION REQUIREMENTS

- CV
- Short Motivation
- Recent Academic Record & Matric results
- South African ID (recently certified)
- Proof of acceptance to accredited institution
- Only applications meeting minimum criteria and submitted with all required documentation will be considered.
- Applications only accepted online at : <https://form.myjotform.com/72560732310548>

Closing date 29 September 2017.
ts030080-38-17©

BUYER FOR CIVIL CONSTRUCTION COMPANY BASED IN RICHARDS BAY

DUTIES AND RESPONSIBILITIES

Ability to negotiate, build relationships and manage suppliers, cost and process control with reconciling of various aspects. Full list of job requirements can be found on the application link below.

- Ensure that a reasonable amount of quotations are obtained for all purchases, proper adjudications and market comparisons are carried out and the award of purchase orders to bidders based on best price and quality.
- Give feedback to management and site agents on technical enquiries regarding the quotations in a helpful and knowledgeable manner.
- Track market conditions for escalation/rise and fall.
- Provide the support to directors, contract managers, site agents and estimating department to achieve overall business objectives.

MINIMUM REQUIREMENTS

- Matric, QS qualification would be advantageous
- 3-5 years relevant experience in procurement within the construction industry.
- Computer literate, Excel a must, ACCPAC and/or CCS an advantage.
- Must be prepared to work long hours when required or necessary

Applicants are required to apply online: <https://form.myjotform.com/72550876510558>

Closing Date: Friday, 22 September 2017
Equal Opportunity Employer. We reserve the right not to make any appointment and should you not receive any correspondence from us within 30 days after close of application, please consider your application as unsuccessful.

• PUBLIC / LEGAL NOTICES •

NOTICE OF APPLICATION IN TERMS OF SECTION 42(1)(b) AND REGULATION 5(2) OF ACT KwaZulu-Natal Liquor Licensing Act, 2010 (Act No. 6 of 2010)

Notice is hereby given that it is the intention of the person whose details are set out below to lodge an application for a **Tavern Liquor licence** with the secretary of the local committee of **Zululand District**.

1. Full names and surname of the applicant: **Njazi Trading (Pty) Ltd**
2. Intended trading name: **Njazi Tavern**
3. Identity number or Registration number: **2012/221275/07**
4. Full address and location of the premises: **Nkonjeni Reserve, Vezunyawo Area Road D1717, Near Mbatha Tribal Court, Cisholo Madela Bus Stop, Mahlabathini 3865**
5. Type of licence applied for: **On-Consumption** Liquor licence
6. Names and the nature of educational institutions within a radius of 500 metres of the premises: **No learning institutions within 500m**
7. Names and distances to similar licensed premises within a radius of 500 metres of the premises: **No similar licensed premises within 500m**
8. Places of worship within a radius of 500 metres from the premises: **No religious institutions within 500m**
9. The notices have been displayed at the proposed premises, visible to all passers-by: **YES**

Contact number: **060 452 4591**

NB: Objections should be lodged with the local committee in the district from where the application emanates or the Station Commander of the local SA Police Station within 21 days from the date of the display.

251 Utrecht Street
EDTEA Offices
Vryheid
Tel: 034 989 5102
Email: Nkosinathi.Mosia@kznlqa.co.za
ma017247-17©

the Spatial Planning and Land Use Management Act, 2013 and Clause 1.9.5. of the uMhlathuze Land Use Scheme, that I, E Grobbelaar-Dickson in my capacity as the applicant intend applying to the City of uMhlathuze, for the consent of the Council to use Erf 2582 Meerensee, which is registered in the name of D&E Grobbelaar-Dickson for the purpose of an Office. Particulars, plans and other documents may be inspected in Office D327B, Civic Centre, CBD, Richards Bay. Written objections against or representations concerning the proposed application should reach the Municipal Manager at Private Bag X1004, Richards Bay, 3900 or reg@richemp.org.za as well as the applicant at PO Box 101076 Meerensee within 30 days from the date of advertisement. Failure to lodge or forward objections/representations in response to this notice before the above-mentioned date will preclude a person from further participating in the process, or taking any further steps with regard to the application
18-09-2017
MA017249

IDOLOBHA LASEMHLATHUZE
ISICELO SEMVUME YOMKHANDLU NGOKWESIGABA 33(1) SOMTHETHO OLAWULA UKUSETSHENZISWA KWEZINDAWO NOKUHELELWA KWAZO KA 2013 KANYE NESIGABA 1.9.5 SOMQULU OLAWULA UKUSETSHENZISWA KWEZINDAWO EZINGAPHANSI KOMKHANDLU WASEMHLATHUZE.

Isaziso sikhishwa ngokweSigaba isigaba 33(1) somthetho olawula ukusetshenziswa kwezindawo nokuhlelwa kwazo ka 2013 kanye nesigaba 1.9.5 somqulu olawula ukusetshenziswa kwezindawo ezingaphansi komkhandlu wasemhlathuze, ukuthi m i n a, E Grobbelaar-Dickson ngokwesikhundla sethu umfakisicelo nginenhloso yokuthola imvume yoMkhandlu yokusebenzisa Erf 2582 Meerensee ebhaliswe ngegama lika D&E Grobbelaar-Dickson ngenjongo kwenza indawo ye-Ohhovisi. Imininingwano, amapulani kanye neminye imiqulu ingahlolwa kwi hhovisi D327B, Civic Centre, edolobheni lase Richards Bay. Noma imuphi umuntu ofisa ukuphikisa noma ukuzisa isikhalo mayelana nalesecelo kofanele azise isiphikiso noma isikhalo esibhaliwe kuhlalane ndawonye nezizathu aphikisa ngazo. Incwadi yesikhalo noma isiphikiso kofanele ibe mbaxambili ithunyelwe kuMphathi Dolobha, Private Bag x1004, Richards Bay, 3900 noma reg@richemp.org.za kanye nakumfaki wesicelo PO Box 101076 Meerensee kungakapheli izinsuku ezingamashumi amathathu (30) kusukela osukwini lokuphuma kwesikhlangiso ephapheni. Uma ingekho imibono noma izikhazazo ezithunyelwayo mayelana nalesecelo, wonke amathuba okuzibandakanya nalesecicelo ayobe esevalekile kanjalo.
18-09-2017
MA017250



• PUBLIC / LEGAL NOTICES •

NOTICE OF EX POST FACTO APPROVAL ENVIRONMENTAL AUTHORISATION PROCESS POULTRY FARM NEAR MTUBATUBA IN THE UMKHANYAKUDE DISTRICT MUNICIPALITY, KWAZULU-NATAL.

The Kevin Lawrie Family Trust established a poultry production farm (egg laying) on a 2.2 ha property near Riverview within the Mtubatuba Local Municipality. Currently, the facility houses approximately 19 000 chickens. The development included the upgrading and electrifying of the existing fences around the property, revamping the existing 1,703m² shed, the installation of automated feeders, drinkers, egg collectors and manure removal machinery, the construction of a 10m² guard house, the refurbishing of the existing ablution facilities and cottage and the installation of seven 5000 litre Jojo tanks for the harvesting of rainwater. Additional water is abstracted from a borehole on site. The project will also comprise of the future construction of an additional shed of approximately 936m². At peak production, the poultry operation will be able to accommodate 100 000 chickens.

Environmental Authorisation Process
Exigent Engineering Consultants has been appointed by Kevin Lawrie Family Trust as the Environmental Assessment Practitioner to undertake the rectification of unlawful commencement of the listed activities in terms of Section 24G, including the Public Participation Process. Notice is given for the Environmental Authorisation application to be submitted to the Department of Economic Development, Tourism and Environmental Affairs (DEDTEA) in terms of the Section 24G published in Government Notice (GN) No. R. 698 of 20 July 2017 for Legislative Provisions Contravened in terms of listed activity No. 5 (ii) of Listing Notice 1: No. R.983 of December 2014 in terms of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), as amended. The applicant has commenced with listed activities without the necessary environmental authorisation in terms of the EIA Regulations published in Government Notice No. R. 326 of 07 April 2017 under Section 24(5), and 44 of the NEMA, as amended, in terms of listed activity 5 (ii) of Listing Notice 1 – GN R327.

Invitation to participate
Should you wish to register as an interested and/or affected party (I&AP), receive project information, and/or to raise issues, please provide your written comments to Exigent Engineering Consultants by **9 October 2017**.

Charleen Smuts
PO Box 9514
Richards Bay, 3900
Tel: (035) 788 0398
Fax: (086) 614 7327
E-mail: charleen@exigent.co.za
Date of notice: **18 September 2017**

ERM Reference Number: 0414229

Environmental Impact Assessment for Exploration Drilling within Block ER236, off the East Coast of South Africa
INVITATION TO REGISTER AND COMMENT

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an Exploration Right 12/3/236 (ER 236) off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 to assess the commercial viability of the hydrocarbons reservoir for future development.

The Project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR) under the National Environmental Management Act (NEMA) (Act No. 107 of 1998), as amended, through an Environmental Impact Assessment (EIA) process.

Notice is hereby given of the commencement of the EIA and associated public participation process required under NEMA. The proposed project triggers a number of Listed Activities, including the following, in terms of the EIA Regulations of 2014 (as amended in April 2017):

- Activity 18 Listing Notice 2 GN R984: Any activity including the operation of that activity which requires an exploration right as contemplated in section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including —
- (a) associated infrastructure, structures and earthworks; or
 - (b) the primary processing of a petroleum resource including winning, extraction, classifying, concentrating or water removal; but excluding the secondary processing of a petroleum resource, including the beneficiation or refining of gas, oil or petroleum products in which case activity 5 in this Notice applies.

Stakeholders are invited to register as Interested and Affected Parties (I&APs) and to participate in the EIA process by identifying issues of concern and providing suggestions to enhance benefits. A draft Scoping Report and draft Environmental Impact Assessment Report will be made available for comment during the EIA process. Registered I&APs will be kept informed about the Project and will be notified of engagement meetings and when reports are available for comment.

To register as an I&AP, submit comments, and to obtain more information, please contact ERM:

Charlene Jefferies
Email: eni.offshore.eia@erm.com
Tel: **021 681 5400**
Postnet Suite 90, Private Bag X12, Tokai, 7966
Website: www.erm.com/eni-offshore-eia




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Annex B2.3

Background Information Document

Background Information Document

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST OF SOUTH AFRICA

Purpose of this Document

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an exploration right off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 (12/3/236) to assess the commercial viability of the hydrocarbon reservoir for future development.

The Project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR), through the Petroleum Agency South Africa (PASA). The authorisation would be under the National Environmental Management Act (NEMA) (Act No. 107 of 1998).

To obtain an EA, an Environmental Impact Assessment (EIA) process must be undertaken in terms of the NEMA EIA Regulations, 2014. The Department of Mineral Resources (DMR) is the competent authority and has powers to authorise the

development or refuse it. Applications must be submitted to PASA. PASA is responsible for evaluating applications, entering into negotiations with applicants and making recommendations to the Minister of Mineral Resources on their acceptability.

This document provides background information on the Project and the Environmental Impact Assessment (EIA) process. It aims to assist Interested and Affected Parties (I&APs) to understand the Project and provide guidance on getting involved in the EIA process. I&APs play a very important role in the EIA process and we encourage you to register as a stakeholder which will enable ERM to keep you informed throughout the EIA processes. By doing so you will be able to engage in discussions on issues, provide comment on the draft Scoping Report, various specialist study findings and comment on the draft EIA Report to be produced in the course of the process.

ERM's Role

Eni, in its role as operator of ER236, has appointed Environmental Resources Management (ERM) as the independent Environmental Assessment Practitioner (EAP) for the EIA. The EIA will set out the anticipated impacts arising from the Project and propose measures on how these might be managed. The EIA report will inform an environmental authorisation decision to be taken by the Department of Mineral Resources (DMR).



Register as an interested and affected party:

Please complete the enclosed registration/comment sheet or contact ERM to register as an I&AP. You can contact us using the details below:

Charlene Jefferies of ERM Southern Africa

Tel: 021 681 5400

Email: eni.offshore.eia@erm.com

Postnet Suite 90, Private Bag X12, Tokai, 7966

Project Website: www.erm.com/eni-exploration-eia



Project Background and Description

Eni is considering drilling up to four deep water wells inside Block ER236, within a 1,840 km² area of interest, in water depths ranging between 1,500 m and 2,100 m (see *Figure 1*).

The specific number of wells and their locations would be based on a number of factors, including further analysis of seismic data, the geological target (the hydrocarbon bearing geology into which the well is to be drilled), and the presence of any seafloor obstacles. In addition, the success (if valuable hydrocarbon is discovered) of the first well will determine whether or not subsequent wells are drilled.

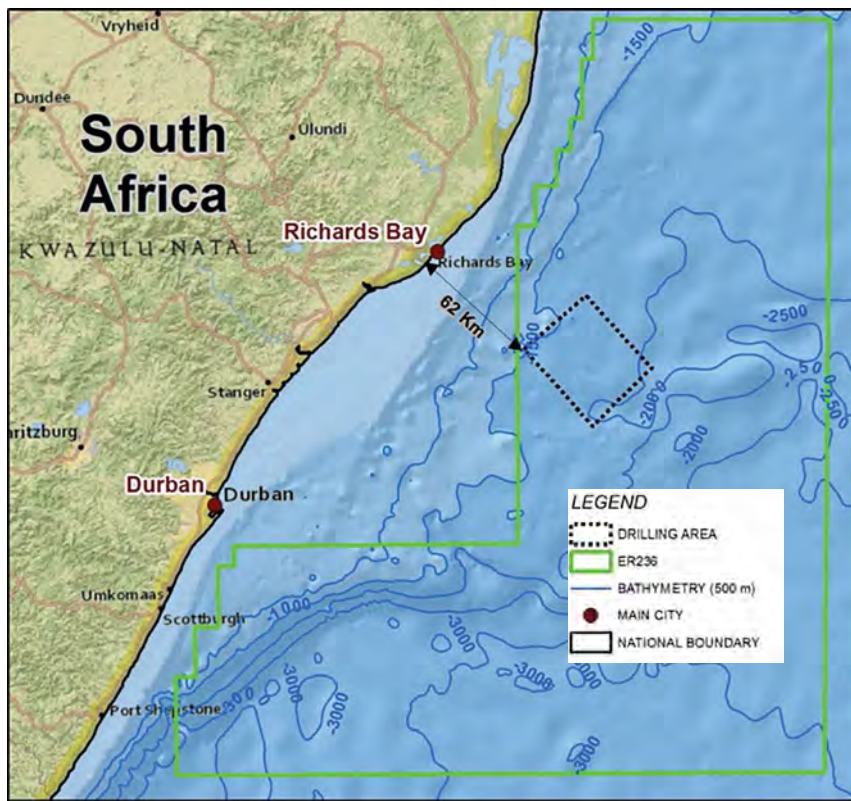


Figure 1. Locality map

The drilling of the first exploration well is planned for late 2018 to early 2019. The expected drilling depth would be approximately 3,800 m and 4,100 m from the sea level and the drilling of one well is expected to take in the order of two months to complete.

Depending on the success of the first well, up to three additional wells comprising an additional exploration well at a second location and the possibility of one appraisal close to each exploration well location, may be drilled to establish the quantity and potential flow rate of any hydrocarbon present. The time sequence of these possible additional wells will be dependent on the results of the first exploration well. Well testing may be conducted on the appraisal wells if they present potential commercial quantities of hydrocarbon.

Due to the water depth, the drilling of the wells will be undertaken by a deep water drillship held in position by dynamic positioning thrusters rather than anchor moorings (an example drillship is shown in *Figure 2*). A temporary 500 m operational safety zone would be imposed around the drillship, while it is drilling.

The drillship would be supported by at least three vessels, which would transfer equipment, materials and waste between the drillship and an onshore logistics base. The supply vessels would call into port regularly during the drilling period, called a “drilling campaign”.

An onshore logistics base would be located in either Richards Bay or Durban. Eni prefers Richards Bay as it is closer to the proposed drilling area, but a final decision has not yet been taken. This base would provide storage for materials (including materials required to drill the well, diesel, water and drilling fluids) and equipment. Vessels providing fuel, food supplies, water etc would also use the shore base.

The Environmental Impact Assessment Processes

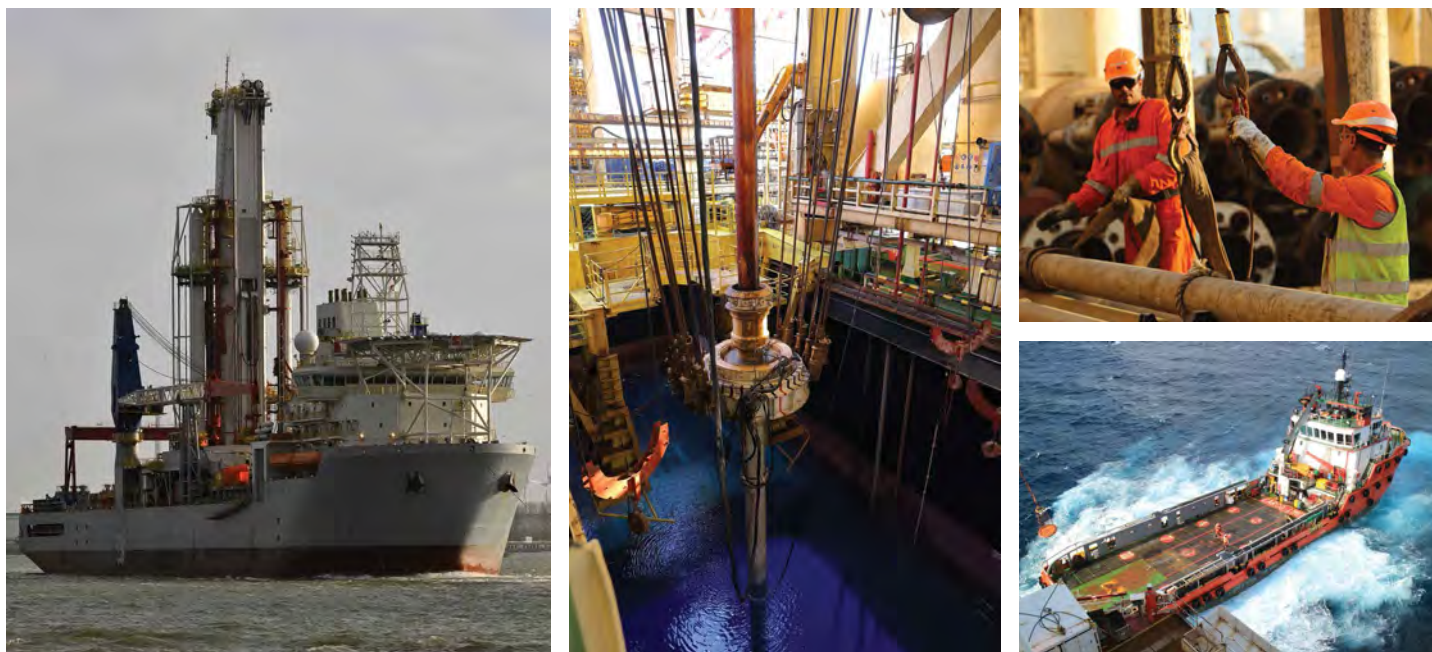


Figure 2. *Example of a drillship and activities associated with the drillship*

The EIA for the offshore drilling campaign is being conducted in terms of the National Environmental Management Act, 1998, (Act No. 107 of 1998).

The Project falls within a number of listed activities in the EIA Regulations, including Activity 18 in Listing Notice 2 (GNR R984), namely “Any activity including the operation of that activity which requires an exploration right as contemplated in section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including –

- (a) associated infrastructure, structures and earthworks; or
- (b) the primary processing of a petroleum resource including winning, extraction, classifying, concentrating or water removal;

but excluding the secondary processing of a petroleum resource, including the beneficiation or refining of gas, oil or petroleum products in which case activity 5 in this Notice applies.”

Therefore, the Project will require full Scoping and EIA Processes to support any environmental authorisation decisions. A typical full Scoping/EIA Process includes the following activity:

Scoping Phase – In the scoping phase, the EIA team communicates with I&APs (1st engagement session) to identify potential positive and negative impacts, Project alternatives, as well as to determine the terms of reference

for specialist studies to be conducted in the EIA phase. This information is set out in a Scoping Report.

The Draft Scoping Report for the Project will be made available for a thirty (30) day public comment period (2nd public engagement session). All comments, together with a response from the project team will be included in the final Scoping Report. This will be submitted to the Competent Authority (DMR, through PASA) for adjudication.

Specialist Studies – Once terms of reference for specialist studies as detailed in the Scoping Report are approved by the Competent Authority, the EIA team initiates the specialist investigations. These studies establish what the baseline environmental and socio-economic conditions are. These will provide a point of reference against which the impact assessment will be undertaken. For the proposed project we currently anticipate that the following specialist studies will need to be undertaken:

- Marine Fauna – an assessment of the proposed Projects’ impact to marine fauna (eg whales, turtles, seabirds etc).
- Fishing – an assessment of the proposed Projects’ impact on fishing activities in the area.
- Oil spill– modelling to identify the predicted dispersion of oil in an unplanned event.
- Dispersion modelling – a dispersion simulation of drill cuttings during drilling activities.

The Environmental Impact Assessment Processes

EIA Phase – The EIA team then compile an EIA Report. This Report sets out the possible positive and negative impacts identified in the Scoping Report, and through the specialist studies. The team rates the significance of the possible impacts using ERM's impact assessment methodology, developed internally based on international best practice. The Environmental Impact Report will include an Environmental Management Programme (EMPr), which will detail proposed management measures to minimise negative impacts and enhance positive impacts.

The EIA team will make the draft EIA Report available for a thirty (30) day public comment period (3rd public engagement session). All comments, together with a response from the Project team will be included in the final EIA Report which will be submitted to the Competent Authority for adjudication. Once the Competent Authority has made a decision, all registered stakeholders will be notified of the decision.

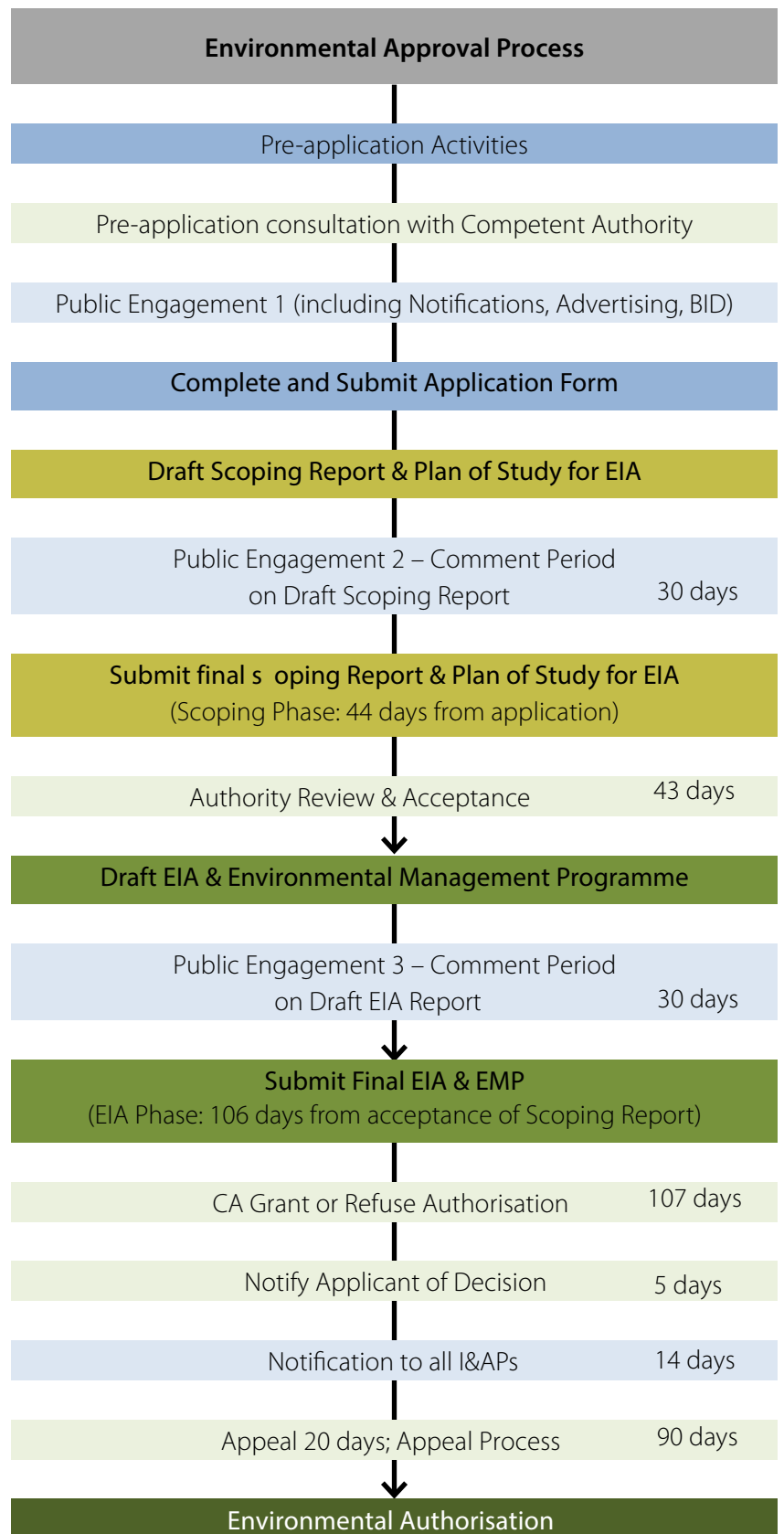


Figure 3. South African EIA Flowchart

Registration and Comment Sheet

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA

Should you have any queries, comments or suggestions regarding the proposed Project, please note them below.

Return this comment sheet to:

Charlene Jefferies of ERM Southern Africa

Email: eni.offshore.eia@erm.com

Tel: 021 681 5400;

Postnet Suite 90, Private Bag X12, Tokai, 7966

Project Website: www.erm.com/eni-exploration-eia

I want to formally register as an Interested and Affected Party (I&AP) and be provided with further information and notifications during the EIA process	Yes	No
I would like to receive my notifications by:	Email	Post Fax

Comments

Title and Name:		
Organisation:		
Telephone:	Fax:	
Cell:	Email:	
Postal Address:		
Name	Signature	Date

Thank you for your participation!



Annex B3

Site Notices

Environmental Impact Assessment for Exploration Drilling within Block ER236, off the East Coast of South Africa

INVITATION TO REGISTER AND COMMENT

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an Exploration Right 12/3/236 (ER 236) off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 to assess the commercial viability of the hydrocarbons reservoir for future development.

The Project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR) under the National Environmental Management Act (NEMA) (Act No. 107 of 1998), as amended, through an Environmental Impact Assessment (EIA) process.

Notice is hereby given of the commencement of the EIA and associated public participation process required under NEMA. The proposed project triggers a number of Listed Activities, including the following, in terms of the EIA Regulations of 2014 (as amended in April 2017):

Activity 18 Listing Notice 2 GN R984: *Any activity including the operation of that activity which requires an exploration right as contemplated in section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including —*

(a) associated infrastructure, structures and earthworks; or

(b) the primary processing of a petroleum resource including winning, extraction, classifying, concentrating or water removal; but excluding the secondary processing of a petroleum resource, including the beneficiation or refining of gas, oil or petroleum products in which case activity 5 in this Notice applies.

Stakeholders are invited to register as Interested and Affected Parties (I&APs) and to participate in the EIA process by identifying issues of concern and providing suggestions to enhance benefits. A draft Scoping Report and draft Environmental Impact Assessment Report will be made available for comment during the EIA process. Registered I&APs will be kept informed about the Project and will be notified of engagement meetings and when reports are available for comment.

To register as an I&AP, submit comments, and to obtain more information, please contact ERM:



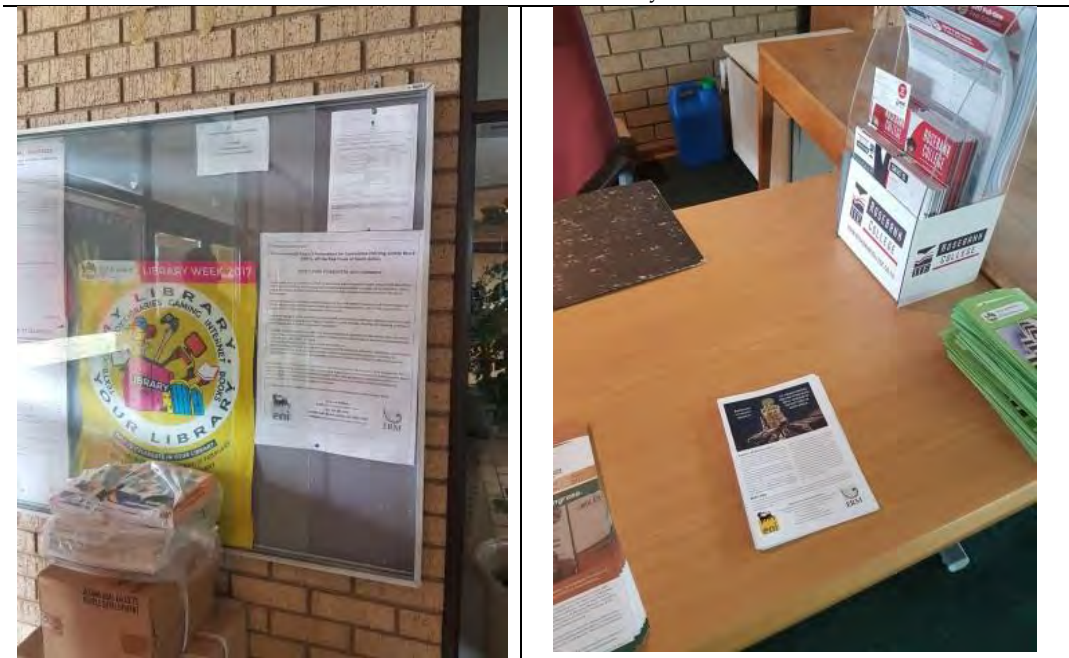
Charlene Jefferies
Email: eni.offshore.eia@erm.com
Tel: 021 681 5400
Postnet Suite 90, Private Bag X12, Tokai, 7966
Website: www.erm.com/eni-exploration-eia



Table 1.1 Proof of Placement of Site Notice



Durban Central Library



Richards Bay Library



TNPA Permit Office



Amanzimtoti Library



Athlone Park Library



Isipingo Beach Library



Umkomaas Library

Annex B4

Comments Received

Registration and Comment Sheet

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA

Should you have any queries, comments or suggestions regarding the proposed Project, please note them below.

Return this comment sheet to:

Charlene Jefferies of ERM Southern Africa

Email: eni.offshore.eia@erm.com

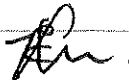
Tel: 021 681 5400;

Postnet Suite 90, Private Bag X12, Tokai, 7966

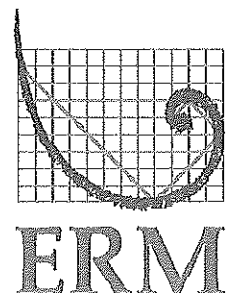
Project Website: www.erm.com/eni-exploration-eia

I want to formally register as an Interested and Affected Party (I&AP) and be provided with further information and notifications during the EIA process	Yes <input checked="" type="checkbox"/>	No
I would like to receive my notifications by:	<input checked="" type="checkbox"/> Email inke.summers@gmail.com	<input type="checkbox"/> Post <input type="checkbox"/> Fax

Comments

Title and Name:	Miss Inke Summers		
Organisation:	Private		
Telephone:	076 157 9602	Fax:	N/A
Cell:	As above	Email:	As above
Postal Address:	PO Box 100527, Scottsville, 3209		
Name	Signature 	Date	

Thank you for your participation!



Khosi Dlamini

From: Adrian Nel <NELA@ukzn.ac.za>
Sent: 18 September 2017 09:47 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: IAP for Block ER235 East coast of SA

Hi there Charlene

Please could you register me as an IAP for your EIA?

Many thanks
Adrian

Dr. Adrian Nel

Senior Lecturer in Geography, University of Kwazulu- Natal, Pietermaritzburg Campus.
Society of South African Geographers (SSAG) Centenary award recipient as an emerging geographer.
Twitter: https://twitter.com/adrian_p_n
Academia.edu: <https://sussex.academia.edu/AdrianNel>
Research Gate: https://www.researchgate.net/profile/Adrian_Nel
Linkedin: https://www.linkedin.com/profile/public-profile-settings?trk=prof-edit-edit-public_profile

Latest Publication: Nel, A. (2017). [Contested carbon: Carbon forestry as a speculatively virtual, falteringly material and disputed territorial assemblage](#) Geoforum 81, 144-152

Khosi Dlamini

From: office <office@oceanquest.co.za>
Sent: 18 September 2017 10:37 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Registration as an Interested and Affected Party

Dear Charlene,

Please register Hacky Fishing (Pty) Ltd as an interested and affected party. They hold fishing rights which are utilised in the proposed area.

Regards,

Andre Hector
HACKY FISHING (PTY) LTD
33 Voortrekker Road
Goodwood
021 591 6571



Virus-free. www.avast.com

Khosi Dlamini

From: Chadley Joseph <chadley@sdceango.co.za>
Sent: 19 September 2017 09:55 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA
Attachments: BID_Eni_Exploration_September2017. Chadley Joseph Registration.pdf

Dear Charlene

Please find attached registration form, please register me as an interested and affected party.

Kind Regards

Chadley Joseph

Khosi Dlamini

From: Charl Koen <charlkjoen@gmail.com>
Sent: 19 September 2017 01:50 PM
To: ERM South Africa Project ENI Offshore Exploration

Hi Charlene

Could you please send me the relevant registration forms for involvement in the public participation process around the issue of offshore exploitation and drilling. Thank you.

Kind regards
Charl Koen
Extreme Nature Tours

Khosi Dlamini

From: Charl Koen <charlkjoen@gmail.com>
Sent: 19 September 2017 02:26 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Re: Notification of Environmental Impact Assessment: Exploration Drilling within Offshore Block ER236, South Africa

Thank you very much!

On Sep 19, 2017 14:23, "ERM South Africa Project ENI Offshore Exploration" <eni.exploration.eia@erm.com> wrote:

Hello Charl

Please find attached as requested. The registration form is the last page of the attached document.

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an exploration right off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 (12/3/236) to assess the commercial viability of the hydrocarbon reservoir for future development.

The Project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR), through the Petroleum Agency South Africa (PASA). The authorisation would be under the National Environmental Management Act (NEMA) (Act No. 107 of 1998).

This notification serves to announce the commencement of the EIA process. For further information about the Project and associated EIA, as well as the public participation process, please refer to the attached Background Information Document.

To register as an Interested and Affected Party I&AP please contact Charlene Jefferies of ERM:

Tel: 021 681 5400

Email: eni.offshore.eia@erm.com

Postal address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Visit the Project website: www.erm.com/eni-exploration-eia

Yours Sincerely

ERM Team

ERM Southern Africa (Pty) Ltd

2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa

T +27 21 681 5400 | **F** +27 21 686 0736

W www.erm.com

Khosi Dlamini

From: Dumisani Myeni <luvdumi@gmail.com>
Sent: 19 September 2017 11:09 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: ERM Reference Number : 0414229 . EIA for Drilling with Block ER236, of East Coast of South Africa

Hi Charlene Jefferies

I would like to register as I&AP for the : EIA Exploration and Drilling with Block ER236 , of the East Coast of South Africa

My Contact details are as follows:

Name: Dumisani Myeni

Email: luvdumi@gmail.com

Location (Region) : Richardsbay (KZN)

Kind Regards

Dumisani Myeni

Registration and Comment Sheet

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA

Should you have any queries, comments or suggestions regarding the proposed Project, please note them below.

Return this comment sheet to:

Charlene Jefferies of ERM Southern Africa

Email: eni.offshore.eia@erm.com

Tel: 021 681 5400;

Postnet Suite 90, Private Bag X12, Tokai, 7966

Project Website: www.erm.com/eni-exploration-eia

I want to formally register as an Interested and Affected Party (I&AP) and be provided with further information and notifications during the EIA process	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
I would like to receive my notifications by:	Email donaldp@iasicc.co.za	Post <input type="checkbox"/> Fax <input type="checkbox"/>

Comments

Title and Name:	Mr. Donald Pittendrigh		
Organisation:	Industrial Automation & Systems Integration C.C.		
Telephone:	083 644 9556	Fax:	035 786 1853
Cell:	083 644 9556	Email:	donaldp@iasicc.co.za
Postal Address:	P.O. Box 40894; Richardsbay; KZN3900		
Name	Signature	Date	
D.Pittendrigh		5 October 2017	

Thank you for your participation!



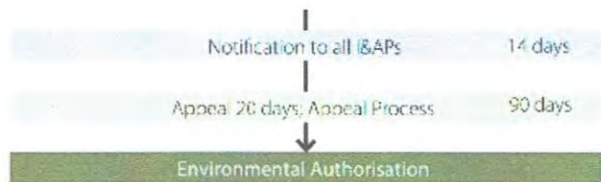


Figure 3. South African EIA Flowchart

Registration and Comment Sheet

**EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236,
OFFSHORE OF THE EAST COAST, SOUTH AFRICA**

Should you have any queries, comments or suggestions regarding the proposed Project, please note them below.

Return this comment sheet to:

Charlene Jefferies of ERM Southern Africa

Email: eni.offshore.eia@erm.com

Tel: 021 681 5400;

Postnet Suite 90, Private Bag X12, Tokai, 7966

Project Website: www.erm.com/eni-exploration-eia

I want to formally register as an Interested and Affected Party (I&AP) and be provided with further information and notifications during the EIA process

Yes No

I would like to receive my notifications by:

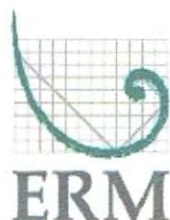
Email Post Fax

Comments

WOULD LIKE TO BE INFORMED
ABOUT THIS VENTURE OF YOURS.

Title and Name:	MRS. DEBBIE SMITH		
Organisation:	STOKKIESDRAAI		
Telephone:	035 5901216	Fax:	035 5901985
Cell:	079 066 1106	Email:	info@stokkiesdraai.com
Postal Address:	P.O. Box 28 St. Lucia 3936.		
Name	D. Smith	Signature	
Date	23/9/17		

Thank you for your participation!



Khosi Dlamini

From: Dee Fischer <DFischer@environment.gov.za>
Sent: 19 October 2017 08:15 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: registration as a stakeholder

To whom it may concern

Please could you register me as a stakeholder for the EIA for offshore exploration.

Kind Regards

Ms D Fischer
Chief Director: Integrated Environmental Management Support
Department of Environmental Affairs
Branch: Advisory Services
A: 473 Steve Biko Street, cnr Soutpansberg & Steve Biko
C: +27 827729837
E: dfischer@environment.gov.za
W: www.environment.gov.za ;

Please consider the environment before you print this email. Only print if it is essential. A message from the Department of Environmental Affairs.

This message and any attachments transmitted with it are intended solely for the addressee(s) and may be legally privileged and/or confidential. If you have received this message in error please destroy it and notify the sender. Any unauthorized usage, disclosure, alteration or dissemination is prohibited. The Department of Environmental Affairs accepts no responsibility for any loss whether it be direct, indirect or consequential, arising from information made available and actions resulting there from. The views and opinions expressed in this e-mail message may not necessarily be those of Management.

Khosi Dlamini

From: Judy Bell <judybell@mweb.co.za>
Sent: 18 September 2017 03:30 PM
To: ERM South Africa Project ENI Offshore Exploration
Cc: eia@frackfreesa.org.za
Subject: RE: ENI Exploration EIA

Hi Lindsey

No it doesn't. They have to wade through a 2 mB document, which many do not open unless they see in the email (subject line preferably) that it is something in which they are interested or will be affected by it. People without airtime will not be able to open such a big attachment.

It is not conducive to effective participation, which is a principle of NEMA.

Thanks
Judy

From: ERM South Africa Project ENI Offshore Exploration [<mailto:eni.exploration.eia@erm.com>]
Sent: Monday, September 18, 2017 12:52 PM
To: Judy Bell; ERM South Africa Project ENI Offshore Exploration
Cc: eia@frackfreesa.org.za
Subject: RE: ENI Exploration EIA

Hi Judy

ERM distributed an initial notification email to all stakeholders on our I&AP Database on Friday 15 September. A Background Information Document was attached to the email which provides further information about the Project and includes a map on page 2. The map shows where Eni's exploration block (ER236) is located, as well as the area of interest for the exploration drilling.

As such, people who have received the initial notification should be able to see where the Project is located and decide whether or not they wish to participate. The BID is also available to the Project website:
<http://www.erm.com/eni-exploration-eia>

Please let me know if this addresses your query to your satisfaction.

Warm regards
Lindsey

Lindsey Bungartz
Senior Consultant

ERM Southern Africa (Pty) Ltd
2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa
T +27 21 681 5400 | **E** lindsey.bungartz@erm.com | **W** www.erm.com



From: Judy Bell [<mailto:judybell@mweb.co.za>]
Sent: Monday, September 18, 2017 11:47 AM
To: ERM South Africa Project ENI Offshore Exploration
Cc: eia@frackfreesa.org.za
Subject: RE: ENI Exploration EIA

Hi Charlene

And... What about letting me know how you are going to notify people in the initial correspondence where the project lies, so they can decide to participate or not?

Thanks
Judy

From: ERM South Africa Project ENI Offshore Exploration [<mailto:eni.exploration.eia@erm.com>]
Sent: Monday, September 18, 2017 8:34 AM
To: Judy Bell
Cc: eia@frackfreesa.org.za
Subject: RE: ENI Exploration EIA

Good Morning Judy

Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.

ERM
2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa
T +27 21 681 5400 | **F** +27 21 686 0736 | **M** +27 82 532 7231
E charlene.jefferies@erm.com | **W** www.erm.com



ERM *The business of sustainability*

From: Judy Bell [<mailto:judybell@mweb.co.za>]
Sent: Friday, September 15, 2017 3:50 PM
To: ERM South Africa Project ENI Offshore Exploration
Cc: eia@frackfreesa.org.za
Subject: ENI Exploration EIA

Hi there

Please would you notify all the IAP's where this block is located so that they know if this is a local issue for them or not. Please note this in your comments register in the documentation submitted to the authorities.

Thanks
Judy Bell

www.frackfreesa.org.za
www.facebook.com/frackfreesouthafrica
Twitter: frackfreakzn

Khosi Dlamini

From: Judy Bell <judybell@mweb.co.za>
Sent: 15 September 2017 03:50 PM
To: ERM South Africa Project ENI Offshore Exploration
Cc: eia@frackfreesa.org.za
Subject: ENI Exploration EIA

Follow Up Flag: Follow up
Flag Status: Completed

Hi there

Please would you notify all the IAP's where this block is located so that they know if this is a local issue for them or not. Please note this in your comments register in the documentation submitted to the authorities.

Thanks
Judy Bell

www.frackfreesa.org.za
www.facebook.com/frackfreesouthafrica
Twitter: frackfreekzn



Khosi Dlamini

From: Frans Van Der Walt <frans@qs2000plus.co.za>
Sent: 06 October 2017 10:10 AM
To: eni.offshorr.eia@erm.com
Subject: EIA for EXPLORATION DRILLING within Block ER236, off the East Coast of SA
Attachments: image005.wmz

Good day Charlene,

My apologies for possibly belated response to notice in the Zululand Observer, which was lost amongst other paperwork and found today !

I would appreciate if you could add me to the Register as I&AP for the EIA Process going forward and possibly share information which may be available electronically.

I look forward to hearing more !!

Regards,

Frans van der Walt (B.Sc (QS), Pr.QS (2167), PMAQS, MRICS)
QS2000 Plus (Quantity Surveyors & Project Managers)

QS2000 is a Certified **BBBEE level 4 Contributor**.



Contact numbers : Tel : +27 (35) 753 4184 / 5, Fax : +27 (35) 753 4185, Cell : +27 82 4600 875
E-mail : frans@qs2000plus.co.za
Postal : P.O. Box 10376, MEERENSEE, 3901
Physical : 22 Pompano Place, MEERENSEE, 3901
Website : www.qs2000plus.co.za **Skype :** fransvanderwalt



Khosi Dlamini

From: Jacolette Adam <jacolette@exigent.co.za>
Sent: 11 October 2017 10:16 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Registration as an I&AP

Good day

Kindly register me as an I&AP for the project.

Regards

Jacolette Adam
Pr. Sci. Nat.
Cell: 082 852 6417



Khosi Dlamini

From: janet solomon <correspond@janetsolomon.com>
Sent: 16 September 2017 08:57 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: I & AP application

Dear Charlene Jeffries,

Exploration Drilling in Offshore Block ER 236 pertains

Please may I register as an interested and affected party?

Thanking you in anticipation,

JANETSOLOMON

Vanishing Present Productions
151 Umbilo Rd
Durban
www.janetsolomon.com
correspond@janetsolomon.com
+27 837891067

This e-mail is intended only for the person to whom it is addressed. If an addressing or transmission error has misdirected this e-mail, please notify the author by replying to this e-mail. If you are not the intended recipient you may not use, disclose, print or rely on this e-mail.

Khosi Dlamini

From: Jennifer Olbers <olbersj@kznwildlife.com>
Sent: 15 September 2017 03:00 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER2356, OFFSHORE OF THE EAST COAST OF SA

Dear Ms Jefferies,
Please may I register as an I&AF for the above project.
Thank you.
Regards,
Jennifer

*Dr Jennifer Olbers
Marine Ecologist
Ezemvelo KZN Wildlife, Scientific Services
Tel: +2731 312 2769 | Cell: +2784 406 5907
Postal Address: Private Bag X3, Congella, Durban, 4001, KZN, South Africa
Email: Jennifer.olbers@kznwildlife.com
Pr.Nat.Sci. #400405/14
https://www.researchgate.net/profile/Jennifer_Olbers*

Khosi Dlamini

From: John Cawood <john@gonet.co.za>
Sent: 05 October 2017 09:08 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Registration as an interested party

Good evening

I would like to register as an interested and affected party please

kind regards,

John

--



John Cawood

Owner - 072 245 3996

Office Contacts: Landline: 035 772 1528 Fax: 086 232 9496

Website: <http://www.alliancegraphics.co.za/>

Facebook: <http://www.facebook.com/alliancegraphics.sa>

Twitter: <http://twitter.com/AllianceDesigna>

Messaging: Contact me on Whatsapp 072 245 3996 Facebook Messenger

If you are happy with our service, please tell your friends or comment on our [Facebook page](#) - If you are not, please tell me ;)

Khosi Dlamini

From: Judy Bell <judybell@mweb.co.za>
Sent: 18 September 2017 11:47 AM
To: ERM South Africa Project ENI Offshore Exploration
Cc: eia@frackfreesa.org.za
Subject: RE: ENI Exploration EIA

Hi Charlene

And... What about letting me know how you are going to notify people in the initial correspondence where the project lies, so they can decide to participate or not?

Thanks
Judy

From: ERM South Africa Project ENI Offshore Exploration [<mailto:eni.exploration.eia@erm.com>]
Sent: Monday, September 18, 2017 8:34 AM
To: Judy Bell
Cc: eia@frackfreesa.org.za
Subject: RE: ENI Exploration EIA

Good Morning Judy

Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.

ERM
2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa
T +27 21 681 5400 | **F** +27 21 686 0736 | **M** +27 82 532 7231
E charlene.jefferies@erm.com | **W** www.erm.com



ERM *The business of sustainability*

From: Judy Bell [<mailto:judybell@mweb.co.za>]
Sent: Friday, September 15, 2017 3:50 PM
To: ERM South Africa Project ENI Offshore Exploration
Cc: eia@frackfreesa.org.za
Subject: ENI Exploration EIA

Hi there

Please would you notify all the IAP's where this block is located so that they know if this is a local issue for them or not. Please note this in your comments register in the documentation submitted to the authorities.

Thanks
Judy Bell

www.frackfreesa.org.za
www.facebook.com/frackfreesouthafrica
Twitter: frackfreekzn

Khosi Dlamini

From: Kevin Cole <kcole@elmuseum.za.org>
Sent: 20 September 2017 03:49 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Registration I&AP
Attachments: erm 001.jpg

Attached the registration and comment sheet –

EIA FOR THE EXPLORATION DRILLING WITHIN BLOCKS ER236,
OFFSHORE OF THE EAST COAST, SOUTH AFRICA

*Kevin Cole Pr. Sci. Nat.
Principal Natural Scientist
East London Museum
PO Box 11021
Southernwood 5213
South Africa
Tel. +27 (43) 7430 686
Fax +27 (43) 7433 127*



Registration and Comment Sheet

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA

Should you have any queries, comments or suggestions regarding the proposed Project, please note them below.

Return this comment sheet to:

Charlene Jefferies of ERM Southern Africa

Email: eni.offshore.eia@erm.com


Tel: 021 681 5400;

Postnet Suite 90, Private Bag X12, Tokai, 7966

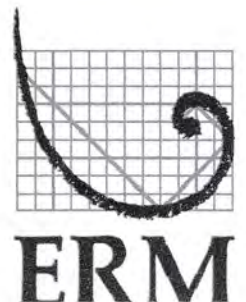
Project Website: www.erm.com/eni-exploration-eia

I want to formally register as an Interested and Affected Party (I&AP) and be provided with further information and notifications during the EIA process	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
I would like to receive my notifications by:	Email <input checked="" type="checkbox"/>	Post <input type="checkbox"/> Fax <input type="checkbox"/>

Comments

Title and Name:	ALEX & ANN PARETAS - BROSENS		
Organisation:	KWALUCIA ENTERPRISES PTY LTD		
Telephone:	079 618 66 89	Fax:	/
Cell:	079 618 66 89	Email:	KWALUCIA@KWALUCIA.COM
Postal Address:			
Name ALEX ANN	Signature 	Date 23/9/2017	

Thank you for your participation!





9 October 2017

Charlene Jefferies
ERM Southern Africa
Email: eni.offshore.eia@erm.com
Tel: 021 681 5400
Postnet Suite 90
Private Bag X12, Tokai, 7966

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236 OFFSHORE OF THE EAST COAST, SOUTH AFRICA.

The concerns we have are the following:

1. The drilling activities proposed, can be characterised as deep water will be near Marine Protected Areas which are detrimental to our ocean ecosystem. Deep water drilling is amongst the most hazardous and technically challenging of all drilling operations and presents unusually high risk of upset relative to onshore and/or shallow water drilling. This is a direct consequence of extreme depth and pressure accentuated by local factors such as current and weather.
2. The incidents of Piper Alpha in the North Sea (1988), the Texas City, Texas refinery explosion (2005), and the Macondo deepwater Gulf of Mexico blowout and spill in 2010 have made it abundantly clear that personnel safety and process safety cannot be treated interchangeably. In our view the inhospitable character of our offshore sea state, together with certainty of increasing cyclonic disturbances associated with global warming present's very serious hazards particularly as the offshore location is in known track of departing cyclonic systems originating in the Mozambique Channel.
3. The distance offshore and the extreme depth poses technical considerations for our country. At this point is highly doubtful whether we have any capability to launch a sophisticated response capability as is possible in similar operations in North Sea or Gulf of Mexico where even there the incidents referred to above occurred. We also do not believe that there exists any capability at local South African level to cap a blowout or to launch an offshore rescue as the distance is simply beyond what the NSRI or maritime response is capable of. We ask therefore who exactly will be providing such services?

The Right to Know | The Duty to Inquire | The Obligation to Act

4. The drill site is located off the East coast of South Africa and squarely within the North/South Agulhas current. This means that in the event of an uncontrolled and unmitigated release of hydrocarbons that the potential for such hydrocarbons to pollute our entire coastline becomes very real. The impact will certainly not be limited to localised KZN area. The offsite consequences will therefore be determined by severity of the harm so caused together with current strength and direction. It is imperative therefore that appropriate and detailed sea current and weather modelling data be obtained and assessed as a minimum precaution and that this data is used to determine end consequence in event of spill or blow out prior to any grant of approval. A formal evaluation of the risk to the environment would be grossly defective without actual real time data on sea conditions generally relevant to the exploration zone and specific to the water column where the drilling is to take place. We do not believe this information exists at present time and we therefore request detail on how it will be obtained in order that considered decisions are made in accordance with principles espoused by NEMA, in particular the precautionary principle. .
5. With the base in Richards Bay, and the need to charter supplies from base to the drilling rig, supplies such as the diesel and drilling fluid could spill into the ocean causing great harm to the ecosystem. We therefore would wish to enquire that given the fact that the South African coastline is regarded by mariners as notoriously dangerous and unpredictable how safe ship to rig transfers of fuels ,consumables and personnel will take place
6. It is noted that the drill site is a significant distance offshore which by implication makes timeous intervention in event of mishap very problematic. The form of mishap such as in a spill or blowout presents not only in the form of obvious environmental outcomes but also in directly negative consequences to workers health and safety in form of fire with death by explosion and burns the leading cause of documented death according to the Oil and Gas Producers Association (OGP). How will such incidents be managed?
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Must include the loss of food security, employment, and local businesses and how this will impact on their aquaculture and sustainability.

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With the recent disaster on the Deepwater Horizon that occurred on the 20th of April 2010 as an example, we can clearly note that exploration drilling is not completely safe for the environment, the people and the ocean. On April the 20th 2010, The Deepwater Horizon, a semi-submersible offshore oil rig, exploded killing 11 people and spilling an estimated 4.9 million barrels of oil into the Gulf of Mexico. It is considered the largest marine oil spill in the history of the petroleum industry.

The oil leak was discovered on the afternoon of 22 April 2010 when a large oil slick began to spread at the former rig site. The oil flowed for 87 days. BP originally estimated a flow rate of 1,000 to 5,000 barrels per day. The Flow Rate Technical Group (FRTG) estimated the initial flow rate was 62,000 barrels per day. The total estimated volume of leaked oil approximate 4.9 million barrels with plus or minus 10% uncertainty, including oil that was collected, making it the world's largest accidental spill.

According to the satellite images, the spill directly impacted 68,000 square miles (180,000 km²) of ocean, which is comparable to the size of Oklahoma. By early June 2010, oil had washed up on 125 miles (201 km) of Louisiana's coast and along the Mississippi, Florida, and Alabama coastlines. Oil sludge appeared in the Intracoastal Waterway and on Pensacola Beach and the Gulf Islands National Seashore. In late June, oil reached Gulf Park Estates, its first appearance in Mississippi. In July, tar balls reached Grand Isle and the shores of Lake Pontchartrain. In September a new wave of oil suddenly coated 16 miles (26 km) of Louisiana coastline and marshes west of the Mississippi River in Plaquemines Parish. In October, weathered oil reached Texas. As of July 2011, about 491 miles (790 km) of coastline in Louisiana, Mississippi, Alabama and Florida were contaminated by oil and a total of 1,074 miles (1,728 km) had been oiled since the spill began. As of December 2012, 339 miles (546 km) of coastline remain subject to evaluation and/or cleanup operations.

The spill area hosts 8,332 species, including more than 1,270 fish, 604 polychaetes, 218 birds, 1,456 mollusks, 1,503 crustaceans, 4 sea turtles and 29 marine mammals. Between May and June 2010, the spill waters contained 40 times more polycyclic aromatic hydrocarbons (PAHs) than before the spill. PAHs are often linked to oil spills

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In July 2010 it was reported that the spill was "already having a 'devastating' effect on marine life in the Gulf". Damage to the ocean floor especially endangered the Louisiana pancake batfish whose range is entirely contained within the spill-affected area. In March 2012, a definitive link was found between the death of a Gulf coral community and the spill. According to the National Oceanic and Atmospheric Administration (NOAA), a cetacean Unusual Mortality Event (UME) has been recognized since before the spill began, NOAA is investigating possible contributing factors to the ongoing UME from the Deepwater Horizon spill, with the possibility of eventual criminal charges being filed if the spill is shown to be connected. Some estimates are that only 2% of the carcasses of killed mammals have been recovered.

Taking this disaster into consideration, this shows that even at an international level, anything could happen. What if the same events that took place in the Gulf of Mexico were to occur here, with the exploration rig just a near 62km's from the shore. This is why we have cause for concern for this proposed project.

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Goldman Prize Recipient 2014 (Africa)
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9 October 2017

Charlene Jefferies
ERM Southern Africa
Email: eni.offshore.eia@erm.com
Tel: 021 681 5400
Postnet Suite 90
Private Bag X12, Tokai, 7966

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236 OFFSHORE OF THE EAST COAST, SOUTH AFRICA.

The concerns we have are the following:

1. The drilling activities proposed, can be characterised as deep water will be near Marine Protected Areas which are detrimental to our ocean ecosystem. Deep water drilling is amongst the most hazardous and technically challenging of all drilling operations and presents unusually high risk of upset relative to onshore and/or shallow water drilling. This is a direct consequence of extreme depth and pressure accentuated by local factors such as current and weather.
2. The incidents of Piper Alpha in the North Sea (1988), the Texas City, Texas refinery explosion (2005), and the Macondo deepwater Gulf of Mexico blowout and spill in 2010 have made it abundantly clear that personnel safety and process safety cannot be treated interchangeably. In our view the inhospitable character of our offshore sea state, together with certainty of increasing cyclonic disturbances associated with global warming present's very serious hazards particularly as the offshore location is in known track of departing cyclonic systems originating in the Mozambique Channel.
3. The distance offshore and the extreme depth poses technical considerations for our country. At this point is highly doubtful whether we have any capability to launch a sophisticated response capability as is possible in similar operations in North Sea or Gulf of Mexico where even there the incidents referred to above occurred. We also do not believe that there exists any capability at local South African level to cap a blowout or to launch an offshore rescue as the distance is simply beyond what the NSRI or maritime response is capable of. We ask therefore who exactly will be providing such services?

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4. The drill site is located off the East coast of South Africa and squarely within the North/South Agulhas current. This means that in the event of an uncontrolled and unmitigated release of hydrocarbons that the potential for such hydrocarbons to pollute our entire coastline becomes very real. The impact will certainly not be limited to localised KZN area. The offsite consequences will therefore be determined by severity of the harm so caused together with current strength and direction. It is imperative therefore that appropriate and detailed sea current and weather modelling data be obtained and assessed as a minimum precaution and that this data is used to determine end consequence in event of spill or blow out prior to any grant of approval. A formal evaluation of the risk to the environment would be grossly defective without actual real time data on sea conditions generally relevant to the exploration zone and specific to the water column where the drilling is to take place. We do not believe this information exists at present time and we therefore request detail on how it will be obtained in order that considered decisions are made in accordance with principles espoused by NEMA, in particular the precautionary principle. .
5. With the base in Richards Bay, and the need to charter supplies from base to the drilling rig, supplies such as the diesel and drilling fluid could spill into the ocean causing great harm to the ecosystem. We therefore would wish to enquire that given the fact that the South African coastline is regarded by mariners as notoriously dangerous and unpredictable how safe ship to rig transfers of fuels ,consumables and personnel will take place
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Khosi Dlamini

From: McDonald Mutsvangwa <mmutsvangwa@gmail.com>
Sent: 05 October 2017 08:00 PM
To: ERM South Africa Project ENI Offshore Exploration
Cc: McDonald Mutsvangwa
Subject: Registration as an I&AP for Richards bay exploration project

Registration as an I&AP for Richards bay exploration project

My other email address is mcdonald.mutsvangwa@sebatagroup.com and my cell number is 062 977 3859

Khosi Dlamini

From: Mareike Straeuli <mareike.straeuli@acerafrica.co.za>
Sent: 19 September 2017 12:13 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: EIA for Exploration Drilling Block ER236, off the East Coast of SA

Hi Charlene

I spoke to you this morning about sending me a map for the project.

I just thought I would send an email in case my email address doesn't work.

Thanks,

Mareike Straeuli

Environmental Consultant

ACER (Africa) Environmental Consultants




Tel: +27 35 340 2715

Mobile: +27 84 431 3520

Fax: +27 35 340 2232

E-mail: mareike.straeuli@acerafrica.co.za

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Khosi Dlamini

From: Sharin Govender <Sharin.Govender@umhlathuze.gov.za>
Sent: 09 October 2017 10:35 AM
To: Charlene Jefferies; ERM South Africa Project ENI Offshore Exploration; Lindsey Bungartz; Central Registry
Subject: Fwd: FW: Notification of Environmental Impact Assessment: Exploration Drilling within Offshore Block ER236, South Africa
Attachments: BID_Eni_Exploration_September2017.pdf

Registry : Incoming Mail

Dear ERM Team

The City of uMhlathuze hereby registers its interest in the attached application. Please forward us the necessary reports as and when they are available so that we duly inform the EIA process. Please note that the information must be submitted in soft copy format. In doing so, kindly cc further correspondence to our Central Registry: creg@umhlathuze.gov.za

Regards

Sharin Govender

Projects Manager : Environmental Planning

Department: City Development

City of uMhlathuze

[035 9075174](tel:0359075174) | [0824504187](tel:0824504187) | Sharin.Govender@umhlathuze.gov.za

From: Lindsey Bungartz [<mailto:Lindsey.Bungartz@erm.com>] **On Behalf Of** ERM South Africa Project ENI Offshore Exploration
Sent: 15 September 2017 11:58 AM
To: Lindsey Bungartz <Lindsey.Bungartz@erm.com>; Charlene Jefferies <Charlene.Jefferies@erm.com>
Subject: Notification of Environmental Impact Assessment: Exploration Drilling within Offshore Block ER236, South Africa

Dear Stakeholder

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an exploration right off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 (12/3/236) to assess the commercial viability of the hydrocarbon reservoir for future development.

The Project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR), through the Petroleum Agency South Africa (PASA). The authorisation would be under the National Environmental Management Act (NEMA) (Act No. 107 of 1998).

This notification serves to announce the commencement of the EIA process. For further information about the Project and associated EIA, as well as the public participation process, please refer to the attached Background Information Document.

To register as an Interested and Affected Party I&AP please contact Charlene Jefferies of ERM:

Tel: 021 681 5400

Email: eni.offshore.eia@erm.com

Postal address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Visit the Project website: www.erm.com/eni-exploration-eia

Yours Sincerely
ERM Team

ERM Southern Africa (Pty) Ltd

2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa

T +27 21 681 5400 | **F** +27 21 686 0736

W www.erm.com



ERM *The business of sustainability*

Khosi Dlamini

From: Dumisani Myeni <luvdumi@gmail.com>
Sent: 19 September 2017 11:45 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: I&AP Register for Exploration and Drilling on Eastern Coast of South Africa
Attachments: Interested and Affected Parties Register for Exploration and Drilling at Eastern Cost .pdf

Dear Ms Jefferies

Attached,

Please receive my registration for I&AP for Exploration and Drilling on Eastern Coast of South Africa.

My registration is merely for two purpose; to participate in EIA as a local citizen (Residing at Richardsbay) ,; and to participate in order to get some insight knowledge on the nature of activities for my study purpose, currently studying BSc Hon. in Environmental Management. This will help me enhance my education especially in the off shore projects.

I have intense knowledge and experience on stakeholders engagement, as I work as Environmental, Health & Safety Officer and ISD (Social) Facilitator.

I am contactable at this email; luvdumi@gmail.com

Kind Regards

Dumisani Myeni

Registration and Comment Sheet

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA

Should you have any queries, comments or suggestions regarding the proposed Project, please note them below.

Return this comment sheet to:

Charlene Jefferies of ERM Southern Africa

Email: eni.offshore.eia@erm.com

Tel: 021 681 5400;

Postnet Suite 90, Private Bag X12, Tokai, 7966

Project Website: www.erm.com/eni-exploration-eia

I want to formally register as an Interested and Affected Party (I&AP) and be provided with further information and notifications during the EIA process		Yes YES	No
I would like to receive my notifications by:	Email EMAIL	Post	Fax

Comments

I AM A RESIDENT OF ST LUCIA ESTUARY (1 SHADLAAN)			
I WILL ATTACH AN ARTICLE FROM NEW SCIENTIST			
THAT DESCRIBES OUR CONCERN.			
Title and Name:	MR. ST. J. T. FIELD		
Organisation:	PRIVATE / PERSONAL		
Telephone:		Fax:	
Cell:	079 103 8405	Email:	stjohnfield@yahoo.co.uk
Postal Address:	PO BOX 184 RIVER VIEW 3930		
JOHN FIELD			2017-09-25
Name	Signature		Date

Thank you for your participation!



PAT BONSHTAL/AMY STOCK PHOTO



Insurance nightmare

The next big crash

Will saving the planet mean financial doom, asks **Michael Le Page**

THE great crash of 2023 made the 2007 financial crisis look like a blip. It was triggered by US president Bernie Sanders signing emergency measures to slash carbon emissions. Investors started panic-selling stocks in fossil fuel companies. Trillions were wiped from the stock markets within days – and hundreds of millions of people around the world lost their pensions.

Impossible? Not according to financial regulators, who are so concerned about the prospect of climate-related financial crashes that they are already taking action to stop them happening. They want all big organisations to start assessing and disclosing

3 out of 5

Top US coal firms filing for bankruptcy since 2010
SOURCE: BANK OF ENGLAND

their climate-related risks.

“The whole point of this exercise is to avoid that kind of crash happening,” says Michael Wilkins of credit rating agency S&P Global Ratings, a member of the Task Force on Climate-related Financial Disclosures, which unveiled its guidelines last week.

But the guidelines are voluntary. They will work only if they are widely adopted, and the companies facing the biggest

risks will be the most reluctant to disclose them. So can we really prevent a financial crash when we get serious about limiting global warming? Or does saving the planet inevitably involve a very bumpy economic ride?

The rapid warming of the planet poses two related threats to the financial system. There is the cost of physical damage inflicted by a changing climate, which is already high and climbing. For instance, insurance market Lloyd’s of London estimates that sea level rise due to climate change increased the losses from Superstorm Sandy by a third, adding around \$5 billion to the cost.

“The increase in the severity

and the frequency of losses incurred due to climatic events such as floods, heatwaves and so on, let alone the damage caused by rising coastal waters, is causing billions and billions of losses to economies right now,” says Wilkins.

The costs could rise so high that insurers either go bust or drastically limit what they cover. This could lead to existing properties becoming unsellable and a halt to further developments in at-risk areas. “We believe absolutely as an insurance company that climate risk presents an existential crisis for the insurance sector north of 4°C [of warming],” says Steve Waygood of Aviva Investors, another member of the task force.

The second threat is the fact that the financial industry – almost certainly including your bank and pension fund – is betting heavily on things carrying on as they are now. They are investing in companies trying to find yet more oil and gas, in car firms with no plans to switch to electric vehicles, in real estate threatened by rising seas and more.

On paper, these investments are worth trillions. But their value depends on investor confidence in the status quo. If that changes, their value will plummet.

The low-carbon transition will lead to the reallocation of a significant fraction of the world’s capital. If this happens suddenly, it could lead to “a rapid system-wide adjustment that threatens financial stability”, the Bank of England warned in June.

This is what happened in 2007, when it became clear banks had been making high-risk loans that would never be repaid. The end result, of course, was the worst crash since the 1930s and the loss of trillions of dollars of wealth as the value of stock-market listed firms was rapidly reassessed.

The danger could be more immediate than many think. In June, one real estate investment

company started recommending against investing in property in South Florida because there is no way to protect most of it against rising seas and storms. If enough follow suit, property prices in the area will fall.

The risks are certainly worrying Mark Carney, governor of the Bank of England and chair of the Financial Stability Board, an international body that aims to identify and address financial vulnerabilities. It was the FSB that set up the Task Force on Climate-related Financial Disclosures, at Carney's instigation. Already, institutions responsible for \$25 trillion in assets have said they support the initiative, including Barclays, Morgan Stanley and PepsiCo.

Ignoring the risks

Unsurprisingly, some in the fossil fuel industry dismiss the idea that they are exposed to any risks, let alone that they should have to disclose them.

For instance, a recent report from the Independent Petroleum Association of America claimed pension funds would lose trillions if they sold all their shares in oil firms. But the report is based on the assumption that oil companies will do as well over the next 50 years as they did in the past 50 years. That's laughably absurd.

Last year, another report for the oil industry attacked the idea of a carbon bubble – that the value of oil and gas companies depends on reserves that they will be unable to sell as we shift away from fossil fuels. It claims 80 per cent of the value of oil and gas companies depends on reserves

\$19.2 trillion

Cost of the 2007-2009 financial crisis to US households

SOURCE: US TREASURY

that they will be able to sell in the next 10 to 15 years.

However, the issue for fossil fuel companies isn't just whether they will be able to sell their products in future; it's whether they can make a profit.

The US is still using lots of coal, but since 2010, three of the top five coal companies have filed for bankruptcy. Cheap gas is killing coal's profits in the US, and cheap renewables could do the same to fossil fuel profits globally – even if they are only supplying a small proportion of overall energy.

"The oil majors clearly have a vested interest in the status quo not being changed as far as disclosure is concerned," says Wilkins. But pretending the problem doesn't exist will lead to far greater shocks down the line.

"The risk of panic is far greater, as we have seen with the credit crunch, when there is no information out there," says Waygood.

Disclosing companies' exposure to climate-related risks is just the first step, however. Investors and companies need to act on these disclosures by taking steps to minimise the risks.

Oil companies have already found more reserves than future climate laws may allow them to sell. These firms must accept that they cannot keep growing and instead focus on downsizing to maximise revenue from their existing reserves, says Anthony Hopley of the Carbon Tracker Initiative, a think tank set up to highlight financial risks from climate change.

If they do, they could remain profitable and valuable for decades to come. "They have to go ex-growth," says Hopley. "The growth mentality no longer applies in this new world."

Instead, fossil fuel companies are borrowing to find further reserves. According to a report in June, banks are pouring about \$100 billion a year into "extreme" fossil fuel projects – those most likely to be targeted by climate



SPENCER PLATT/GETTY IMAGES

Is worse to come?

\$100 billion

Money lent annually by banks to fund "extreme" fossil fuel projects

SOURCE: RAINFOREST ACTION NETWORK

action. These include coal mining and power plants, and oil from tar sands, the Arctic and deep offshore.

These sectors are already high risk. In 2015, Shell had to write off \$2.6 billion after withdrawing from the Arctic, and another \$2 billion on a suspended tar sands project, for instance. China has suspended more than 100 planned coal power plants.

"They are betting on an increasingly risky house," says Johan Rockström of the Stockholm Resilience Centre, who studies sustainable development.

Then there is Donald the denier. President Trump's attempt to turn back the tide on climate action in the US will probably have little effect on the country's emissions, but it could delay the transition to a low-carbon global economy if lots of the developing countries that signed up to the Paris climate agreement scale back action too.

Any delay is bad news. A late and abrupt transition away from fossil fuels is much more likely to trigger a financial crash than a

gradual one, according to a report last year from the European Systemic Risk Board, set up in 2010 to try to avert financial crashes. "The adverse scenario for the EU financial system is one of late adjustment, resulting in a 'hard landing,'" the report says.

Despite all these issues, Waygood thinks we can avoid another big crash. Few people predicted the credit crunch, he says, but this time lots of big institutions are saying there is a problem. The task force's recommendations should smooth the transition, if widely adopted.

But investors still have to bet on what they think are the most plausible scenarios. There could be trouble ahead if lots of them get it wrong – perhaps because of an unexpected technological revolution, like turning solar power into petrol, or some climate tipping point kicking in early, such as the Gulf Stream grinding to a halt.

Rockström is optimistic, though. "There may be a sudden shock, no doubt, but there's growing global preparedness," he says. "There will be a quick bounceback."

But by a quick bounceback he means a recovery like the one after the 2007 crisis. To the millions of austerity-hit people around the world who are still suffering as a result of that crash, that's not exactly comforting. ■

Khosi Dlamini

From: Niall Kramer <niall.kramer@gmail.com>
Sent: 09 October 2017 02:35 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Eni and Sasol exploration

Please register me as an Interested party

Niall Kramer | 27 825340296

Registration and Comment Sheet

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA

Should you have any queries, comments or suggestions regarding the proposed Project, please note them below.

Return this comment sheet to:

Charlene Jefferies of ERM Southern Africa

Email: eni.offshore.eia@erm.com

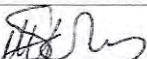
Tel: 021 681 5400;

Postnet Suite 90, Private Bag X12, Tokai, 7966

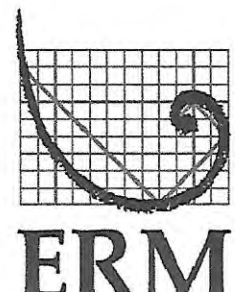
Project Website: www.erm.com/eni-exploration-eia

I want to formally register as an Interested and Affected Party (I&AP) and be provided with further information and notifications during the EIA process		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
I would like to receive my notifications by:	Email <input checked="" type="checkbox"/>	Post <input type="checkbox"/>	Fax <input type="checkbox"/>

Comments

NO OBJECTION			
Title and Name:	MR MADIMETJA LEPHISO		
Organisation:	ALECTRONA CONSULTING (PTY) LTD		
Telephone:	N/A	Fax:	
Cell:	079 029 0132	Email:	solomon@electrona.co.za
Postal Address:	28 MT AGMAR ISLANDS ROCK EST		
SOUTHCREST	1449		
Name	Signature 	Date	18/09/2017

Thank you for your participation!



Khosi Dlamini

From: Percy Langa <Percy.Langa@rbidz.co.za>
Sent: 18 September 2017 02:31 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: RE: FW: Notification of Environmental Impact Assessment: Exploration Drilling within Offshore Block ER236, South Africa

Good day Charlene,
Please register the RBIDZ as an I&AP.
Regards.



Percy Langa
SHEQ Manager

Richards Bay Industrial Development Zone Company SOC Ltd
4 Harbour Arterial Rd, Alton, Richards Bay, 3900
T: (+27) 35 797 2600 | M: (+27) 82 7072 964 | W: www.rbidz.co.za
ISO 9001 certified organisation

This e-mail and its contents are subject to the RBIDZ SOC Ltd. E-mail legal notice [Disclaimer](#)  

From: Lindsey Bungartz [<mailto:Lindsey.Bungartz@erm.com>] **On Behalf Of** ERM South Africa Project ENI Offshore Exploration
Sent: 15 September 2017 11:58 AM
To: Lindsey Bungartz <Lindsey.Bungartz@erm.com>; Charlene Jefferies <Charlene.Jefferies@erm.com>
Subject: Notification of Environmental Impact Assessment: Exploration Drilling within Offshore Block ER236, South Africa

Dear Stakeholder

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an exploration right off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 (12/3/236) to assess the commercial viability of the hydrocarbon reservoir for future development.

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To register as an Interested and Affected Party I&AP please contact Charlene Jefferies of ERM:

Tel: 021 681 5400

Email: eni.offshore.eia@erm.com

Postal address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Visit the Project website: www.erm.com/eni-exploration-eia

Yours Sincerely

ERM Team

ERM Southern Africa (Pty) Ltd

2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa

T +27 21 681 5400 | **F** +27 21 686 0736

W www.erm.com



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Registration and Comment Sheet

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA

Should you have any queries, comments or suggestions regarding the proposed Project, please note them below.

Return this comment sheet to:

Charlene Jefferies of ERM Southern Africa

Email: eni.offshore.eia@erm.com

Tel: 021 681 5400;

Postnet Suite 90, Private Bag X12, Tokai, 7966

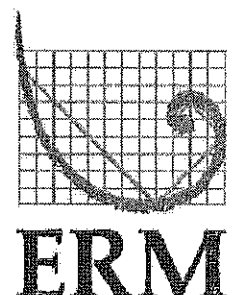
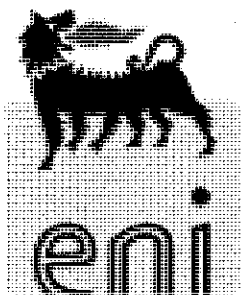
Project Website: www.erm.com/eni-exploration-eia

I want to formally register as an Interested and Affected Party (I&AP) and be provided with further information and notifications during the EIA process	<input checked="" type="radio"/> Yes	<input type="radio"/> No
I would like to receive my notifications by:	<input checked="" type="radio"/> Email	<input type="radio"/> Post <input type="radio"/> Fax

Comments

Title and Name:				Mrs Norma Patrick			
Organisation:				P.O.D. and Oceanwatch SA			
Telephone:		072 590 2919		Fax:		033 330 6005	
Cell:		072 590 2919		Email:		norma.patrick8@gmail.com	
Postal Address:				PO Box 68 Howick 3290			
Name		Signature		Date		26/9/2017	
Norma Patrick		N Patrick					

Thank you for your participation!



Registration and Comment Sheet

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA

Should you have any queries, comments or suggestions regarding the proposed Project, please note them below.

Return this comment sheet to:

Charlene Jefferies of ERM Southern Africa

Email: eni.offshore.eia@erm.com

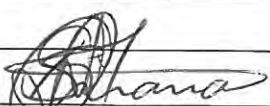
Tel: 021 681 5400;

Postnet Suite 90, Private Bag X12, Tokai, 7966

Project Website: www.erm.com/eni-exploration-eia

I want to formally register as an Interested and Affected Party (I&AP) and be provided with further information and notifications during the EIA process		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
I would like to receive my notifications by:	Email <input checked="" type="checkbox"/> Samuel@groundwork.org.za	Post <input type="checkbox"/>	Fax <input type="checkbox"/>

Comments

Kindly consider this as official notification of our interest in this matter and would like to be considered an interested party.			
Title and Name:	MR. SAMUEL NDUMBA CHADENANA		
Organisation:	GROUNDWORK		
Telephone:	033-342 5662	Fax:	033-342 5665
Cell:	012 923 1942	Email:	Samuel@groundwork.org.za
Postal Address:	P.O. BOX 2375, PIETERMARITZBURG, 3200		
Name	Signature	Date	
Samuel		11 October 2017	

Thank you for your participation!



Khosi Dlamini

From: Sandy Camminga <camminga@iafrica.com>
Sent: 17 September 2017 02:06 PM
To: Lindsey Bungartz
Subject: RE: Notification of Environmental Impact Assessment: Exploration Drilling within Offshore Block ER236, South Africa

Dear Lindsey

The email below which was forwarded to me by a colleague has reference.

Kindly register the **Richards Bay Clean Air Association (RBCAA)** as an Interested and Affected Party.

Thank you.

Kind regards,

Sandy Camminga | Director | **Richards Bay Clean Air Association** [NGO]
P O Box 10299, Meerensee, 3901, Office A6-A7, Smart Plan Building, 95 Dollar Drive, Richards Bay
T: +27 (35) 786 0076 | C: +27 (83) 515 2384 | E: camminga@iafrica.com | www.rbcaa.co.za

“IMPROVING THE ENVIRONMENT FOR ALL”

From: Lindsey Bungartz [<mailto:Lindsey.Bungartz@erm.com>] **On Behalf Of** ERM South Africa Project ENI Offshore Exploration
Sent: 15 September 2017 11:58 AM
To: Lindsey Bungartz <Lindsey.Bungartz@erm.com>; Charlene Jefferies <Charlene.Jefferies@erm.com>
Subject: Notification of Environmental Impact Assessment: Exploration Drilling within Offshore Block ER236, South Africa

Dear Stakeholder

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an exploration right off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 (12/3/236) to assess the commercial viability of the hydrocarbon reservoir for future development.

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To register as an Interested and Affected Party I&AP please contact Charlene Jefferies of ERM:
Tel: 021 681 5400
Email: eni.offshore.eia@erm.com
Postal address: Postnet Suite 90, Private Bag X12, Tokai, 7966
Visit the Project website: www.erm.com/eni-exploration-eia

Yours Sincerely
ERM Team

ERM Southern Africa (Pty) Ltd

2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa

T +27 21 681 5400 | F +27 21 686 0736

W www.erm.com



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Khosi Dlamini

From: Sabine Wintner <wintner@shark.co.za>
Sent: 19 September 2017 10:04 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: registration as I&AP

Dear Madam,

please register me as an I&AP for the Oil Exploration Drilling within Offshore Block ER236, South Africa.

Thank you



Senior Scientist
KwaZulu-Natal Sharks Board
Private Bag 2, Umhlanga Rocks 4320, South Africa
Tel: ++27-31-5660410
Fax: ++27-31-5660493
E-mail: wintner@shark.co.za
Website: <http://www.shark.co.za>

Honorary Research Fellow, Biomedical Resource Unit University of KwaZulu-Natal, Westville Campus

Sabine Wintner
Senior Scientist

Telephone: 0315660400 | **Fax:** +27 31 566 0493 | **Email:** wintner@shark.co.za
Physical Address: 1a Herrwood Drive, Umhlanga Rocks, 4320 | www.shark.co.za



Connect with us on social media:  

Khosi Dlamini

From: ShaniceChantelF Firmin <shanicechantelf@gmail.com>
Sent: 18 September 2017 03:50 PM
To: ERM South Africa Project ENI Offshore Exploration
Cc: Chadley; Desmond
Subject: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA
Attachments: BID_Eni_Exploration_September2017 - Shanice Gomes registration.pdf

Dear Charlene

Please find attached registration form, please register me as an interested and affected party.

Regards

Shanice

--

Shanice Gomes

Environmental Project Officer

Development, Infrastructure, Climate Change

Kindly note my new email address: shanice@sdceango.co.za

South Durban
Community
Environmental
Alliance



EMAIL: Shanice@sdceango.co.za

TEL: 0314611991

FAX: 0314681257

www.sdcea.co.za

sdceanews.blogspot.com/

<http://www.facebook.com/sdcea>

Skype: [durban1995](https://www.skype.com/people/durban1995)

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Registration and Comment Sheet

EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA

Should you have any queries, comments or suggestions regarding the proposed Project, please note them below.

Return this comment sheet to:

Charlene Jefferies of ERM Southern Africa

Email: eni.offshore.eia@erm.com


Tel: 021 681 5400;

Postnet Suite 90, Private Bag X12, Tokai, 7966

Project Website: www.erm.com/eni-exploration-eia

I want to formally register as an Interested and Affected Party (I&AP) and be provided with further information and notifications during the EIA process	<input checked="" type="radio"/> Yes	<input type="radio"/> No
I would like to receive my notifications by:	<input checked="" type="radio"/> Email	<input type="radio"/> Post <input type="radio"/> Fax

Comments

Title and Name:	MR. A. J. LAAS		
Organisation:	PRIVATE		
Telephone:	082 822 5015	Fax:	—
Cell:	082 822 5015	Email:	laasaj@gmail.com
Postal Address:	—		
Name A. J. LAAS	Signature 	Date 9 OCTOBER 2017	

Thank you for your participation!



Khosi Dlamini

From: Suvana Alakram <suvana.alakram@gmail.com>
Sent: 20 September 2017 03:30 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Request to be an I&AP

Dear Charlene Jefferies

Your ref : 0414229

This email is in response to the invitation to be registered as an I&AP for Exploration Drilling off the East coast of South Africa as advertised in the Zululand Observer.

I am a resident of Richards Bay and being an environmentalist would be very interested to be part of the public participation process. I have an inherent love for the environment and would like to keep abreast on environmental issues in my area. I do have a qualification in environmental management and am currently unemployed. I would also like to get more exposure to the public participation process.

Looking forward to hearing from you.

Suvana Alakram

Charlene Jefferies

From: Anne Louw <annelouw@icmpeople.com>
Sent: 01 November 2017 08:42 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: ER236 exploratory drilling - IAP registration request

Good Day Charlene,
I hope that you are well.

I would like to register our company as an IAP for the Block ER236 East Coast of SA exploratory drilling please.

Please would you register :

ICM People South Africa (Pty) Ltd
Ms. Anne Louw
Tel: +27 82 3393356

Please confirm,

Many thanks,

Anne Louw
Operations Manager



Connecting people to the future

Mobile : +27 82 339 3356
annelouw@icmpeople.com
www.icmpeople.com

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Charlene Jefferies

From: Sharin Govender <Sharin.Govender@umhlathuze.gov.za>
Sent: 09 November 2017 03:14 PM
To: Charlene Jefferies; ERM South Africa Project ENI Offshore Exploration; Lindsey Bungartz; Central Registry
Subject: Fwd: RE: Notification of Draft Scoping Report: EIA for Exploration Drilling within Offshore Block ER236, KZN, South Africa
Attachments: RE: Notification of Draft Scoping Report: EIA for Exploration Drilling within Offshore Block ER236, KZN, South Africa

Good day

My previous correspondence with regards to this process refers. Please ensure that all communication is sent to me as well

Regards


Sharin Govender



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Charlene Jefferies

From: Nicoll Joubert <nicoll@lovemore.co.za>
Sent: 03 January 2018 08:37 AM
To: ERM South Africa Project ENI Offshore Exploration
Cc: Bruce Lovemore
Subject: Interested Party - Block ER 236 (12/3/236) - Exploration off coast of Richards Bay

Good morning Charlene,
I trust you are doing well.

I believe the public meeting has been moved out to Jan/Feb 2018.

I request that we be documented as an interested party to obtain relevant information regarding the status of this project going forward.

Please advise what additional information you may require.

Kind regards,

NICOLL JOUBERT
LOGISTICS SPECIALIST
073 951 0568

nicoll@lovemore.co.za

www.lovemore.co.za

RBIDZ, Medway Road, Richards Bay, 3900 | P.O.Box 2185, New Germany, 3620 | T +27 35 007 0070 | F +27 86 606 1141 | C +27 73 951 0568



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Charlene Jefferies

From: Nuala Gage Intertek <nuala.gage@intertek.com>
Sent: 06 December 2017 03:42 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: ENI South Africa Offshore Exploration EIA
Attachments: bid_eni_exploration_september2017 - Intertek Industry Services Registration Information Page.pdf

Please, see attached registration for the EIA as an interested party.

Regards,

Nuala Gage
Performance Solutions Manager
Industry Services

Office +27 16 422 2870
Mobile +27 78 120 2176
Fax +27 16 421 2036

Skype Nuala,Gage

LinkedIn: https://clicktime.symantec.com/a/1/hle6UlvYsgk4LN9drgNxAU-lpQlyRmsIWf4J_MM7wt4=?d=vXKNPG4FyTnAap9ies-RnQyyg0O7KVhk_8shlydHVfo7H2PEBx7zZgT2T07FQqFmapGrDZFSnC3v4JuZTS7qzSFyATXKXS8RzkPdBQzIISN_6PAu4f8_H3o_kL0aeNdJy8cybu6mMxEHtieZd377VWqlcPeM54dmrN2utmpF6TzAl-gg0Dd2oSTydMYAHXbm8TyPWqzT5YId-49J1W-KLsyY0R-OUuGKoYEDiTujcBsJvR7zDDWlBx4yuZV_OOoX0xmb2Jvw2KsW5GauQleBo4SP2f3GjT_g6fcHJB3hdDLqrJ3eXCCcNzfTF76iW-zm23WFPFjmk46eeSSswGixliqt-sFyX7HLN5_244csg6G8RRG55KDuNXbsVzFDyG_A_XPr2OnPL1JkD48f1B0AiVZEUZHTLrLWSAnA3AomkdSUN5I%3D&u=https%3A%2F%2Fwww.linkedin.com%2Fin%2Fnuala-gage-72227b1a%2F

[www.intertek.com](https://clicktime.symantec.com/a/1/hle6UlvYsgk4LN9drgNxAU-lpQlyRmsIWf4J_MM7wt4=?d=vXKNPG4FyTnAap9ies-RnQyyg0O7KVhk_8shlydHVfo7H2PEBx7zZgT2T07FQqFmapGrDZFSnC3v4JuZTS7qzSFyATXKXS8RzkPdBQzIISN_6PAu4f8_H3o_kL0aeNdJy8cybu6mMxEHtieZd377VWqlcPeM54dmrN2utmpF6TzAl-gg0Dd2oSTydMYAHXbm8TyPWqzT5YId-49J1W-KLsyY0R-OUuGKoYEDiTujcBsJvR7zDDWlBx4yuZV_OOoX0xmb2Jvw2KsW5GauQleBo4SP2f3GjT_g6fcHJB3hdDLqrJ3eXCCcNzfTF76iW-zm23WFPFjmk46eeSSswGixliqt-sFyX7HLN5_244csg6G8RRG55KDuNXbsVzFDyG_A_XPr2OnPL1JkD48f1B0AiVZEUZHTLrLWSAnA3AomkdSUN5I%3D&u=https%3A%2F%2Fwww.linkedin.com%2Fin%2Fnuala-gage-72227b1a%2F)

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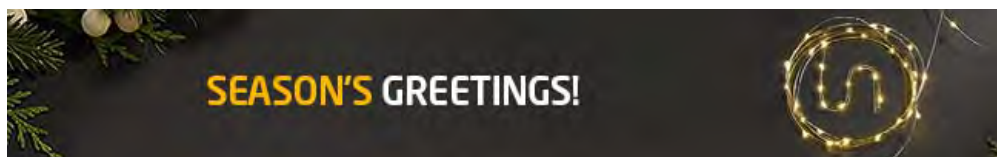
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Charlene Jeffries

From: Enrico Ganter (FM) <efg@falconmere.com>
Sent: 06 December 2017 10:05 PM
To: ERM South Africa Project ENI Offshore Exploration
Cc: Justus van der Spuy (FM)
Subject: RE: ATTN: Charlene Jeffries - RE: ENI EIA Registration and Comment Sheet
Attachments: ENI EIA Registration and Comment Sheet 20171206.pdf

With Attachment!!

Enrico Ganter
FalconMere (Pty) Ltd
www.falconmere.com
SA Mobile: +27 82 6416162
UK Mobile: +44 7979 517192

From: Enrico Ganter (FM) [mailto:efg@falconmere.com]
Sent: 06 December 2017 19:43
To: 'eni.offshore.eia@erm.com'
Cc: Justus van der Spuy (FM)
Subject: RE: ATTN: Charlene Jeffries - RE: ENI EIA Registration and Comment Sheet

Dear Charlene,

Please find the signed EIA Registration and Comment Sheet attached.
Thanks and regards.

Enrico

Enrico Ganter
FalconMere (Pty) Ltd
www.falconmere.com
SA Mobile: +27 82 6416162
UK Mobile: +44 7979 517192

Charlene Jefferies

From: Fred Kockott <fredk@rovingreporters.co.za>
Sent: 06 November 2017 06:57 AM
To: eia@erm.com; ERM South Africa Project ENI Offshore Exploration
Subject: ENI Offshore Drilling Scoping Report

Follow Up Flag: Follow up
Flag Status: Flagged

ERM Southern Africa (Pty) Ltd

Dear Charlene and Lindsay

Roving Reporters is following up on ENI Offshore Drilling Scoping Report for the exploration drilling programme on the KwaZulu-Natal coast (www.erm.com/eni-exploration-eia/) and will appreciate it if you could assist with these queries below.

Please could Environmental Resources Management (ERM) advise whether it has received any formal objections to the proposed drilling programme so far, and if possible, provide an account of what the principle objections are.

As I read it, if the environmental authorisation is granted as per the planned EIA schedule, Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) will be drilling for oil and gas reserves within a 1,840 km² area stretching from Port Shepstone in the south to St Lucia in the north within nine to ten months from now.

Please advise whether the EIA approval process gives ERM sufficient time to properly assess:

- 1 the risk of oil/gas blows arising from offshore drilling operations

- 2 significant environmental impacts that the offshore drilling will cause, including:
 - 2.1 SEA FLOOR DEGRADATION
 - 2.2 SEDIMENT POLLUTION: generation of vast plumes of sediment arising from the “disposal of cuttings to the seafloor and overboard during drilling” which, as the scoping report states, will “disturb the marine habitats, benthic communities and marine fauna present in the area”. ERM states that this issue will be assessed further in the EIR process, including “a discussion around the treatment and base fluid content of these muds and cuttings prior to disposal”. Please explain what is meant by a discussion, and what, if any legal enforcement measures would be in place to prevent unnecessarily destructive environmental practices by the drilling operators.
 - 2.3 EFFLUENT POLLUTION: High levels of pollution arising from wastewater and operational discharges from the drillship/s and other project vessels with possible lasting impact on fish life, marine mammals and turtles. The scoping report states that this impact will be assessed further in the EIR “including a discussion around the mitigation of this impact” by ensuring all vessel discharges are compliant with “MARPOL 73/78 Annex I, Annex V and Annex IV”. Please could you explain in layman terms what this exactly means and in a way that the envisaged pollution impact will be fully understood by people living along this coast, including subsistence and commercial fishermen.

- 2.4 NOISE POLLUTION: Noise generated by drillship/s “could lead to disturbances to marine habitats and fauna, especially to marine mammals and fish”. Please advise how the impact of underwater noise will be assessed and by whom in the further EIA process.
- 2.5 CLIMATE CHANGE: The scoping report states that “there are climate change implications from the burning of fossil fuels by the project vessels”. For context, please provide our readers an idea of how much fossil is consumed in gas/oil explorations and whether Sasol and ENI are investing in developing cleaner fuels for the future.
- 2.6 MARINE PROTECTED AREAS: The scoping report states the Block ER236 overlaps with the proposed Tugela Banks, Protea Banks, Aliwal Shoal and iSimangaliso Wetland Park marine protected areas, but says there is “no overlap of the area of interest with proposed protection areas”? Please explain what “no overlap of the area of interest” means in this case.
- 2.7 COELACANTH POPULATIONS: The scoping report states that although the southern point of the area of interest overlaps with a portion of the Goodlad Canyon, it is “unlikely that coelacanths will be found here” as this canyon “differs significantly in morphology from those in northern KZN, where coelacanths have been reported”. Please advise whether any marine scientist/s involved in recent coelacanth research can back this assertion. ERM also states that seismic data indicates that there are deep water canyons present in the centre of the area of interest. This appears to nullify the earlier comment about coelacanth populations not being affected. In addressing this question, please advise whether ERM, Eni or Sasol has commissioned any recent marine science research to map out the rich, biodiverse marine habitats within the area of interest. The comment that the “occurrence of deep water corals in Block ER236 and the area of interest are unknown” appears to indicate that no such research has been done.
- 2.8 IMPACT ON WHALES: The scoping report mentions that 36 species of cetaceans are likely to be found within Block ER236, including the Antarctic Blue whale is critically endangered, the Indo-Pacific humpback dolphin, fin whale and sei whale (endangered). the Ifafi-Kosi Bay subpopulation of the Indo-Pacific bottlenose dolphin, Sperm whale and Bryde’s whale (vulnerable). It also states Block ER236 lies within the migratory route of Humpback and Southern Right whales but does not provide any specific detail on the impact that offshore drilling is likely have on these migrations and potential long-term impact on cetacean populations on the East Coast.

2.9

Further to above, please could ERM provide an account of the surveys took place - and over what period - to determine the presence of oil and gas reserves in Block ER236, and what the outcomes of these surveys were, including the estimated value of the gas/oil reserves that Sasol and ENI plan to tap into.

Although this might not be relevant to the Offshore Drilling Scoping Report, Roving Reporters established last year seismic surveys for gas and oil on the KwaZulu-Natal coast extended into the whale migratory period last year. This earned the wrath of leading marine scientists who accused the petroleum industry of reneging on an agreement made through Operation Phakisa that seismic surveys would not occur during the period June to November. Coincidentally, Ezemvelo KZN Wildlife marine ecologist, Jennifer Olbers, states that the highest number of whale strandings were recorded on the KZN coast last year.

I would appreciate ERM’s comment on the associated concerns that Olbers raises in a presentation reviewing global literature on the effects of seismic surveys. This research, says Olbers, states that seismic blasts can interrupt the communication, reproduction, navigation and eating habits essential to the survival of marine life, including whales, dolphins, turtles and fish and even plankton.

“In the best case, marine mammals manage to escape from the noise in time. But in the worst case, the extreme sound pressure causes blood vessels to rupture and deafness. In a study of stranded/entangled animals in Florida, USA, researchers found that between 36-57% of bottlenose dolphins and rough-toothed whales had profound hearing loss, implying that impaired hearing could

have led to their stranding/entanglement. In addition to this, it is suggested that even if impacts are fatal, only 2% of all whale or dolphin carcasses are detected and recovered. Such massive under-reporting of cetacean mortalities could be hiding very severe impacts. Currently, in South Africa, there is a lacuna in the mining legislation regarding reconnaissance surveys and their environmental authorisation pertaining to seismic surveys, effectively allowing these activities to occur without environmental input and potentially ignoring the harmful effects to the environment. Seismic surveys pose an unacceptable risk to marine fauna (at an individual and population level), the full extent of which will not be understood until long after the harm has occurred.”

The questions arises: Do Sasol/ENI intend to conduct / commission further seismic surveys during the exploratory drilling phase?

Lastly, on blowout risks, while the scoping report acknowledges obvious disastrous marine pollution consequences - and health and safety risks – it provides no risk assessment. Please could ERM advise, based on its experience in the field and studies it has conducted, how often blowouts of oil/gas occur in other drilling explorations around the world.

In addressing the above queries, we would appreciate if ERM (or Sasol/ENI) could also summarise in 100 - 200 words what benefits are expected to arise from the proposed exploration drilling programme, or more specifically: Who will ultimately benefit the most and at what cost to the environment?

I will appreciate if you could address these queries at your earliest possible convenience. I have an early deadline to write a story on the scoping report today.

Yours sincerely

FRED KOCKOTT
Director, Roving Reporters
Cell: 083 277 8907
Tel/fax: 031 368 6135
fredk@rovingreporters.co.za



Monday, 30/10/2017

Dear Stakeholder

RE: Environmental Impact Assessment for Exploration Drilling within Block ER236, off the East Coast of South Africa

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an Exploration Right 12/3/236 (ER 236) off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 to assess the commercial viability of the hydrocarbon reservoir for future development. The Project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR) under the National Environmental Management Act (NEMA) (Act No. 107 of 1998), as amended, through an Environmental Impact Assessment (EIA) process.

Notice is hereby given that the Draft Scoping Report is available for comment. The comment period will run for a period of 30 calendar days from **26 October 2017 to 24 November 2017.**

The Report is available on the Project website: www.erm.com/eni-exploration-eia or on request from ERM and at the following public locations:

- Durban Central Lending Public Library
- Richards Bay Library
- ERM offices, Suite S005, 17 The Boulevard, Westway Office Park, Westville

A Zulu or Afrikaans copy of the executive summary can be made available on request from ERM.

Stakeholders are invited to attend a public meeting where ERM will present more information about the project and the EIA. The public will be given an opportunity to raise issues and pose questions to the Project team.

Details of the public meeting are as follows:

Date: 13 November 2017

Venue: Premier Hotel The Richards, 3 Hibberd Dr, Meer en See, Richards Bay

Time: 17:30, the project team will be available at the venue from 16:00

Date: 14 November 2017

Venue: Gooderson Tropicana Hotel, 85 OR Tambo Parade, South Beach, Durban

Time: 17:30, the project team will be available at the venue from 16:00

You are invited to submit your comments on the Draft Scoping Report to ERM:

Email: eni.offshore.eia@erm.com

Post: Postnet Suite 90, Private Bag X12, Tokai, 7966

Tel: 021 681 5400

Website: www.erm.com/eni-exploration-eia

Your comments, and our response, will be incorporated into the Final Scoping Report to be submitted to DMR for consideration.

Please remember that your comments must reach ERM on or before 24 November 2017.

Thank you for your participation in this process.

Your sincerely

Lindsey Bungartz

Senior Consultant

ERM Southern Africa (Pty) Ltd

2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa

T +27 21 681 5400 | **F** +27 21 686 0736 |

| **W** www.erm.com

Charlene Jefferies

From: Anne Louw <annelouw@icmpeople.com>
Sent: 01 November 2017 08:42 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: ER236 exploratory drilling - IAP registration request

Good Day Charlene,
I hope that you are well.

I would like to register our company as an IAP for the Block ER236 East Coast of SA exploratory drilling please.

Please would you register :

ICM People South Africa (Pty) Ltd
Ms. Anne Louw
Tel: +27 82 3393356

Please confirm,

Many thanks,

Anne Louw
Operations Manager



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Mobile : +27 82 339 3356
annelouw@icmpeople.com
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Charlene Jefferies

From: Dippenaar ANDREW <Andrew.Dippenaar@petrosa.co.za>
Sent: 14 December 2017 02:26 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Registering as interested party

Good day ERM

Please register me as an interested party for the ENI/Sasol EIA.

I would like to receive notifications by email (this address)

The company detail as per my attached signature.

Regards

Andrew Dippenaar



Andrew Dippenaar
Manager: Geoscience Specialists & Data Support
New Ventures Upstream
PetroSA
Switchboard: +27 21 929 3000
Direct Line: +27 21 929 3076
Fax: +27 21 929 0449
Email: andrew.dippenaar@petrosa.co.za
Web: www.petrosa.co.za

South Africa's National Oil Company

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Adv L Mtunzi, Mr SS Masemola,
Mr G Moagi.

Charlene Jefferies

From: Frans Van Der Walt <frans@qs2000plus.co.za>
Sent: 09 November 2017 11:57 AM
To: ERM South Africa Project ENI Offshore Exploration; Lindsey Bungartz
Subject: RE: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER2356, OFFSHORE OF THE EAST COAST OF SA
Attachments: image006.wmz

Good Day,

Why am I not receiving these notifications ? I thought I had confirmation that I am registered as I&AP ? (I received this from Sandy Camminga – similarly to the original notice of the meeting !)

Regards,

Frans van der Walt (B.Sc (QS), Pr.QS (2167), PMAQS, MRICS)
QS2000 Plus (Quantity Surveyors & Project Managers)

QS2000 is a Certified **BBBEE level 4 Contributor**.



Contact numbers :

Tel : +27 (35) 753 4184 / 5, Fax : +27 (35) 753 4185, Cell : +27 82 4600 875

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22 Pompano Place, MEERENSEE, 3901

Website :

www.qs2000plus.co.za

Skype :

fransvanderwalt



From: ERM South Africa Project ENI Offshore Exploration [mailto:eni.exploration.eia@erm.com]
Sent: Tuesday, 07 November 2017 17:15
To: Lindsey Bungartz
Subject: RE: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER2356, OFFSHORE OF THE EAST COAST OF SA

Dear Stakeholders

This letter serves to inform you that the scope of Eni and Sasol's exploration drilling project in ER236 is being reconsidered and it will be necessary to amend the current Draft Scoping Report. As such, based on the current NEMA EIA regulations and associated timelines, Eni have decided to re-release the Draft Scoping Report and re-submit the application form in early 2018. **The public meetings scheduled for the 13th and 14th November in Richards Bay and Durban will therefore be postponed until January/February 2018** and a revised Draft Scoping Report will be released to the public and advertised prior to the meetings. It will be ensured that stakeholders are given the optimal time allowed for by legislation to comment and participate in the process.

Please note that all comments submitted during the initial notification period will still be included in the Comments and Responses Report. Once the revised scope is made available, comments already submitted may be also revised; withdrawn or replaced entirely. All stakeholders who have registered will remain on the stakeholder database.

We apologise for any potential inconvenience caused. We look forward to engaging with you further during 2018.

Yours sincerely

Lindsey

Lindsey Bungartz

Senior Consultant

ERM Southern Africa (Pty) Ltd

2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa

T +27 21 681 5400 | **F** +27 21 686 0736 |

W www.erm.com



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Charlene Jefferies

From: Willem Hofland <willem.hofland@googlemail.com>
Sent: 13 November 2017 05:30 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: gas and oil exploration taking place along the KwaZulu-Natal coast,

To whom it may concern.

In am using this temporary email as I am having issues in sending from my normal Outlook 2010's sending function. Please however continue to use my normal email address willem@hofland.co.uk

People register me as an interested party sand keep me fully informed

Many blessings
Willem

PS Please acknowledge this email

I can do all things through Christ who strengthens me. (Philippians 4:13)

Willem Hofland
8 Grindcobbe
St. Albans
Hertfordshire
AL1 2ED

main email: willem@hofland.co.uk

home phone with personal answering facility 01727 835160

mobile number in case of dire emergencies ONLY 07564 428888

PLEASE NOTE that due to excessive marketing calls **I DO NOT TAKE** calls from unidentified numbers so please email me first so your number can be added to my handset

Skype name wilhofland

Do take a look at my website '**Hope after stroke**' www.hofland.co.uk

Charlene Jefferies

From: C. Smart <smartcsa@law.co.za>
Sent: 13 November 2017 09:37 AM
To: ERM South Africa Project ENI Offshore Exploration
Cc: 'smartcsa'; 'Cheryl Smart'
Subject: RE: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER2356, OFFSHORE OF THE EAST COAST OF SA

Dear Lindsey

Would you please register me as an IAAP?

I look forward to your urgent response

Kind regards
Cheryl

Cheryl Smart
Advocates Group Seven North
Tel: 031 301 4093 / 031 301 0994
Fax: 031 301 0996
Mobile: 082 213 0687
Email: smartcsa@law.co.za

From: ERM South Africa Project ENI Offshore Exploration [mailto:eni.exploration.eia@erm.com]
Sent: Tuesday, 07 November 2017 5:15 PM
To: Lindsey Bungartz
Subject: RE: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER2356, OFFSHORE OF THE EAST COAST OF SA

Dear Stakeholders

This letter serves to inform you that the scope of Eni and Sasol's exploration drilling project in ER236 is being reconsidered and it will be necessary to amend the current Draft Scoping Report. As such, based on the current NEMA EIA regulations and associated timelines, Eni have decided to re-release the Draft Scoping Report and re-submit the application form in early 2018. **The public meetings scheduled for the 13th and 14th November in Richards Bay and Durban will therefore be postponed until January/February 2018** and a revised Draft Scoping Report will be released to the public and advertised prior to the meetings. It will be ensured that stakeholders are given the optimal time allowed for by legislation to comment and participate in the process.

Please note that all comments submitted during the initial notification period will still be included in the Comments and Responses Report. Once the revised scope is made available, comments already submitted may be also revised; withdrawn or replaced entirely. All stakeholders who have registered will remain on the stakeholder database.

We apologise for any potential inconvenience caused. We look forward to engaging with you further during 2018.

Yours sincerely

Lindsey

Lindsey Bungartz
Senior Consultant

ERM Southern Africa (Pty) Ltd

2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa

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W www.erm.com



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Charlene Jefferies

From: Fiona McCarthy <FionaM@starliteaviation.com>
Sent: 11 November 2017 08:53 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Exploration drilling programme in Block ER 236 (12/3/236)

Follow Up Flag: Follow up
Flag Status: Flagged

Good day Charlene,
Please could you provide me with a draft scoping report for the above project. I understand that the public meeting has been moved to January 2018 but would like to read up on the project prior to this meeting.
Many thanks.

**Kind Regards,
Fiona McCarthy
Director**

Starlite Aviation Operations (Pty) Ltd

Email : fionam@starliteaviation.com Cell : +27 (0) 82 552 3813

Tel : +27 (0) 31 571 6600 Fax : +27 (0) 31 571 6610

Postal : P.O. Box 201322 Durban North 4016 South Africa

Address : Hangar 123 Virginia Airport Durban North 4016

www.starliteaviation.com



 Please consider the environment before printing this email

“This message and any attachment(s) are confidential and may be privileged or otherwise protected from disclosure”

Charlene Jefferies

From: Matthew Hemming <mgh2903@yahoo.com>
Sent: 10 November 2017 01:49 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: eni South Africa Offshore Exploration EIA

Hi

Please register me as an I&AP. I am a resident of KZN.

Regards

Matthew Hemming

Charlene Jefferies

From: Samuel Chademana <samuel@groundwork.org.za>
Sent: 30 October 2017 03:12 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: RE: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER2356, OFFSHORE OF THE EAST COAST OF SA

Hi Lindsey,

Thank you very much for following up on this; I do confirm receipt

Kindest Regards
Samuel Chademana Pr.Sci.Nat
Climate and Energy Justice Campaign Manager
Groundwork
Tel: +27-33 3425662
Cell: +27729231942
E-mail: Samuel@Groundwork.org.za
Skype: Chadez1

www.groundwork.org.za

<https://www.facebook.com/groundWorkSA>

@groundWorkSA

“Only those who dare to fail greatly can ever achieve greatly.” — Robert F. Kennedy

From: ERM South Africa Project ENI Offshore Exploration [mailto:eni.exploration.eia@erm.com]
Sent: Monday, October 30, 2017 3:04 PM
To: samuel@groundwork.org.za
Subject: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER2356, OFFSHORE OF THE EAST COAST OF SA

Hi Samuel

Thank you for letting me know that you have not received notification of the release of the Draft Scoping Report. Please be assured that you are on our stakeholder database. I have included the notification email sent out on Thursday below. Please let me know if you receive this email.

Warm regards
Lindsey

From: ERM South Africa Project ENI Offshore Exploration
Sent: Thursday, October 26, 2017 9:18 AM
Subject: Notification of Draft Scoping Report: EIA for Exploration Drilling within Offshore Block ER236, KZN, South Africa

Dear Stakeholder

RE: Environmental Impact Assessment for Exploration Drilling within Block ER236, off the East Coast of South Africa

Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) hold an Exploration Right 12/3/236 (ER 236) off the East Coast of South Africa. Eni and Sasol are considering the possibility of conducting an exploration drilling programme in Block ER 236 to assess the commercial viability of the hydrocarbon reservoir for future development. The Project requires Environmental Authorisation (EA) from the National Department of Mineral Resources (DMR) under the National Environmental Management Act (NEMA) (Act No. 107 of 1998), as amended, through an Environmental Impact Assessment (EIA) process.

Notice is hereby given that the Draft Scoping Report is available for comment. The comment period will run for a period of 30 calendar days from **26 October 2017 to 24 November 2017.**

The Report is available on the Project website: www.erm.com/eni-exploration-eia or on request from ERM and at the following public locations:

- Durban Central Lending Public Library
- Richards Bay Library
- ERM offices, Suite S005, 17 The Boulevard, Westway Office Park, Westville

A Zulu or Afrikaans copy of the executive summary can be made available on request from ERM.

Stakeholders are invited to attend a public meeting where ERM will present more information about the project and the EIA. The public will be given an opportunity to raise issues and pose questions to the Project team.

Details of the public meeting are as follows:

Date: 13 November 2017

Venue: Premier Hotel The Richards, 3 Hibberd Dr, Meer en See, Richards Bay

Time: 17:30, the project team will be available at the venue from 16:00

Date: 14 November 2017

Venue: Gooderson Tropicana Hotel, 85 OR Tambo Parade, South Beach, Durban

Time: 17:30, the project team will be available at the venue from 16:00

You are invited to submit your comments on the Draft Scoping Report to ERM:

Email: eni.offshore.eia@erm.com

Post: Postnet Suite 90, Private Bag X12, Tokai, 7966

Tel: 021 681 5400

Website: www.erm.com/eni-exploration-eia

Your comments, and our response, will be incorporated into the Final Scoping Report to be submitted to DMR for consideration.

Please remember that your comments must reach ERM on or before 24 November 2017.

Thank you for your participation in this process.

Your sincerely

Lindsey Bungartz

Senior Consultant

ERM Southern Africa (Pty) Ltd

2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa

T +27 21 681 5400 | **F** +27 21 686 0736 |

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Charlene Jefferies

From: Khalid Mather <khalidmather@gmail.com>
Sent: 30 October 2017 04:30 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Interested and Affected Party Registration - Khalid Mather
Attachments: BID_Eni_Exploration_September2017.docx

Hi Charlene, I hope this message finds you well.

Please find attached my registration form to oppose the exploration drilling off the coast of Richards Bay .

Kind Regards

Khalid Mather

Charlene Jefferies

From: Jennifer Olbers <olbersj@kznwildlife.com>
Sent: 30 October 2017 10:52 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: FW: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER2356, OFFSHORE OF THE EAST COAST OF SA

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms Jefferies,
Please note that my details have been captured incorrectly in Annexb1 and Annexb4.
Please see signature below and update your records/documentation.
Thank you.
Regards,
Jennifer

*Jennifer Olbers, PhD
Marine Ecologist
Ezemvelo KZN Wildlife, Scientific Services
Tel: +2731 312 2769 | Cell: +2784 406 5907
Postal Address: Private Bag X3, Congella, Durban, 4001, KZN, South Africa
Email: Jennifer.olbers@kznwildlife.com
Pr.Nat.Sci. #400405/14
https://www.researchgate.net/profile/Jennifer_Olbers*

From: ERM South Africa Project ENI Offshore Exploration [mailto:eni.exploration.eia@erm.com]
Sent: 18 September 2017 08:39 AM
To: Jennifer Olbers
Subject: RE: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER2356, OFFSHORE OF THE EAST COAST OF SA

Good Morning Jennifer

Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.

ERM
2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa
T +27 21 681 5400 | **F** +27 21 686 0736 | **M** +27 82 532 7231
E charlene.jefferies@erm.com | **W** www.erm.com



ERM *The business of sustainability*

From: Jennifer Olbers [mailto:olbersj@kznwildlife.com]
Sent: Friday, September 15, 2017 3:00 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: EIA FOR EXPLORATION DRILLING WITHIN BLOCK ER2356, OFFSHORE OF THE EAST COAST OF SA

Dear Ms Jefferies,
Please may I register as an I&AF for the above project.
Thank you.
Regards,
Jennifer

Dr Jennifer Olbers
Marine Ecologist
Ezemvelo KZN Wildlife, Scientific Services
Tel: +2731 312 2769 | Cell: +2784 406 5907
Postal Address: Private Bag X3, Congella, Durban, 4001, KZN, South Africa
Email: Jennifer.olbers@kznwildlife.com
Pr.Nat.Sci. #400405/14
https://www.researchgate.net/profile/Jennifer_Olbers

Charlene Jefferies

From: Ndoda Biyela <ndoda.biyela@gmail.com>
Sent: 27 October 2017 10:50 AM
To: ERM South Africa Project ENI Offshore Exploration
Cc: Biyela Ndoda
Subject: Your reference 0414229 EIA drilling block ER 236 off the east coast of SA

Dear Charlene

Please email me the Draft Scoping Report as I would like to consider it and make my comments.

I am interested in economic participation on the project.

Regards
Ndoda Biyela
MD Ukhaba Investment Pry Ltd
083 447 9440

Charlene Jefferies

From: Warren Hale <warrendavidhale123@gmail.com>
Sent: 27 October 2017 12:32 AM
To: ERM South Africa Project ENI Offshore Exploration
Subject: EIA for Exploration Drilling within Block ER236, East Coast SA

Hi Ms Jefferies,

Please register me as an I&AP for the abovementioned EIA. Please ensure that I am kept up to date with this EIA process.

Thank you and kind regards,

Warren Hale
(Mobile: 084 831 8225)

Charlene Jefferies

From: Ndoda Biyela <ndoda.biyela@gmail.com>
Sent: 27 October 2017 10:50 AM
To: ERM South Africa Project ENI Offshore Exploration
Cc: Biyela Ndoda
Subject: Your reference 0414229 EIA drilling block ER 236 off the east coast of SA

Dear Charlene

Please email me the Draft Scoping Report as I would like to consider it and make my comments.

I am interested in economic participation on the project.

Regards
Ndoda Biyela
MD Ukhaba Investment Pry Ltd
083 447 9440

Charlene Jefferies

From: Tamlyn Jolly <tamlyn@zob.co.za>
Sent: 26 October 2017 01:47 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: Exploratory drilling public meetings

Follow Up Flag: Follow up
Flag Status: Completed

Hi Lindsey

I've published the info about comments for the draft scoping report and have diarised the Richards Bay public meeting which I will cover. Please can you add me to your list of interested and affected parties, to ensure I get all correspondence relating to this?

Thanks,

Tamlyn

--



Tamlyn Jolly
SENIOR JOURNALIST

✉ : tamlyn@zob.co.za
☎ : 035 799 0500

🌐 : www.zululandobserver.co.za
🐦 : @ZOPublications
📘 : Zululand Observer Publications
**News & Communication
Leaders in Zululand**



Charlene Jefferies

From: Paul Phelan <mwnggruma@mweb.co.za>
Sent: 26 October 2017 01:15 PM
To: ERM South Africa Project ENI Offshore Exploration
Subject: contact

Please reregister me as an Interested and Affected Party ,
Regards , Paul Phelan 0824110210

Charlene Jefferies

From: Clive Reid <cliver@synergywwlcpt.co.za>
Sent: 06 December 2017 02:55 PM
To: ERM South Africa Project ENI Offshore Exploration
Cc: Jason
Subject: East Coast of RSA O&G
Attachments: SKMBT_28317120614480.pdf

Hi Charlene

Please see our Registration and Comment Sheet attached

Kind regards
Clive

Clive St John Reid

Mobile: 0829015945

Skype Address: [clive.reid.office](skype:clive.reid.office)

www.synergyworldwidelogistics.co.za

Durban

107 Escom Road, New Germany, KZN, 3610 Tel: +27 (0)31 705 7909

Johannesburg

7 Covora Rd, Jet Park

Boksburg, 1459

Tel: +27 (0)11 397 1180

Cape Town

4 Foregate Square, Harbour Road, WC, 8001 Tel: +27 (0)21 425 6664



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Kindly refer to our website for further details; a copy is available upon request.

E. & O.E

Please consider your environmental responsibility before printing this e-mail

Your ref:
Contact: **Sharin Govender**

Our file ref:
In response to DMS No: **1248392**
Date: **22 December 2017**

Environmental Resources Management Southern Africa (Pty) Ltd
Postnet Suite 90
Private Bag X12
TOKAI
7966

Attention: Ms Claire Alborough
Email: Claire.alborough@erm.com

Dear Madam

**COMMENTS ON THE DRAFT SCOPING REPORT FOR EXPLORATION DRILLING
WITHIN BLOCK ER236, OFF THE COAST OF RICHARDS BAY, KWAZULU NATAL**

The City of uMhlathuze has reviewed the above report in respect of the proposed exploration drilling. We submit the following comments for due consideration:

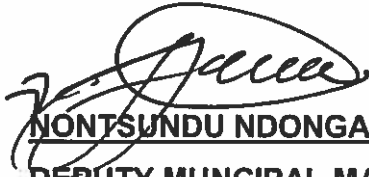
The Municipality notes the issues identified in terms of Marine and Socio Economic Impacts, and shall reserve further comment until the relevant specialist studies have been conducted.

The strategic nature of the project in terms of Government's Phakisa Programme within the Ocean Economy warrants alignment with strategic planning initiatives driven at a regional and local scale. To this end, the Municipality requests a meeting with project proponents to understand the initiative at a macro scale.



To facilitate such engagement with the Municipality, the project applicant is hereby requested to contact Ms. Sharin Govender of the office of the Deputy Municipal Manager: City Development on Tel.: 035 9075174; Mobile: 0824504187; or email: Sharin.Govender@umhlathuze.gov.za.

Yours faithfully



NONTSUNDU NDONGA Pr Pln A/080/2008

DEPUTY MUNICIPAL MANAGER: CITY DEVELOPMENT

DMS 1248396

Cc :

The Managing Director

ENI South Africa BV

1st Floor Icon Building c/o Cube Ws

Cnr Lower Long Street and Hans Strijdom Road

Foreshore

CAPE TOWN

8000

ATTENTION : MR ALESSANDRO GELMETTI

Tel 021 4121582



ALL CORRESPONDENCE MUST BE ADDRESSED TO THE MUNICIPAL MANAGER

Annex C

Comments and Responses Report

Name	Surname	Organisation	Comment	Comment Received	Response	Response Sent
Pre-application Phase						
Janet	Solomon	Vanishing Present Productions	Please may I register as an interested and affected party?	16.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	18.09.2017
Judy	Bell	Frackfreesa	Please would you notify all the IAP's where this block is located so that they know if this is a local issue for them or not. Please note this in your comments register in the documentation submitted to the authorities	15.09.2017	ERM distributed an initial notification email to all stakeholders on our I&AP Database on Friday 15 September. A Background Information Document was attached to the email which provides further information about the Project and includes a map on page 2. The map shows where Eni's exploration block (ER236) is located, as well as the area of interest for the exploration drilling. As such, people who have received the initial notification should be able to see where the Project is located and decide whether or not they wish to participate. The BID is also available to the Project website: http://www.erm.com/eni-exploration-eia Please let me know if this addresses your query to your satisfaction.	18.09.2017
Judy	Bell	Frackfreesa	No it doesn't. They have to wade through a 2 mB document, which many do not open unless they see in the email (subject line preferably) that it is something in which they are interested or will be affected by it. People without airtime will not be able to open such a big attachment. It is not conducive to effective participation, which is a principle of NEMA.	18.09.2017	Thank you for raising your concerns. We are currently in the early phase of the EIA (pre-application and pre-Scoping) and as such there will be further communication to stakeholders on the database from the EIA team during the Scoping and EIA phases. In terms of ensuring effective participation we have, in addition to sending out the Background Information Document (BID) to our stakeholder database, placed newspaper adverts in four papers and we will be placing hard copies of the BID in the main Richards Bay and Durban libraries. Should you wish to receive a hard copy of the BID, please do let us know and we would be happy to send you one. Please do let us know should you have any additional queries.	18.09.2017
Jennifer	Olbers	Wildlife and Environment Society of South Africa	Please may I register as an interested and affected party?	15.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	18.09.2017
Andre	Hector	Hacky Fishing (Pty) Ltd	Please register Hacky Fishing (Pty) Ltd as an interested and affected party. They hold fishing rights which are utilised in the proposed area.	18.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	
Sandy	Camminga	Richards Bay Clean Air Association (RBCAA)	The email below which was forwarded to me by a colleague has reference. Kindly register the Richards Bay Clean Air Association (RBCAA) as an Interested and Affected Party.	17.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	18.09.2017
Sean	O'Donoghue	Personal	Please add me as an I&AP.	18.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	18.09.2017
Janet	Cuthbertson	Suni Ridge	Phone call response to advert. Registered as an I&AP		Thank you for getting in touch with ERM re the EIA for exploration drilling within Block ER2356, you have been added to our stakeholder database and will be kept informed throughout the EIA process. Attached please find a copy of the Background Information Document, which provides further information about the Project and associated EIA. As discussed you are welcome to pass this email on to your contacts, and they can responded directly to us if they wish to register as an I&AP. Please do not hesitate to contact me if you have any further questions.	18.09.2017
Percy	Langa	Richards Bay Industrial Development Zone	Please register the RBIDZ as an I&AP.	18.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	19.09.2017
Shanice	Gomes	South Durban Community Environmental Alliance	Please could you register me as an IAP	18.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	19.09.2017
Madimetja	Lephoto	Alectrona Consulting	No Objection to the Project	18.09.2017		19.09.2017
Adrian	Nel	University of KZN	Please could you register me as an IAP	18.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	19.09.2017
Petrus	Viviers		Please could you register me as an IAP	19.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	19.09.2017
Chadley	Joseph	South Durban Community Environmental Alliance	Please could you register me as an IAP	19.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	19.09.2017
Sabine	Wintner	Kwazulu-Natal Sharks Board	Please register me as an I&AP for the Oil Exploration Drilling within Offshore Block ER236, South Africa.	19.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	19.09.2017
Duminsani	Myeni		Duminsanie would like to register for a proposed project. He is staying in Richards bay and his participation is two fold 1) for education and as a local citizen	19.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	19.09.2017

Suvana	Alakram	Resident	This email is in response to the invitation to be registered as an I&AP for Exploration Drilling off the East coast of South Africa as advertised in the Zululand Observer. I am a resident of Richards Bay and being an environmentalist would be very interested to be part of the public participation process. I have an inherent love for the environment and would like to keep abreast on environmental issues in my area. I do have a qualification in environmental management and am currently unemployed. I would also like to get more exposure to the public participation process. Looking forward to hearing from you.	20.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	21.09.2017
Kevin	Cole	East London Museum	Attached the registration and comment sheet – EIA FOR THE EXPLORATION DRILLING WITHIN BLOCKS ER236, OFFSHORE OF THE EAST COAST, SOUTH AFRICA	20.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	21.09.2017
Lourens	Britz		Telephonic registration. Lourens would like to know when and where the first Public Participation meeting will be held		Thank you for registering as an I&AP for the above mentioned project. At this stage we anticipate that a public meeting will be held in November, following the release of the draft Scoping Report. As an I&AP, you will receive notification of the meeting.	
Riette	Bennett	Advantage Tours	Can I please kindly register as an affected party as I am a Boat Based Whale Watching legal Government permit holder from Department of Environmental Affairs Oceans and Coast.	21.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	
Debbie	Smith	Stokkiesdraai	Please find attached my registration form. It would appreciate, to be kept informed about your drilling venture on the East Coast.	23.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	26.09.2017
Alex and Ann	Paretas-Brosens	Kwalucia Enterprises (Pty)Ltd	Register as AP	23.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	26.09.2017
Adel	Scheidle	Avalone Guesthouse	Drilling not beneficial for marine which directly influences hospitality industry in St.Lucia, I am against the proposed drilling	24.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process. The impacts associated with drilling will be explored further in the EIA, and where adverse impacts are identified, mitigation measures will be developed to manage these impacts.	26.09.2017
Sean	Scheidle	Avalone Guesthouse	Against drilling. Beautiful coastline needs to be preserved for future generations	24.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process. The impacts associated with drilling will be explored further in the EIA, and where adverse impacts are identified, mitigation measures will be developed to manage these impacts.	26.09.2017
Elsa	Karam		Property Owner, I Mrs H E Karam want to register as an interested and affected party against exploitation of east coast of S A Yours H E Karam Property owner St Lucia KZN	24.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	26.09.2017
John	Field	Private	I am a resident of St.Lucia Estuary (1 Shadlaan), I will attach an article from a new scientist that describes our concern.	25.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process. We acknowledge the receipt of the article which speaks to your concerns.	
Barend	Vorster	Fishermans Restaurant & Wave Dancer Charters	Register as IAP	25.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	26.09.2017
Caroline	Fox	Ezemvelo KZN Wildlife	Please see attached my registration form to register as an I&AP for the proposed offshore drilling.	25.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	26.09.2017
Simphiwe	Mbonambi	Mbanambi Traditional Authority	Please could you register me as an IAP	26.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	27.09.2017
Norma	Patrick	POD and Icebwatch SA	Please could you register me as an IAP	26.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	27.09.2017
Eghard	Greyling	J.S Greyling Trust	Please could you register me as an IAP	26.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	27.09.2017
Siboniso	Mbense	iSimangaliso Wetland Park Authority	The iSimangaliso Wetland Park is a UNESCO World Heritage Site, protected under international conventions and South African law. Its management authority the iSimangaliso Wetland Park Authority is charged with custody of this protected area which includes a large marine component. The applicable South African laws include among others the World Heritage Convention Act and the National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003) (South African domestic law) and associated Regulations. As the authority mandated to protect and develop the iSimangaliso Wetland Park, a proclaimed World Heritage Site[1], the iSimangaliso is required by law[2] to ensure that development and activities happening within and adjacent to the Park do not negatively affect the Park's World Heritage values.	26.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process. The impacts associated with drilling will be explored further in the EIA, and where adverse impacts are identified, mitigation measures will be developed to manage these impacts. As an I&AP you will have the opportunity to review and comment on the findings of the EIA, and raise concerns about the project.	27.09.2017

Deon	Steyn	Elephant Lake Group	Register as IAP	27.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	27.09.2017
Norma	Hall		keep me informed of what plans are being made off the East Coast of South Africa/St. Lucia as I highly object to this kind of activity which destroys our natural shoreline, fishing and Tourism in general in the area.	27.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	28.09.2017
Jon	Marshall	Coastwatch KZN	Please include following email address when responding chris.wrightza@gmail.com; kendyllr@gmail.com; karin@gcs-sa.biz	28.09.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process, the email addresses provided have been added to our stakeholder database.	28.09.2017
Bonisile	Mthembu	Department of Education	Please could you register me as an IAP	02.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	02.10.2017
Donald	Pittindrigh	Indus Automation & Systems Intergration	Interested Party Application	05.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	05.10.2017
McDonald	Mutsvangwa		Registration as an I&AP for Richards bay exploration project	05.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	06.10.2017
John	Cawood		I would like to register as an interested and affected party please	05.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	06.10.2017
Sharin	Govender	Department:City Development	The City of uMhlatuze hereby registers its interest in the attached application. Please forward us the necessary reports as and when they are available so that we duly inform the EIA process. Please note that the information must be submitted in soft copy format. In doing so, kindly cc further correspondence to our Central Registry: creg@umhlatuze.gov.za	09.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process, the email addresses provided have been added to our stakeholder database. We will send soft copy reports to your office as they become available.	09.10.2017
Tamlyn	Jolly	Zululand Observer	The document doesn't state when the EIA process will begin. If it hasn't already begun, do you have a time frame for the process to begin?	03.10.2017	We are currently in the pre-application phase of the EIA, which means that we have notified stakeholders of the commencement of an EIA, but we have not yet submitted an EIA application form to the competent authority (which will be the Department of Mineral Resources (through the Petroleum Agency South Africa – PASA) in this case). We intend to submit an application to the DMR and release a <u>draft Scoping Report in the next few months</u> .	03.10.2017
			Is there a deadline by which people must register as interested and affected parties?	03.10.2017	Stakeholders are welcome to register as interested as affected parties at any point of the EIA process, there is no deadline. However, the earlier they register the <u>better, in this way they can be part of the process from the beginning</u> .	03.10.2017
Niall	Kramer	SAOGA	Please register me as an Interested party	09.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	09.10.2017
Desmond	D'Sa	South Durban Community Environmental Alliance (SDCEA)	Please see our attached letter of our concerns and advice on your company's background document to explore for oil and gas off our coastline. (Concern letter attached) please include the following email address in reponse chadley@sdceango.co.za; samuel@groundwok.org.za; roc@tiscali.co.za, bobby@groundwork.org.za; adrian@adrianpole.co.za The drilling activities proposed, can be characterised as deep water will be near Marine Protected Areas which are detrimental to our ocean ecosystem. Deep water drilling is amongst the most hazardous and technically challenging of all drilling operations and presents unusually high risk of upset relative to onshore and/or shallow water drilling. This is a direct consequence of extreme depth and pressure accentuated by local factors such as <u>current and weather</u> . The incidents of Piper Alpha in the North Sea (1988), the Texas City, Texas refinery explosion (2005), and the Macondo deepwater Gulf of Mexico blowout and spill in 2010 have made it abundantly clear that personnel safety and process safety cannot be treated interchangeably. In our view the inhospitable character of our offshore sea state, together with certainty of increasing cyclonic disturbances associated with global warming present's very serious hazards particularly as the offshore location is in known track of departing cyclonic systems originating in the Mozambique Channel. The distance offshore and the extreme depth poses technical considerations for our country. At this point is is highly doubtful whether we have any capability to launch a sophisticated response capability as is possible in similar operations in North Sea or Gulf of Mexico where even there the incidents referred to above occurred. We also do not believe that there exists any capability at local South African level to cap a blowout or to launch an offshore rescue as the distance is simply beyond what the NSRI or maritime response is capable of. We ask therefore who exactly will be providing such services?	09.10.2017	Noted and additional email addresses have been included in the stakeholder database. The drilling area of interest is located almost 100 km from the closest MPA, iSimangaliso. Potential impacts related to the proposed project will be assessed in the EIA as per Chapter 7 of the Scoping Report. A specialist oil spill study will be undertaken in order to understand the fate and transport of unplanned hypothetical oil spills. A specialist oil spill modelling study will be undertaken in order to understand the fate and transport of unplanned hypothetical oil spills. Eni will develop an Oil Spill Contingency Plan prior to drilling commencement. In addition Eni will prepare a detailed Emergency Response Plan and Strategy prior to drilling activities. The contents of this plan will be considered in the EIA. The capacity in South Africa for oil spill response will also be looked at in the EIA. Eni is a Participant Member of Oil Spill Response Limited (OSRL), an international industry-funded cooperative which exists to respond to oil spills wherever in the world they may occur. OSRL have a stacking cap currently located and stored in Saldanha Bay, South Africa.	Initial acknowledgment - 10.10.2017

The drill site is located off the East coast of South Africa and squarely within the North/South Agulhas current. This means that in the event of an uncontrolled and unmitigated release of hydrocarbons that the potential for such hydrocarbons to pollute our entire coastline becomes very real. The impact will certainly not be limited to localised KZN area. The offsite consequences will therefore be determined by severity of the harm so caused together with current strength and direction. It is imperative therefore that appropriate and detailed sea current and weather modelling data be obtained and assessed as a minimum precaution and that this data is used to determine end consequence in event of spill or blow out prior to any grant of approval. A formal evaluation of the risk to the environment would be grossly defective without actual real time data on sea conditions generally relevant to the exploration zone and specific to the water column where the drilling is to take place. We do not believe this information exists at present time and we therefore request detail on how it will be obtained in order that considered decisions are made in accordance with principles espoused by NEMA, in particular the precautionary principle.

With the base in Richards Bay, and the need to charter supplies from base to the drilling rig, supplies such as the diesel and drilling fluid could spill into the ocean causing great harm to the ecosystem. We therefore would wish to enquire that given the fact that the South African coastline is regarded by mariners as notoriously dangerous and unpredictable how safe ship to rig transfers of fuels ,consumables and personnel will take place.

It is noted that the drill site is a significant distance offshore which by implication makes timeous intervention in event of mishap very problematic. The form of mishap such as in a spill or blowout presents not only in the form of obvious environmental outcomes but also in directly negative consequences to workers health and safety in form of fire with death by explosion and burns the leading cause of documented death according to the Oil and Gas Producers Association (OGP). How will such incidents be managed?

Again, noting the distance from shore we wish to enquire how workers would be evacuated from such a rig in the event of accident necessitating such action. Specifically it is our view that offshore airborne rescue capability and assistance would not be possible given the limitation and restriction placed on aircraft operating offshore our waters. This technical safety detail must be provided.

It is common cause that a drilling rig will create negative externalities related to the "normal operation" of the rig itself. Such polluting activities that have not, and must, be defined relate to the quantity and toxicity of drilling muds, brine wastes, deck runoff water and flow line and pipeline leaks. Drilling muds and produced water are disposed of daily by offshore rigs. Offshore rigs also dump tons of drilling fluid, metal cuttings, including toxic metals, such as lead chromium and mercury, as well as carcinogens, such as benzene, into the ocean. The quantity of these substances and resultant impact on neighboring environment must be assessed.

The SDCEA represents close to twelve thousand subsistence fishermen whose livelihoods depend on the ocean. For most of them, fishing is their only means of income. There will bea depletion in fish stocks in the area which will cause a devastating impact in the subsistence fisher folk's livelihood.

With the majority of the East coast of South Africa (Richards Bay to Mossel Bay) earmarked for seismic testing by PGS, the coast might be under tremendous stress if both these proposals are accepted. There is therefore a distinct potential for compounding of environmental insults from a multiplicity of sources. This is a concern for all that depend on the ocean as a means of living. The area under consideration is also a known deep water fishing area with vessels operating out of Richards Bay. The concerns and interests of this user group must be fully examined. In addition the downstream and seashore impacts of spills on the order of the Deep Water horizon incident can have huge untold impacts of the regional and national economy. Included here are the subsistence fisherfolks, the small business who use the ocean, the hotel industry, the tourism industry of South Africa could be threatened.

Public participation is one of the most important aspects of the environmental authorisation process. It is considered so important that it is the only requirement for which exemption cannot be given. This is because people have a right to be informed about potential decisions that may affect them and to be afforded an opportunity to influence those decisions. Effective public participation also facilitates informed decision making by the competent authority and may result in better decisions as the views of all parties are considered.

A specialist oil spill modelling study will be undertaken in order to understand the fate and transport of unplanned hypothetical oil spills. Analysis will be performed over a historical dataset of metocean data. From the beginning of the activity daily forecast data of marine currents and winds will be available. The Terms of Reference for the Oil Spill Modelling Study is provided in Chapter 7 of the Draft Scoping Report.

The EIA and associated spill modelling will investigate and simulate this possible scenario, and also identify any measures to reduce the risks of spills and to mitigate any potential impacts which will be provided in the Environmental Management Programme in the EIA.

Eni will prepare a detailed Emergency Response Strategy and Plan prior to drilling activities. The contents of this plan will be considered in the EIA.

Eni will prepare a detailed Emergency Response Strategy and Plan prior to drilling activities. In addition to helicopters, a stand-by vessel will be always be in the vicinity of the drillship. The contents of this plan will be considered in the EIA.

Chapter 7 of the Draft Scoping Report identifies the impacts to be assessed in the EIA phase. This includes seawater and sediment quality degradation /contamination due to operational discharges and cuttings discharge. A Waste Management Plan will be prepared prior to drilling activities.

The potential impact of the project on fishing will be explored in EIA in an independent specialist study to be undertaken by David Japp and Sarah Wilkinson of CapMarine.

The timing of the PGS survey and these proposed drilling activities will be decided on by PASA when it assesses the different exploration activities. The potential impact of the project on fishing will be explored in EIA in an independent specialist study to be undertaken by David Japp and Sarah Wilkinson of CapMarine.

This is noted. Please see our responses regarding the public consultation process below.

Consultants need to make a more valued impact during an EIA project process, such as advertising an EIA notice in the local newspaper, making sure that all Zulu speaking individuals are also catered for. Notification must also be given through local community and major radio stations and proof must be provided that the consultants have done so. The experts and scientists who conducted the studies must be at the meetings to present their own work, the consultant should not be speaking on their behalf. Notification must be given in all communities from the border of Mozambique up until Mossel Bay. And public participation meetings must be held in all communities from Kosi Bay to Mossel Bay. The consultants must ensure that every local councillor and interested and affected party is informed and the information is easily available to them.

Therefore, the public participation process needs to be conducted thoroughly, with notices going into all local newspaper publications, Zulu, Afrikaans and English. Since the proposed drilling will affect all those in the coastal communities, public meetings must be held in venues on the coast, knock and drop pamphlets delivered to local fishing shops, fishing clubs, surfing clubs, BnB's and small businesses who eke a livelihood from the ocean. An independent facilitator must be appointed for the public meetings. And an independent scientific study by independent scientist not attached to the EAP must be done on the potential impacts the project will have.

Effective communication is key in the EIA Process. It ensures all registered interested and affected parties are properly notified of public hearings, all information concerning the exploration project is distributed to all parties and all parties are kept in the loop of all the different process within the EIA. Therefore it is important that information is communicated and circulated to all parties timely and efficiently. This will ensure all parties have enough time to comment and send through their concerns and issues regarding the exploration project.

We need independent research done by appointed independent scientist not linked to the EAP on the impacts of this project in regard to people's livelihoods, quality of life and a cost base analysis done on how fishermen's livelihoods will be directly impacted. The tourism industry will suffer severely with the pollution of beaches and unsightly infrastructure from offshore oil rigs erected in our oceans. Must include the loss of food security, employment, and local businesses and how this will impact on their aquaculture and sustainability.

ERM are of the view that public participation is a vital part of the EIA process. Thank you for your suggestions around engagement, we would like to note the following:

The project was advertised in four newspapers; The Mercury and Isolezwe (in Zulu) with distribution around Durban, and The Zululand Observer and Ilanga Newspaper (in Zulu), with distribution around Richards Bay. ERM will continue to advertise the availability of reports and public meetings in these four papers throughout the EIA process.

ERM will hold public meetings during the EIA phase to disclose the findings of the EIA. Public participation activities have been focused around Durban and Richards Bay at this stage as it is where the potential impacts may be felt, and where many of our stakeholders are based. While Block ER236 extends along a large portion of the KZN coastline, the area of interest for drilling is an area within the Block roughly in line with Richards Bay; the onshore logistics base will be located in either Richards Bay or Durban. Meetings for the Scoping Phase will be held in Richards Bay and Durban, should it be determined that the public participation programme needs to be expanded, based on the outcomes of the impact assessment, this will be considered by the EIA team.

ERM has distributed a notification email and Background Information Document to authorities within local municipalities along the KNZ coast. We will continue to keep them informed as the EIA progresses.

ERM has appointed an independent facilitator to be present at the public meetings. We are considering the attendance of certain specialists at the EIA meetings to explain their findings and answer questions.

ERM has appointed specialists to undertake the following studies:

- Marine Fauna – an assessment of the proposed projects' impact to marine fauna (eg whales, turtles, seabirds etc);
- Fishing – an assessment of the proposed projects' impact on fishing activities in the area.
- Oil spill– modelling to identify the predicted dispersion of oil in an unplanned event.
- Dispersion modelling – a dispersion simulation of drill cuttings during drilling activities.

As per the NEMA EIA Regulations, both the EAP and specialists are required to be independent and sign declarations stating as such. Both the Marine Fauna and Fisheries assessments will be undertaken by subcontractors (Pisces and CapMarine).

A peer review of the oil spill modelling study will be undertaken by an independent specialist.

ERM are committed to effective and timeous communication with stakeholders. Comment periods on draft reports will be 30 days as per the requirements of NEMA and the EIA Regulations.

ERM has not appointed a social specialist at this stage. The project will be located at least 60 km from the shoreline and will not be visible from the shore. It is anticipated that it would take up to 71 days to drill one well. Given the location and temporary nature of the project, it is not anticipated that the project will have an adverse effect on local tourism and recreational operators along the coast. The potential impact of the project on local fisheries will be explored through a fisheries study as part of the EIA.

			<p>We require a copy of the emergency plan of how they will respond to possible disasters such as oil spills and rig explosions. The plan must be detailed as to what communities in danger must do in an event of disaster, where they must go to and what numbers they need to call in such an event. Is there a designated task team in case of emergencies such as spillages and explosions? Do they have the necessary equipment to handle these situations?</p> <p>The health of people who depend on fish for sustenance and for those who only eat a fish based diet will be affected as it is known and experienced that the contamination will affect the fish we eat through oil leakages and toxic waste dumping. The affected fish will carry hydrocarbons that is poisonous for human consumption.</p> <p>The South Durban Community Environmental Alliance (SDCEA) is a non-governmental Organisation with a coalition of 16 community and environmental organisations concerned with environmental justice and sustainable development in south Durban and eThekweni (the broader Durban municipal area). There are numerous concerns that we have risen regarding the Oil and Gas Exploration activities proposed for our coast. Therefore we request that all the information in the EIA process be couriered to our offices timely as it will give us sufficient time to provide comments in response. All information must be provided to interested and affected parties all along the entire Indian Ocean coastline.</p> <p>A case study around the Deep Water Horizon incident was presented in the letter received from SDCEA (refer to Annex B)</p> <p>Taking this disaster into consideration, this shows that even at an international level, anything could happen. What if the same events that took place in the Gulf of Mexico were to occur here, with the exploration rig just a near 62km's from the shore. This is why we have cause for concern for this proposed project.</p>		<p>A specialist oil spill modelling study will be undertaken in order to understand the fate and transport of unplanned hypothetical oil spills. Based on this Eni will prepare an Emergency Preparedness and Response Plan and Oil Spill Contingency Plan (OSCP) to address appropriate responses to accidental releases of hydrocarbons associated with the proposed offshore drilling. Eni will have the necessary equipment for emergency and oil spill responses both at the drilling site and logistics base. Eni is also Participant Member with OSRL, a global provider for oil spill response resources and services. The OSCP will be addressed in the EIA report.</p> <p>The potential impact of the project on fishing will be explored in the EIA in an independent specialist study to be undertaken by David Japp and Sarah Wilkinson of CapMarine. The potential impact of the project on marine fauna will be assessed in the EIA in an independent specialist study to be undertaken by Andrea Pulfrich of Pices Environmental Services.</p> <p>ERM will deliver electronic copies (on a CD) of draft reports to SDCEA as they become available. During the EIA process Interested and Affected Parties as per our database (which will be continually updated during the process) will be notified of the availability of information.</p> <p>This concern is noted. As per the above responses a specialist oil spill modelling study will be undertaken in order to understand the fate and transport of unplanned hypothetical oil spills. Eni will develop an Oil Spill Contingency Plan prior to drilling commencement.</p>	
Imke	Summers		Please may you register me as an IAP on the EIA for Exploration Drilling within Block ER236, Offshore of the East Coast, South Africa	10.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	11.10.2017
Samuel	Chademana	Groundwork	We would like to register as an interested and affected party on this application, Kindly advise on how to proceed. Please see attached and we will be submitting comments shortly	11.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	11.10.2017
Jacquette	Adamson	Exigent Environmental	Register as I&AP	11.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	13.10.2017
Dee	Fischer	Department of Environmental Affairs	Register as a stakeholder for the EIA for offshore exploration.	19.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	19.10.2017
2017 Scoping Phase						
Khalid	Mather	KZN Environmental Network	The proposed off-shore drilling at the already embattled coast of Richards Bay poses yet another risk to the well-being of the ecological integrity of the North Coast. Oil spillages and oil-slick sand are a common site across Richards Bay beaches, heavily impeding indigenous efforts to derive a living from the sea. The drilling poses an assortment of documented pollution risks including kinetic, atmospheric, noise and oil pollution. The proposed area is also within 50Km of an ecologically vulnerable zone identified by the National Biodiversity Assessment. I have personally confirmed this utilizing shape-file data from SANBI.	30.10.2017	Potential impacts related to both operational activities and unplanned events will be assessed in the EIA Report. This will include potential impacts relating to atmospheric and marine pollution and will include consideration of impacts to protected areas, sensitive species and habitats.	This Report
Fred	Kockott	Roving Reporters	Roving Reporters is following up on ENI Offshore Drilling Scoping Report for the exploration drilling programme on the KwaZulu-Natal coast (www.erm.com/eni-exploration-eia/) and will appreciate it if you could assist with these queries below. Please could Environmental Resources Management (ERM) advise whether it has received any formal objections to the proposed drilling programme so far, and if possible, provide an account of what the principle objections are.	06.11.2017	ERM has received a number of comments from stakeholders. All comments received in relation to the EIA for Exploration Drilling within Block ER2356 are captured in this Comments and Responses Report, which will be updated throughout the EIA process and made available to the public at various stages of the EIA process.	This Report

As I read it, if the environmental authorisation is granted as per the planned EIA schedule, Eni South Africa BV (Eni), and Sasol Africa Limited (Sasol) will be drilling for oil and gas reserves within a 1,840 km2 area stretching from Port Shepstone in the south to St Lucia in the north within nine to ten months from now.

Please advise whether the EIA approval process gives ERM sufficient time to properly assess:

1. the risk of oil/gas blows arising from offshore drilling operations

2. significant environmental impacts that the offshore drilling will cause, including:

2.1 SEA FLOOR DEGRADATION

2.2 SEDIMENT POLLUTION: generation of vast plumes of sediment arising from the "disposal of cuttings to the seafloor and overboard during drilling" which, as the scoping report states, will "disturb the marine habitats, benthic communities and marine fauna present in the area". ERM states that this issue will be assessed further in the EIR process, including "a discussion around the treatment and base fluid content of these muds and cuttings prior to disposal". Please explain what is meant by a discussion, and what, if any legal enforcement measures would be in place to prevent unnecessarily destructive environmental practices by the drilling operators.

2.3 EFFLUENT POLLUTION: High levels of pollution arising from wastewater and operational discharges from the drillship/s and other project vessels with possible lasting impact on fish life, marine mammals and turtles. The scoping report states that this impact will be assessed further in the EIR "including a discussion around the mitigation of this impact" by ensuring all vessel discharges are compliant with "MARPOL 73/78 Annex I, Annex V and Annex IV". Please could you explain in layman terms what this exactly means and in a way that the envisaged pollution impact will be fully understood by people living along this coast, including subsistence and commercial fishermen.

2.4 NOISE POLLUTION: Noise generated by drillship/s "could lead to disturbances to marine habitats and fauna, especially to marine mammals and fish". Please advise how the impact of underwater noise will be assessed and by whom in the further EIA process.

2.5 CLIMATE CHANGE: The scoping report states that "there are climate change implications from the burning of fossil fuels by the project vessels". For context, please provide our readers an idea of how much fossil is consumed in gas/oil explorations and whether Sasol and ENI are investing in developing cleaner fuels for the future.

2.6 MARINE PROTECTED AREAS: The scoping report states the Block ER236 overlaps with the proposed Tugela Banks, Protea Banks, Aliwal Shoal and iSimangaliso Wetland Park marine protected areas, but says there is "no overlap of the area of interest with proposed protection areas"? Please explain what "no overlap of the area of interest" means in this case.

The EIA process may be concluded within 12 to 15 months, however, the timeframe for the commencement of the project is dependent on a number of other factors, such as the availability of the drill ship.

To clarify, this EIA is for the drilling of exploration wells only, and another permitting process would need to be undertaken should it be determined that full-scale production is viable.

It should also be noted that although ER236 stretches from Port Shepstone in the south to St Lucia in the north, drilling will only be undertaken within the areas of interest as indicated in Figure 1.1 of the Scoping Report.

An oil spill modelling study has been commissioned as part of the EIA, which will look at the likely consequences of a spill arising from the project. The timeframe for an EIA is sufficient to allow such a study to be completed. In addition a peer review of the oil spill modelling study will be undertaken.

A drill cuttings dispersion modelling study has been commissioned as part of the EIA to determine the water column suspended sediment concentrations and the bottom accumulation of the drill cuttings (the "footprint") to assess potential impacts to aquatic and benthic organisms. Further information will be provided in the EIA with regards to the treatment and disposal of drill cuttings. All drilling operations will be undertaken in accordance with national and international regulations, standard and best practice.

Operational emissions from the drillship would be similar in scale to those from a similar size ocean-going vessel. The potential impacts related to the operational discharges will be discussed and assessed in the EIA.

The noise impact associated with drilling activities will be assessed by the ERM team with input from specialists as needed.

Further information on fuel consumption and related atmospheric emissions and climate change impacts will be discussed and assessed in the EIA. Operational emissions from the drillship would be similar in scale to those from a similar size ocean-going vessel.

Eni have indicated that they are currently developing cleaner fuels in its Green Refinery Project (please refer to Eni's website for further information).

The area of interest refers to the portion of Block ER2356 in which Eni has identified as desirable to drill exploration wells. While Block ER2356 extends from Port Shepstone to St Lucia, and intersects with the **proposed** Protea Banks MPA and the extension of the iSimangaliso MPA, the part of the Block where Eni proposes to drill exploration wells, does not infringe on these areas, as shown in Figure 5.19 of the Draft Scoping Report, January 2018.

It should be noted that sections of the original ER236 which overlapped with the existing iSimangaliso and Aliwal Shoal MPA's were relinquished during the Exploration Right renewal process in 2016.

2.7 COELACANTH POPULATIONS: The scoping report states that although the southern point of the area of interest overlaps with a portion of the Goodlad Canyon, it is "unlikely that coelacanths will be found here" as this canyon "differs significantly in morphology from those in northern KZN, where coelacanths have been reported". Please advise whether any marine scientist/s involved in recent coelacanth research can back this assertion. ERM also states that seismic data indicates that there are deep water canyons present in the centre of the area of interest. This appears to nullify the earlier comment about coelacanth populations not being affected. In addressing this question, please advise whether ERM, Eni or Sasol has commissioned any recent marine science research to map out the rich, biodiverse marine habitats within the area of interest. The comment that the "occurrence of deep water corals in Block ER236 and the area of interest are unknown" appears to indicate that no such research has been done.

2.8 IMPACT ON WHALES: The scoping report mentions that 36 species of cetaceans are likely to be found within Block ER236, including the Antarctic Blue whale is critically endangered, the Indo-Pacific humpback dolphin, fin whale and sei whale (endangered), the Ifafi-Kosi Bay subpopulation of the Indo-Pacific bottlenose dolphin, Sperm whale and Bryde's whale (vulnerable). It also states Block ER236 lies within the migratory route of Humpback and Southern Right whales but does not provide any specific detail on the impact that offshore drilling is likely have on these migrations and potential long-term impact on cetacean populations on the East Coast.

2.9
Further to above, please could ERM provide an account of the surveys took place - and over what period - to determine the presence of oil and gas reserves in Block ER236, and what the outcomes of these surveys were, including the estimated value of the gas/oil reserves that Sasol and ENI plan to tap into.

There have been no baseline studies of the canyons in the area of interest. However, the following publication:
Wiles, E., Green, A., Watkeys, M., Jokat, W. & Krockner, R., 2013. The evolution of the Tugela Canyon and submarine fan: A complex interaction between margin erosion and bottom current sweeping, southwest Indian Ocean, South Africa. Marine and Petroleum Geology 44: 60-70.
studied the morphology of the canyon and Andrea Pulfrich (marine specialist) has based her conclusion on this evidence. As stated in the report these Canyons therefore differ significantly in morphology from those in northern KwaZulu-Natal, where coelacanths have been reported. Firstly, the canyon heads lack the amphitheatre-shaped head morphology. Secondly, they are located at far greater depth than the Sodwana canyons and lack connectivity to the shelf, and finally, they show no significant tributary branches (Wiles et al. 2013). Although terraces are present and may provide shelter in the form of caves and overhangs, they occur at depths (>1,500 m) well beyond those at which coelacanths have been recorded to date.

ERM has added the following text to the Draft Scoping Report "Evidence of deep water canyons at depths (>1,500 m) were found during a seismic survey conducted in the northern area of interest." "Due to the depth of the canyon coelacanths are unlikely to be present."

In addition Eni can confirm that no drilling activity will occur in the Goodlad Canyon.

The potential impact of the project on marine mammals will be explored in the EIA in an independent specialist study to be undertaken by specialist Andrea Pulfrich of Pisces Environmental Services.

A multi-client 2D seismic survey was undertaken over the entire ER236 in 2013 and 2014 under an approved EMPr by PASA to identify the potential areas of interest. A further multi-client 3D seismic survey was undertaken in 2016 by a geophysical contractor (Schlumberger-Western Geco) under a specific Reconnaissance Permit granted by PASA, over a portion of the Durban basin which also include the central part of block ER236.
Eni and Sasol have decided to licence the data relevant to ER236 from the geophysical contractor to further clarify the northern area of interest.

			<p>Although this might not be relevant to the Offshore Drilling Scoping Report, Roving Reporters established last year seismic surveys for gas and oil on the KwaZulu-Natal coast extended into the whale migratory period last year. This earned the wrath of leading marine scientists who accused the petroleum industry of reneging on an agreement made through Operation Phakisa that seismic surveys would not occur during the period June to November. Coincidentally, Ezemvelo KZN Wildlife marine ecologist, Jennifer Olbers, states that the highest number of whale strandings were recorded on the KZN coast last year. I would appreciate ERM's comment on the associated concerns that Olbers raises in a presentation reviewing global literature on the effects of seismic surveys. This research, says Olbers, states that seismic blasts can interrupt the communication, reproduction, navigation and eating habits essential to the survival of marine life, including whales, dolphins, turtles and fish and even plankton.</p> <p>"In the best case, marine mammals manage to escape from the noise in time. But in the worst case, the extreme sound pressure causes blood vessels to rupture and deafness. In a study of stranded/entangled animals in Florida, USA, researchers found that between 36-57% of bottlenose dolphins and rough-toothed whales had profound hearing loss, implying that impaired hearing could have led to their stranding/entanglement. In addition to this, it is suggested that even if impacts are fatal, only 2% of all whale or dolphin carcasses are detected and recovered. Such massive under-reporting of cetacean mortalities could be hiding very severe impacts. Currently, in South Africa, there is a lacuna in the mining legislation regarding reconnaissance surveys and their environmental authorisation pertaining to seismic surveys, effectively allowing these activities to occur without environmental input and potentially ignoring the harmful effects to the environment. Seismic surveys pose an unacceptable risk to marine fauna (at an individual and population level), the full extent of which will not be understood until long after the harm has occurred."</p> <p>The questions arises: Do Sasol/ENI intend to conduct / commission further seismic surveys during the exploratory drilling phase?</p> <p>Lastly, on blowout risks, while the scoping report acknowledges obvious disastrous marine pollution consequences - and health and safety risks – it provides no risk assessment. Please could ERM advise, based on its experience in the field and studies it has conducted, how often blowouts of oil/gas occur in other drilling explorations around the world.</p> <p>In addressing the above queries, we would appreciate if ERM (or Sasol/ENI) could also summarise in 100 - 200 words what benefits are expected to arise from the proposed exploration drilling programme, or more specifically: Who will ultimately benefit the most and at what cost to the environment?</p>		<p>Seismic campaigns are performed prior to drilling activities as it is necessary to determine possible reservoir targets. Currently Eni/Sasol have no plans to operate any seismic campaign in South Africa. They could however license new data acquired by geophysical contractors who operate in terms of Reconnaissance Permits granted by DMR/PASA subsequent to the undertaking of an environmental assessment process.</p> <p>In particular, a new multi-client 2D-3D seismic survey is proposed by another geophysical contractor (PGS) along the Eastern coast of South Africa in early 2018, and this has been assessed in a separate environmental process. Eni and Sasol are currently assessing their interest in licensing the portion of 3D multiclient data which may cover the southern portion of the block.</p> <p>Your concern around the impacts associated with seismic surveys is noted, however, this EIA process is for exploration drilling, which is a different process to seismic surveys, as described in Chapter 4.5 of the Draft Scoping Report, 2018.</p> <p>A well blow-out is an unplanned event, the risk and impact of which will be assessed further in the EIA.</p> <p>The need and desirability of the project are discussed in Chapter 3 of the Draft Scoping Report, January 2018.</p>	
Sharin	Govender	City of uMhlatuze	My previous correspondence with regards to this process refers. Please ensure that all communication is sent to me as well.	09.11.2017	I can confirm that you are on our stakeholder database, however your email was captured with a typo, which is why you did not receive the latest communication. Please accept our apologies, the error has been amended.	09.11.2017
Fiona	McCarthy	Starlite Aviation Operations	Please could you provide me with a draft scoping report for the above project. I understand that the public meeting has been moved to January 2018 but would like to read up on the project prior to this meeting.	11.11.2017	The draft Scoping Report which was released in October has been withdrawn and a revised Scoping Report will be released next year prior to the meetings. The October version of the Scoping Report is subject to change and I would recommend waiting until the revised report is release so that you are preparing with the latest information.	14.11.2017
Matthew	Hemming	Private	Please register me as an I&AP. I am a resident of KZN.	10.11.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	10.11.2017
Jennifer	Olbers	Ezemvelo KZN Wildlife, Scientific Services	Please note that my details have been captured incorrectly in Annexb1 and Annexb4. Please see signature below and update your records/documentation.	30.10.2017	Thank you for letting us know, please accept our apology. We have corrected your details in the stakeholder database.	This Report
Frans	Van der Walt	QS2000	Why am I not receiving these notifications ? I thought I had confirmation that I am registered as I&AP ? (I received this from Sandy Camminga – similarly to the original notice of the meeting !)	09.11.2017	Please accept our apology, it appears that you were omitted from the mailing list on error. I can confirm that you are now on the stakeholder database and that you will receive notification going forward.	09.11.2017
Samuel	Chademana	Groundwork	I was wondering why has ENI decided to change the scope of their application? What were the reasons given?	09.11.2017	Eni are looking at additional information that may inform the location of their exploration wells. Any changes will be presented in the revised Scoping Report.	10.11.2017
Cheryl	Smart	Advocates Group Seven North	Would you please register me as an I&AP?	13.11.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	15.11.2017

Willem	Hofland	Private	In am using this temporary email as I am having issues in sending from my normal Outlook 2010's sending function. Please however continue to use my normal email address willem@hofland.co.uk People register me as an interested party and keep me fully informed	13.11.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	15.11.2017
Nuala	Gage	Intertek Industry Services	Please, register Intertek Industry Services as an interested party.	06.12.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	06.12.2017
Clive	Reid	SynergyWorldWideLogistics	We are a ships agent and oil & gas contractors (customs clearing and forward agents) and we would certainly be interested in representing principles in our fields and exposure. jason@synergyports.co.za	06.12.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	06.12.2017
Enrico	Ganter	Falconmere (Pty)Ltd	Register Falconmere (Pty) Ltd as an interested party	06.12.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	06.12.2017
Andrew	Dippenaar	PetroSA	Please register me as an interested party for the ENI/Sasol EIA.	14.12.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	14.12.2017
Nicole	Joubert	Lovemore Bro's Machine Movers and Riggers	I believe the public meeting has been moved out to Jan/Feb 2019. I request that we be documented as an interested party to obtain relevant information	09.01.2018	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	09.01.2018
Paul	Phelan	Private	Please reregister me as an Interested and Affected Party	26.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	26.10.2017
Anne	Louw	ICM People South Africa (Pt	I would like to register our company as an I&AP for the Block ER236 East Coast of SA exploratory drilling please.	01.11.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	01.11.2017
Tamlyn	Jolly	Zululand Observer	Please can you add me to your list of interested and affected parties, to ensure I get all correspondence relating to this?	26.10.2017	Thank you for your email. You have been added to the stakeholder database and will be kept informed throughout the EIA process.	26.10.2017
Nontsundu	Ndonga	City of uMhlathuze	The City of uMhlathuze has reviewed the above report in respect of the proposed exploration drilling. We submit the following comments for due consideration: The Municipality notes the issues identified in terms of Marine and Socio Economic Impacts, and shall reserve further comment until the relevant specialist studies have been conducted. The strategic nature of the project in terms of Government's Phakisa Programme within the Ocean Economy warrants alignment with strategic planning initiatives driven at a regional and local scale. To this end, the Municipality requests a meeting with project proponents to understand the initiative at a macro scale. To facilitate such engagement with the Municipality, the project applicant is hereby requested to contact Ms. Sharin Govender of the office of the Deputy Municipal Manager: City Development on Tel.: 035 9075174; Mobile: 0824504187; ar email: Sharin.Govender@umhlathuze.gov.za.	22.12.2017	Your comment is noted. You are invited to attend the public meeting on 06 February 2018, at the Premier Hotel at 17:00. After the first round of public meetings, there will be a further round of public meetings during the EIA phase comment period. During both sessions or by email you are welcome to provide further requests for clarification. In addition ERM will be in contact to possibly arrange a separate meeting with the City of uMhlathuze if possible and desired. Noted, Sharin Govender has been included on the Stakeholder Database.	This Report