7 STAKEHOLDER ENGAGEMENT

This chapter describes the engagement process undertaken to notify, consult, and consider input from stakeholders. Figure 7.1 outlines the approach to the EIA Update process and illustrates the stages where stakeholders were engaged.

7.1 STAKEHOLDER CONSULTATION

Shell has interacted with a selection of stakeholders in parallel with the EIA process:

- Mr Immanuel Mulunga (MME: Petroleum Commissioner) in June 2014
- Gabi Schneider (MME: Director of Geological Surveys) on 7 July 2014.
- Kahijoro Kahuure (MME: Permanent Secretary)
- Mr. Teofilus Nghitila (MET: Environmental Commissioner and Director) on the 4 July and 8 July 2014.
- Freddy Sikabongo (MET: Deputy Environmental Commissioner) on the 4 July 2014
- Dr Hein van Gils (Assistant to the Environmental Commissioner) on the 4 July and 8 July 2014.
- Ms Saima Angula (Assistant to the Environmental Commissioner) on 4 July 2014.
Anje Kreiner (Head of the National Marine Information and Research Centre) on 10 July 2014.

Kurt Laufer (Marco Fishing in Luderitz) on 30 July 2014.

David Russell (Fisheries Consultant) on 8 August 2014.

The objectives for the meetings were to:

- Provide information on Shell’s overall upstream venture plan and introduce the seismic survey as the start of the long term venture plan;
- Clarify the roles and responsibilities of key individuals within the various government departments;
- Confirm the decision-making process, the legal provisions and the information required for decision-making;
- Clarify timeframes and project scheduling needs; and
- Establish a basis for ongoing engagement.

Box 7.1 below illustrates the key issues from these interactions.

**Box 7.1 Summary of Key Issues Raised from Stakeholder Consultations.**

- Declining tuna catch rates due to seismic surveys.
- Oil and Gas sector and the fisheries industry need to co-operate.
- Need for independent research and data collection on the impact of seismics on fisheries.
- Pro-active engagement and cooperation with the Ministry of Environment and Tourism.
- Ensure that the final EIA report will be as educative as possible, conveying in clear terms what the survey entails including rationale for October/November timing, and implications for fisheries.
- The EIA needs to show that the Oil and Gas and fishing industries can co-exist.
- Environmental permitting requirements.

**7.2 Stakeholder Identification**

A list of stakeholders was compiled with input from key informants (i.e. local environmental consultants and key authorities) and from previous EIAs undertaken for the licence area. The list included government authorities (local and regional), Non-Governmental Organisations (NGOs), Community-Based Organisations (CBOs) and industry groups (including the fishing industry).

Please see Appendix A for a list of the identified stakeholders.
7.3  **STAKEHOLDER NOTIFICATION**

Stakeholders were notified about the EIA Report Update via email on 24 June 2014. Stakeholders were also sent a Background Information Document (BID) describing the proposed activities (See Appendix B). The BID was in both English and Afrikaans. The BID was also made available on the Project website at the following address:

www.erm.com/namibiaPEL39

Stakeholders were asked to provide comment within 21 days of notification so that issues and concerns could be considered in the EIA Update process. Selected stakeholders were contacted by telephone to verify that they had received the information.

7.4  **PUBLIC NOTIFICATION**

A notice was placed in *Die Republikein* (Afrikaans) and *The Namibian* (English) newspapers on 24 June 2014 to inform the general public about the proposed activities (see Appendix C). The advert was aimed at informing the broader public about the proposed exploration activities, providing details of the consultation process, and how members of the public could provide input. The notice also provided information for registering and when further information can be expected.

7.5  **DISCLOSURE OF EIA REPORT UPDATE**

The draft of the EIA Report Update (i.e. this report) is being disclosed for 21 days (16 July 2014 to 5 August 2014) to stakeholders and the general public for comment prior to finalisation and submission to the government authority. Hardcopies of the draft of the EIA Report Update are available for review in the public libraries at Windhoek, Walvis Bay, Swakopmund, and Luderitz. An electronic version of the report is available for download on the Project website:

www.erm.com/namibiaPEL39

Registered stakeholders have been notified of the availability of the draft report via email and/or telephone.
7.6 **MEETING WITH NAMIBIAN LARGE PELAGIC AND HAKE LONGLINING ASSOCIATION**

A meeting was also held on 7 August 2014 with Dave Russell who represents the Namibian Large Pelagic and Hake Longlining Association. Key discussion points from the meeting included the following:

- It is important for Shell and the fisheries sector to work together to collect data through future seismic operations.

- A mutually beneficial relationship with the fisheries sector and Shell will allow for the development of a long term strategy for research and monitoring.

- The Seismic Task Force should be informed of Shell’s commitment to engage with all stakeholders and its commitment to building scientific knowledge of Namibia’s ocean.

7.7 **SUMMARY OF KEY ISSUES RAISED**

The issues presented in this Section have been summarised from the comments submitted by stakeholders during the initial comment period and the draft EIA comment period (see Appendix D). In summary the key issues raised pertained to:

- Declining tuna pole and line catch rates due to seismic surveys;
- Environmental permitting requirements;
- Behavioral avoidance of fish to seismic acoustic emissions;
- Timing and location of the seismic survey; and
- Cooperation with the fishing industry.

Detailed comments and responses can be found in the Comments and Response Report in Appendix E.

7.7.1 **Declining Tuna Pole and Line Catch Rates due to Seismic Surveys**

The Namibian Large Pelagic and Hake Longlining Association was concerned that the presence of seismic surveys off the coast of Namibia are linked to the declining catch rates experienced by the Namibian pole and line fishing industry in recent years.

The relationship between declining catches and seismic surveys in the area does not appear to be a direct one. Seismic surveys off the coast of Namibia are not a recent phenomenon. 2D surveys have been taking place periodically since the 1960’s and 3D since 1994. Moreover, in 2009 the Tuna catch was the highest since this fishing sector began in Namibia, however, a seismic survey was undertaken over the fishing hotspot in that year. Similarly, declining catch can be attributed to many different factors, including a decrease in effort, a declining stock abundance, changes in water temperature (as a result
of larger scale changes such as the suppression of upwelling and a deepening of the thermocline), irregular, large scale and long-term climate shifts as well as the shifts between El Niño and La Niña events, caused by the El Niño-Southern Oscillation (ENSO), changes in food availability and distribution. As such, it is difficult to single out one factor in isolation as the sole cause for declining catch rates.

7.7.2 Environmental Permitting Requirements

Concerns were raised by stakeholders that the due environmental permitting processes was not adhered to as Shell did not apply for an Environmental Clearance Certificate (ECC). An ECC is required for certain activities as per the Environmental Management Act (No. 7 of 2007) and its Regulations. IAP’s commented that Shell should have applied for ECC.

It is ERM’s understanding that an ECC is not required for the proposed activities based on interpretation of the requirements of Environmental Impact Assessment Regulations: Environmental Management Act, 2007 as well as the List of Activities That May Not Be Undertaken without Environmental Clearance Certificate: Environmental Management Act, 2007 (Government Notices No. 29 and No. 30 of 2012). The above mentioned interpretation of the law was confirmed with the government of Namibia. It was also noted that numerous other seismic surveys have been approved under the same process.

7.7.3 Behavioral Avoidance of Fish to Seismic Acoustic Emissions

There has been concern shown that the seismic survey will impact negatively on fish causing them to behave differently to what is expected. This includes behaviour avoidance and different responses to seismic sound from large pelagic migratory fish species.

The potential impact on large migratory pelagic fish through behavioural avoidance is discussed in Section 8.5.4 of the EIA report. The impact is considered to be short-term in nature varying somewhat between species and individuals and is dependent on the properties of the received sound. Observed effects may extend beyond the survey area, but are unlikely to persist for more than a few days after termination of airgun use. In some cases, behaviour patterns return to normal within minutes of commencement indicating habituation to the noise. The potential impact on the receptor was determined to be minor with the implementation of mitigations. Furthermore, the impact of changing catch rates due to behavioural avoidance of fish in and around survey areas was also assessed to be minor with the implementation of mitigations (Section 8.5.9 of the EIA report).

7.7.4 Timing and Location of the Seismic Survey

A query was made as to the timing and location of the survey. Stakeholder’s also indicated that the seismic survey should not take place over the peak tuna
fishing season, between January and March. In addition, the location of the survey area in relation to Tripp Seamount was an area of concern.

The seismic survey is planned to avoid the peak period for pole and line tuna fishing. In addition, the survey footprint is some distance from Tripp Seamount (approximately 50 km to the north), which has been identified as a key location for fishing. The timing of the programme has also been identified to be the best options based on a number of considerations, including the presence of marine mammals in the area and conducive weather and sea state conditions for surveying.

7.7.5 **Cooperation with the Fishing Industry**

Stakeholders identified that there was opportunity to work with Shell with regards to conducting research along the Namibian Coast.

Shell is committed to working with all sectors utilising the Namibian coast and is willing to aid in research on key issues.

7.8 **COMMUNITY FEEDBACK MECHANISM**

A community feedback mechanism will be developed to address exploration-related individual and community concerns and grievances. This mechanism is an important element of the stakeholder engagement process as it creates opportunities to help identify problems and develop solutions with communities. The objective will be for the operator to receive record, respond to and address any complaints made due to exploration activities. The community feedback process would help to allow complaints to be responded to efficiently, avoiding escalation of the issue, reducing potential adverse impact to the local population and maintaining a positive attitude towards the exploration activities. The community feedback process will be based on five steps:

1. Advertising and communicating the process to stakeholders
2. Receiving and registering community feedback
3. Reviewing and responding to issues
4. Response and close-out
5. Monitoring and evaluation
Appendix A

Stakeholder Database
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Appendix B

Background Information
Document
Namibian Deepwater Orange Basin Petroleum Exploration Licence (PEL) 39
Impact Assessment (IA) Update
Background Information Document (BID)
June 2014

Background

Shell Namibia Upstream BV (Shell) has acquired a 90% controlling interest in Petroleum Exploration Licence 39 (PEL 39) located offshore Namibia. The licence area covers blocks 2913A and 2914B and measures 12,299km².

Baseline scientific studies and full Environmental Impact Assessments (EIAs) for proposed seismic activities were conducted over the full licence area. These studies and the EIAs were conducted for Signet Petroleum Ltd (December 2011) and Spectrum (December 2013). Both these applications to proceed with the seismic surveys were approved by the Ministry of Mines and Energy (MME).

Shell is proposing to conduct a 3D seismic survey in the north-eastern portion of the licence area approximately 250km offshore of the Namibian coast. The survey is planned to commence in November 2014 and last for approximately 50 days. The survey start and end dates are not fixed because it depends on the availability of a survey vessel as well as possible downtime of the operations due to adverse sea state conditions. The planning for the seismic survey will take account of fishing activities and the presence of marine animals. The survey would cover approximately 2,500km². Water depths in the survey area range from 1300m to 2500m (refer to the shaded area in Figure 1).

Environmental Resources Management Southern Africa (Pty) Ltd (ERM) has been appointed by Shell to undertake a full Impact Assessment (IA) and update the existing baseline studies. The IA Update process will include input from marine fauna and fisheries specialist studies. The studies will undergo specialist peer review, while the Impact Assessment Report and accompanying Mitigation and Management Plan will be subjected to independent external peer review by a local Namibian expert. The objective of the peer reviews is to ensure that the reports are objective, scientifically valid and consistent with best practice.

Stakeholder Engagement

To inform the IA Update this Background Information Document (BID) is being distributed to stakeholders for an initial 21-day registration and comment period from 24 June 2014 to 14 July 2014. The registration and comment period is also being advertised in The Namibian and Die Republikein newspapers. Comments received during this time will inform the IA Update process.

In addition, the draft IA Update report will be disclosed to stakeholders for a 21-day comment period. This is planned for public release in July or August 2014. Comments will be responded to when finalising the IA Update report prior to submission to authorities.

The final IA Report Update will be submitted to the Ministry of Mines and Energy (MME) in August 2014.

Proposed Activities

Shell’s proposed 3D seismic survey is programmed for a 50 day period.

Seismic surveys are an important part of oil and gas exploration activities. The purpose of a seismic survey is to produce detailed images of rock formations to determine the location and size of oil and gas reservoirs. During seismic surveys, high-level, low frequency sounds are directed towards the seabed from near-surface sound sources towed by a seismic vessel. The sound waves that bounce off subsea rock formations are recorded by hydrophones. These are towed in a multiple streamer (see Figure 1.3) configuration, consisting of 8 to 10 streamers of 8km length at a spacing of around 200m. Analyses of the returned signals allow for interpretation and visualisation of subsea geological formations.

Potential Benefits

Shell is at the early stages of exploration activities and it can take many years to determine if there are sufficient reserves to progress to an oil and gas production stage. Significant future direct benefits to Namibia could arise if sizable discoveries are made. Potential future benefits in the event of a field development include the security of energy supply, job creation, skills transfer, and economic development.

Environmental Protection

The oil and gas industry has demonstrated the ability to operate seismic survey exploration activities in a manner that protects marine life. Comprehensive impact assessments and management plans are prepared to ensure offshore operations are conducted safely and responsibly. Marine seismic survey exploration is regulated by government and managed by the operator to avoid impacts to marine animals and avoid disruption to other marine users.

The environment and any potential harm from the survey will be carefully studied and internationally standards will be adopted to ensure the protection of Namibia’s marine resources and to avoid or mitigate effects on other marine users. The objectives of applying these standards include:

- Applying internationally-recognised protection measures
- Taking into account periods of greater environmental sensitivity (e.g. peak whale presence)
- Monitoring the survey area for the presence of marine mammal species and stopping operations, if necessary, to avoid interaction
- Working cooperatively with the fishing industry and other marine users to avoid disruption to their activities and damage to fishing gear
**Figure 1.1:** Proposed 3D seismic survey gathers information using sound waves to map rock formations below the seafloor.

**Figure 1.2:** Airguns on-board a seismic vessel prior to deployment. These are the sound sources that develop the signals directed to the sea-floor.

**Figure 1.3:** A typical streamer containing hydrophones ready to be deployed. These are towed behind the seismic vessel to record returning sound signals.

**Figure 1.4:** Loading of Supplies onto a Seismic Vessel.

**Figure 1:** Location of PEL 39 area and proposed 3D survey area (green shading – notional outline)

**HOW TO SUBMIT COMMENTS**

To submit questions and comments please contact:
**Tougeeda Aspeling** (ERM)
Tel: 021 681 5400
Email: namibiaPEL39@erm.com

Hardcopies of the Updated IA Report will be available at the following public libraries from 16 July till 5 August:

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Namibiese Diepwater-oranjekome-petroleumeksplorasielisensie (PEL) 39

Impakassessering: Hersiening en bywerking
Agtergrond
AID
Junie 2014

Agtergrond
Shell Namibia Upstream BV (Shell) het ’n 90% beherende aandeel in Petroleumeksplorasielisensie 39 (PEL 39), wat aflandig van Namibië lê, bekom. Die lisensiegebied dek blok 2913A en 2914B en is 12,299 km² groot.

Basislyn- wetenskaplike studies en volledige omgewingsimpakassesserings (OIA’s) vir voorgenome seismiese aktiwiteite is oor die hele lisensiegebied uitgevoer. Hierdie studies is vir Signet Petroleum Bpk (in Desember 2011) en vir Spectrum (in Desember 2013) uitgevoer. Beide aansoeke om met die seismiese opnames voort te gaan is deur die Ministerie van Myne en Energie (MME) goedgekeur.

Shell beoog om ’n 3D-seismiese opname in die noordoostelike gedeelte van die lisensiegebied, ongeveer 250 km aflandig van die Namibiese kuslyn, uit te voer. Die aanvangsdatum vir die opname word vir November 2014 beplan. Maar die opname kan egter te enige tyd vanaf Oktober tot einde Januarie onderneem word – gebaseer op seedervermydingstyperde en die beskikbaarheid van gesikte geofisiiese kontakteurs. Die opname sal ongeveer 2,500 km² beslaan. Waterdieptes in die opnamegebied sterk vanaf 1300 m tot 2500 m (sien ingekleurde gebied op Figuur 1).

Environmental Resources Management Southern Africa (Edms) Bpk (ERM) is deur Shell aangestel om ’n volledige impakassessering (IA) te doen en bestaande basislynstudies by te werk. Die bywerkingproses van die IA sal insette deur spesialisistudies oor seidiere en visserye insluit. Die studies sal aan portuurevaluerings deur spesialiste blootgestel word terwyl die IA-verslag en die meegaande Mitigasie- en Bestuursplan onderhewig sal wees aan onafhanklike eksterne portuurevaluerings deur ’n plaaslike kundige van Namibië. Die doel met die portuureassessies is om te sorg dat die verslae objektief, wetenskaplik geldig en inlyn met beste praktektye is.

Belanghebberbetrokkenheid
Ten einde betekenisvol tot die hersiening en bywerking van die IA by te dra word hierdie AID aan belanghebbers versprei vir ’n aanvanklike tydperk van 21 dae vir registrasie en kommentaar, vanaf 24 Junie 2014 tot 14 Julie 2014. Die registrasie- en kommentaartydperk word ook in The Namibian en in Die Republikein geadverteer. Kommentaar wat gedurende hierdie tydperk ontvang word, sal betekenisvol bydra tot die hersienings- en bywerkingsproses van die IA.

Hierbenewens sal die konsep van die bygewerkte IA-verslag vir 21 dae aan belanghebbers beskikbaar gestel word. Hierdie fase van die openbare vrystelling word vir Julie of Augustus 2014 beplan. Daar sal op kommentaar gereageer word wanneer die bygewerkte IA-verslag gefinaliseer word, voordat dit aan die ouwerhede voorgelê word.

Die finale bygewerkte IA-verslag sal in Augustus 2014 aan die Ministerie van Myne en Energie (MME) voorgelê word.

Voorgenome aktiwiteite
Shell se voorgenome 3D-seismiese opname sal oor ’n tydperk van 50 dae strek.

Seismiese opnames vorm ’n allerbelangrike deel van eksplorasiaktiwiteite vir olie en gas. Die doel met ’n seismiese opname is om gedetailleerde beelde van rotsformasies te bekom ten einde die ligging en grootte van olie- en gasreservories te bepaal. Gedurende seismiese opnames word hoëvlak-laefrekwensielanke na die seebodem gestuur vanaf klankbronne wat naby die oppervlak deur ’n seismiese vaartuig gesleep word. Die klankgolwe wat deur onderse rotsformasies teruggekaats word, word deur hidrofone opgeneem. Die hidrofone word in ’n veelvoudige seismiese nasleperkonfigurasie gesleep (sien Figuur 1.3) en bestaan uit 8 tot 10 slepers van 8 km lank en ongeveer 200m uitmekaar. Ontledings van die weerkaatste seine sorg dat onderse geologiiese formasies interpreteer kan word.

Potensiële voordele
Shell staan op die oomblik op die drupmel van eksplorasiaktiwiteite en dit kan nog baie jare neem voordat vasgestel kan word of daar genoeg reserves is om oor te gaan tot olie- en gasproduksie. Namibië kan direk baat uit enige betekenisvolle voordele in die toekoms indien aansienlike ontekkings gemaak word. Potensiële voordele sluit die beveiliging van energievoorsiening, werkskeping, oordrag van vaardighede en ekonomiese ontwikkeling in.

Beskerming van die omgewing
Die olie- en gasbedryf het bewys dat hulle enige eksplorasieworthyhede wat seismiese opnames insluit op so ’n wyse uitvoer dat seeliewe beskerm word. Omvattende impakassesserings en bestuursplanne word voorberei om te verseker dat aflandige bedrywighede veilig en verantwoordelik uitgevoer word. Seismiese opname-eksplorasië in die see word deur die regering gereguleer en deur die operator bestuur om enige impak op seidiere te vermy en om nie ander seegebraukers te ontrig nie.
Die omgewing en enige potensiële skade van die opname daarop sal deeglik bestudeer word. Internasionaal-aanvaarde beskermingsmaatreëls sal aanvaar word om te sorg dat Namibië se seebronne beskerm word en om enige uitwerking daarvan op ander seegebruikers te vermy of te temper. Die beginsels wat hierdie beskermingsmaatreëls onderlê, is soos volg:

- Toepassing van internasionaal-aanvaarde standaarde en riglyne
- Inagwenying van tydperke van groter omgewingsensiwiteit (bv. walvisteenoordigheid gedurende piektye)
- Monitering van die opnamegebied vir die teenawoordigheid van sesoogdierspiesies en die staking van bedrywighede, indien nodig, om interaksie te verhinder
- Samewerking met die visbedryf en ander seegebruikers om ontwrigting van hulle aktiwiteite en skade aan visserytoerusting te voorkom.

### Figuur 1.1: Voorgenoome 3D-seismiese opname samel inligting via klankgolwe in om rotsformasies op die seebodem te karteer.

### Figuur 1.2: Lugkanonne aanboord van ’n seismiese vaartuig voordat dit afgevuur word. Hulle vorm die klankbron wat die klankbron wat na die seebodem gestuur word.

### Figuur 1.3: ’n Tipiese nasleper met hidrofone net reg vir gebruik. Die hidrofone word agter die seismiese vaartuig geslee op weerskaatsie klankseine op te neem.

### Figuur 1.4: Voorraad word op ’n seismiese vaartuig gelaai.

### Figuur 1: Ligging van PEL 39 area en voorgestroede 3D opname area (groen skadu)

**HOE OM KOMMENTAAR IN TE DIEN**

Kontak asbeleef vir:
- **Touheeda Aspeling** (ERM)
- Tel: 021 681 5400
- E-pos: namibiaPEL39@erm.com

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Groot waardering heers onder kommunale boere vir Meato se uitreiking van prys, soos weer deur die onlangsbesoek aan Otjinene bewys is.

Jaarvergaderings, soos weer deur die onlangsbesoek aan Otjinene bewys is, is heeltemal noodig om hulle die selfstandigheid te gee wat dit vir hulle nodig is om te voortdurende verbetering ten opsigte van die handelings- en selsheidssekeriteit volgens die reglemente toe te pas. DuPont verbeter het, nog steeds, selsheidssekeriteit volgens die reglemente toe te pas. ’n Bewys dat ekonomiese selsheidssekeriteit worstel met die voorkeur van die handelings- en selsheidssekeriteit volgens die reglemente toe te pas. ’n Bewys dat ekonomiese selsheidssekeriteit worstel met die voorkeur van die handelings- en selsheidssekeriteit volgens die reglemente toe te pas. ’n Bewys dat ekonomiese selsheidssekeriteit worstel met die voorkeur van die handelings- en selsheidssekeriteit volgens die reglemente toe te pas. ’n Bewys dat ekonomiese selsheidssekeriteit worstel met die voorkeur van die handelings- en selsheidssekeriteit volgens die reglemente toe te pas. ’n Bewys dat ekonomiese selsheidssekeriteit worstel met die voorkeur van die handelings- en selsheidssekeriteit volgens die reglemente toe te pas. ’n Bewys dat ekonomiese selsheidssekeriteit worstel met die voorkeur van die handelings- en selsheidssekeriteit volgens die reglemente toe te pas. ’n Bewys dat ekonomiese 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Are you an entrepreneur or aspiring entrepreneur residing in Windhoek?

Are you struggling to get all the business support you need at one consultant?

The Centre for Enterprise Development (CED) in collaboration with the Partnership in Local Development, Democracy and Social Innovation (PLDDSI) is bringing you an opportunity to explore an innovative concept that will offer Small Business Support Services under ONE roof! The overall objective is to equip enterprises with the required expertise to respond to market needs, grow and create jobs, through advisory and mentorship services.

SMEs (start-ups and existing) are hereby invited to attend a consultative meeting, residing in Windhoek?

Join us on 26 June 2014 at the Polytechnic Auditorium 2 (close to the library) from 17h30 – 19h30 RSVP before or on the 25th June 2014 by sending your full name and the name of your business to:
Mr. Edwin Kavhuha via SMS to 0855510121 or email: sme@polytechnic.edu.na

We are looking forward to hearing your views and input!

"REFRESHMENT WILL BE SERVED"

Terms & Conditions apply.

VACANCIES

Position: National Co-ordinator
Reporting to: Secretary General
Duty Station: Windhoek

Primary Purpose of this position:

To coordinate representing, organising and manage union affairs at national level. The candidate should be a very responsible, trustworthy individual who will handle the work with professional discretion, and who will ensure that excellent union service is provided expeditiously to union members at all times.

Key performance areas:

• Recruit members and represent members at hearings, conciliation/arbitration
• Managing the Head office and carry other functions as instructed by the Secretary General.
• Overall management of the national activities and administration.
• Provide weekly, monthly, quarterly and annual reports, and assisting with day to day running of the branch activities.
• Perform other duties assigned by the Secretary General.

Minimum requirements:

• Grade 12 Certificate
• Relevant Certificate or diploma in Labour Law or paralegal with a minimum of 2 years.
• Knowledge of Namibia Labour Laws and understanding of Trade Union
• You must have a drivers license

Position: Administrative Secretary
Reporting to: Secretary General
Duty Station: Windhoek

Primary Purpose of this position:

To undertake all administrative duties required by BAWON’s Headquarters’ office. The candidate should be very responsible, trustworthy individual who will handle the work with professional discretion, and who will ensure that excellent union service is provided expeditiously to union members at all times.

Key performance areas:

• Handling all incoming and outgoing communications (telephone, email, fax, walk-in), fielding inquiries, receiving and documenting member's complaints, disseminating information, making appointments.
• Organising diaries, taking dictation, writing meeting minutes, preparing and compiling accurate monthly and annual sheets, typing and distributing letters and reports, maintaining an effective file system.
• Providing general assistance both before and during union representations and workshop; acquiring quotations, making bookings, sending invitations, photocopying, handling of petty cash and perform any other ad hoc duties as and assign by the Secretary General.

Minimum requirements:

• Grade 12 Certificate
• Relevant certificate or diploma in office administration, with a minimum of two (2)years professional secretarial
• Computer literate, ICDL, will be an advantage.
• Excellent command of both English and Afrikaans, verbal and written.
• Proficient in all functions related to administration

Interested candidate should forward a comprehensive CV together with a covering letter, certified copies of qualification to:
The Secretary General
BAWON
P.O Box 23282
Windhoek
E-mail: thomas.muchimba23@gmail.com

The closing date is: 30 June, 2014

NB: Only shortlisted candidates will be contacted and no documents will be returned.
Appendix D

Stakeholder Correspondence
Initial Notification
24 June 2014

Proposed Oil and Gas Exploration Activities in the Deepwater Petroleum Exploration 39 (PEL 39) Offshore of Namibia

Dear Stakeholder,

Shell Namibia Upstream B.V. (Shell) has acquired a 90% controlling interest in Petroleum Exploration Licence 39 (PEL 39) located offshore of Namibia. The licence area covers blocks 2913A and 2914B and is approximately 12,299 km².

Baseline scientific studies and full Environmental Impact Assessments (EIAs) for proposed seismic activities were conducted over the full licence area. These studies and the EIAs were conducted for Signet Petroleum Ltd (December 2011) and Spectrum (December 2013). Both these applications to proceed with the seismic surveys were approved by the Ministry of Mines and Energy (MME).

Shell is proposing to conduct a 3D seismic survey in the north-eastern part of the licence area approximately 250 km offshore of the Namibian coast. The survey would cover approximately 2,500 km². Water depths in the survey area range from 1300m to 2500m. Seismic surveys are carried out to better understand the rock formations that are below the seabed and whether these formations hold oil or gas.

Environmental Resources Management Southern Africa (Pty) Ltd (ERM) has been appointed by Shell to undertake a full Impact Assessment (IA) and update the existing baseline studies. The IA Update will contain details on the proposed activities and provide information on possible environmental impacts and outline a mitigation and management plan.

For more information please find attached a copy of the Background Information Document (BID).

If you or your organisation would like to make comments on the proposed activities or to register as an Interested and Affected Party (I&AP) and continue to be informed, please submit your comments with your contact information to Toungeha Aspeing before 14 July 2014 at email: namibiaPEL.39@erm.com.

Yours sincerely,

[Signature]

Toungeha Aspeing
Stakeholder Engagement Consultant
Tel: 021 681 5100
Email: namibiaPEL.39@erm.com
24 Junie 2014

Voorgestelde gaseksploratie in die Diepwater Petroleum Eksplosieliensiegebied 39 (PEL 39) langs die Namibiese kus

Geachte Belangehebende

Shell Namibia Upstream BV (Shell) het n 90% beherende aandeel bekrompel in Petroleum Eksplosieliensiegebied 39 (PEL 39), gelei langs die Namibiese kus. Die liensiegebied sluit blokke 2913A en 2914B in en is ongeveer 12.299km² groot.

Baselyn wetskapslike studies en ‘n Ongewingingsimpakstudie (OIS) vry die voorgestelde aktiviteit wat buite die liensiegebied, in reeds onderkend en in Desember 2011 vir Signet Petroleum Ltd en in Desember 2013 vir Spektrum Petroleum uitgevoer. Beide voorgenemende aanmoediging van seismiese opnames, is deur die Departement van Mynbou en Energie (DME) goedgekeur.

Shell stel voor dat ‘n 3D seismiese opname gedaan word in die noordelijk deel van die liensiegebied, ongeveer 250km van die Namibiese kus. Die opname sal ongeveer 2500km² dink en sal plaasvind in water van tussen 1300m en 2500m diep. Seismiese opnames word gedaan om die reteformasies en die seebodem beter te verstaan en om te bepaal of die formasies olie of gas bevatt.

Environmental Resources Management Southern Africa (Pty) Ltd (ERM) is deur Shell aangestel om ‘n OIS te doen en om die bestaande baselyn data op te dateer. Die OIS sal besonderhede bevat van die voorgestelde energieprojek saam met ‘n bestuursplan wat voorstel dat maatregels aangewen word om die meetlike vermindering en versagting van impakte.

Vir meer inligting raadpleeg die aangehoorde Aftelgrondinligtingsdokument (AID).

Indien u of u organisasie as ‘n belanghebbende en geaffekteerde party (B&GP) wil registreer en/of wil deelname aan die proses, kontak asb met Toughheeda Aspelung by ERM voor 14 Julie 2014 via epos by namibiaPEL39@erm.com.

Vriendelike groete

Toughheeda Aspelung
Publicite Deelname Konsultant
Tel: 021 681 5400
E-pos: namibiaPEL39@erm.com
Figure 1.3 Proof of notification to stakeholders
Dear Tougheeda,

I have only seen correspondence of your activity yesterday. I am a operating a tuna poling vessel from Luderitz Harbour and we fish in the area where you intend to conduct the survey. Please register my company as an Interested and affected party.

Tuna 3 JV,
PO Box 305,
Luderitz
tel/fax: +264 63 20 40 31

Thank you and kind regards,

Jason Burgess
+264812034458
Dear Tougheeda Aspeling

Kindly register me as an interested & affected party.

Sincerely
Bronwen Currie

Chief Fisheries Biologist
Ministry of Fisheries and Marine Resources
National Marine Information and Research Centre
P. O. Box 912
Swakopmund
Namibia
Fax: +264 64 404385
Tel: +264 64 4101000
email bcurrie@mfmr.gov.na

From: Tougheeda Aspeling [mailto:Tougheeda.Aspeling@erm.com]
Sent: 24 June, 2014 3:47 PM
To: Tougheeda Aspeling
Subject: Proposed Oil and Gas Exploration Activities in the Deepwater Petroleum Exploration 39 (PEL 39) Offshore of Namibia

Dear Stakeholder

Shell Namibia Upstream BV (Shell) has acquired a 90% controlling interest in Petroleum Exploration Licence 39 (PEL 39) located offshore of Namibia. Shell is proposing to conduct a 3D seismic survey in the north-eastern part of the license area approximately 250 km offshore of the Namibian coast. The survey would cover approximately 2,500km². Environmental Resources Management Southern Africa (Pty) Ltd (ERM) has been appointed by Shell to undertake a full Impact Assessment (IA) and update the existing baseline studies. The IA Update will contain details on the proposed activities and provide information on possible environmental impacts and outline a mitigation and management plan. For more information please find attached an initial notification letter and copy of the Background Information Document (BID). The BID is also available online at www.erm.com/namibiaPEL39 or from ERM on request.

If you or your organisation would like to make comments on the proposed activities or to register as an Interested and Affected Party (I&AP) and continue to be informed, please submit your comments with your contact information to Tougheeda Aspeling before 14 July 2014 at email: namibiaPEL39@erm.com.

Geagte Belanghebbende
Shell Namibia Upstream BV (Shell) het ’n 90% beherende aandeel bekom in Petroleum Eksplorasielisensie 39 (PEL39), geleë langs die Namibiese kus. Shell stel voor dat ’n 3D seismiese opname gedoen word in die noordoostelike deel van die lisensiegebied, ongeveer 250km vanaf die Namibiese kus. Die opname sal ongeveer 2500km² dek en sal plaasvind in water van tussen 1300m en 2500m diep. Seismiese opnames word gedoen om die rotsformasies op die seebodem beter te verstaan en om te bepaal of die formasies olie of gas bevat.

Environmental Resources Management Southern Africa (Pty) Ltd (ERM) is deur Shell aangestel om ’n Omgewingsimpakstudie (OIS) te doen en om die bestaande basislyn data op te dateer. Die OIS sal besonderhede bevat rakende die voorgestelde aktiwiteite sowel as ’n bestuursplan wat voorstelle sal maak aangaande die moontlike vermindering en versagting van impakte. Vir meer inligting raadpleeg asb die aangehegde brief en Agtergrondinligtingsdokument (AID). Die AID is ook beskikbaar aanlyn by www.erm.com/namibiaPEL39 of vanaf ERM.

Indien u of u organisasie as ’n belanghebbende en geaffekteerde party (B&GP) wil registreer en/of wil deelneem aan die proses, kontak asseblief vir Tougheeda Aspeling by ERM voor 14 Julie 2014 via epos by namibiaPEL39@erm.com.

Regards / Groete

Tougheeda Aspeling
Stakeholder Engagement Consultant / Publieke Deelname Konsultant

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 |
E | namibiaPEL39@erm.com W www.erm.com/namibiaPEL39

The world’s leading sustainability consultancy
Dear Colleague

Cetaceans, sea turtles and seabirds is my special interest. Please register me also as MET ICZM project.

Regards

Rod Braby
NACOMA Project Coordinator
22 Hendrik Witbooi Street, Swakopmund
P.O. Box 7018, Swakopmund, Namibia
Tel: (00264) 064-403-905 / Fax: +264 64 403-905 Cell: +264 (0)812460996
Website: www.nacoma.org.na
Dear Touqheeda Aspeling

With reference to the Namibian EIA Regulations 2012, please be reminded that you need to apply for a Clearance Certificate for your EIA prior to embarking on the process.

Regards

Dr Hein van Gils
Senior Conservation Scientist
Environmental Assessment Subdivision
Ministry of Environment & Tourism
Levison Arcade; Capital Centre 6th floor
Windhoek, Namibia

+264-61-284 2709
hvangils@met.na
hein.gils@cimonline.de

From: Touqheeda Aspeling [mailto:Tougheeda.Aspeling@erm.com]
Sent: 24 June 2014 03:47 PM
To: Touqheeda Aspeling
Subject: Proposed Oil and Gas Exploration Activities in the Deepwater Petroleum Exploration 39 (PEL 39) Offshore of Namibia

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Geagte Belanghebbende

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Regards / Groete

Tougheeda Aspeling
Stakeholder Engagement Consultant / Publieke Deelname Konsultant

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 | E namibiaPEL39@erm.com W www.erm.com/namibiaPEL39

The world's leading sustainability consultancy
Good day,

Please register as I&AP me for the Proposed Oil and Gas Exploration Activities in the Deepwater Petroleum Exploration 39 (PEL 39) Offshore of Namibia. I am representing the Ministry of Fisheries and Marine Resources. Please add my yahoo address (a_kreiner_2000@yahoo.com) as well as my work address (akreiner@mfmr.gov.na) as we often experience e-mail failures at MFMR.

Regards
Anja

*************************************************************************

Anja Kreiner
Subdivision Environment
National Information and Research Center
P.O. Box 912
Swakopmund, Namibia
Tel: +264 (0)64 410 1000 (switchboard)
   +264 (0)64 410 1158 (direct line)
Fax: +264 (0)64 40 4385 or +264 (0)64 406784
e-mail: akreiner@mfmr.gov.na, a_kreiner_2000@yahoo.com
*************************************************************************

This email is free from viruses and malware because avast! Antivirus protection is active.
Tougheeda Aspeling

From: Ben van Zyl <bvanzyl@seafo.org>
Sent: 25 June 2014 09:42 AM
To: Tougheeda Aspeling
Subject: RE: Proposed Oil and Gas Exploration Activities in the Deepwater Petroleum Exploration 39 (PEL 39) Offshore of Namibia

Dear Sir thank you very much for the information. As the Executive Secretary of the South East Atlantic Fisheries Organization I would request you to be more specific on the location of the proposed survey area. I do assume that the area is located with the EEZ of Namibia.

I thank you

Ben van Zyl

From: Tougheeda Aspeling [mailto:Tougheeda.Aspeling@erm.com]
Sent: Tuesday, June 24, 2014 3:47 PM
To: Tougheeda Aspeling
Subject: Proposed Oil and Gas Exploration Activities in the Deepwater Petroleum Exploration 39 (PEL 39) Offshore of Namibia

Dear Stakeholder

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Geagte Belanghebbende

Shell Namibia Upstream BV (Shell) het ‘n 90% beherende aandeel bekom in Petroleum Eksplorasielisensie 39 (PEL39), geleë langs die Namibiese kus. Shell stel voor dat ‘n 3D seismiese opname gedoen word in die noordoostelike deel van die lisensiegebied, ongeveer 250km vanaf die Namibiese kus. Die opname sal ongeveer 2500km² dek en sal plaasvind in water van tussen 1300m en 2500m diep. Seismiese opnames word gedoen om die rotsformasies op die seebodem beter te verstaan en om te bepaal of die formasies olie of gas bevat.

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Regards / Groete

Tougheeda Aspeling
Stakeholder Engagement Consultant / Publieke Deelname Konsultant

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Please visit ERM’s web site: http://www.erm.com
Dear Tougheeda,

Good day. This is to acknowledge the receipt of your email on the above subject matter. The Sam Nujoma Marine and Coastal Resources Research Centre Coastal Resources Research Centre (SANUMARC) of the University of Namibia is indeed an interested party and we will therefore like to register as an Interested and Affected party.

The group email of the staff members of the Centre is samnujomacampus@unam.na.

Regards and have a pleasant evening.

Edosa

---

Tougheeda Aspeling

From: Tougheeda Aspeling [mailto:Tougheeda.Aspeling@erm.com]
Sent: Tuesday, June 24, 2014 3:47 PM
To: Tougheeda Aspeling
Subject: Proposed Oil and Gas Exploration Activities in the Deepwater Petroleum Exploration 39 (PEL 39) Offshore of Namibia

Dear Stakeholder

Shell Namibia Upstream BV (Shell) has acquired a 90% controlling interest in Petroleum Exploration Licence 39 (PEL 39) located offshore of Namibia. Shell is proposing to conduct a 3D seismic survey in the north-eastern part of the license area approximately 250 km offshore of the Namibian coast. The survey would cover approximately 2,500km². Environmental Resources Management Southern Africa (Pty) Ltd (ERM) has been appointed by Shell to undertake a full Impact Assessment (IA) and update the existing baseline studies. The IA Update will contain details on the proposed activities and provide information on possible environmental impacts and outline a mitigation and management plan. For more information please find attached an initial notification letter and copy of the Background Information Document (BID). The BID is also available online at www.erm.com/namibiaPEL39 or from ERM on request.

If you or your organisation would like to make comments on the proposed activities or to register as an Interested and Affected Party (I&AP) and continue to be informed, please submit your comments with your contact information to Tougheeda Aspeling before 14 July 2014 at email: namibiaPEL39@erm.com.
Geagte Belanghebbende

Shell Namibia Upstream BV (Shell) het 'n 90% beherende aandeel bekom in Petroleum Eksplorasielisensie 39 (PEL39), geleë langs die Namibiese kus. Shell stel voor dat 'n 3D seismiese opname gedoen word in die noordoostelijke deel van die lisensiegebied, ongeveer 250km vanaf die Namibiese kus. Die opname sal ongeveer 2500km² dek en sal plaasvind in water van tussen 1300m en 2500m diep. Seismiese opnames word gedoen om die rotsformasies op die seebodem beter te verstaan en om te bepaal of die formasies olie of gas bevat.

Environmental Resources Management Southern Africa (Pty) Ltd (ERM) is deur Shell aangestel om ‘n Omgewingsimpakstudie (OIS) te doen en om die bestaande basislyn data op te dateer. Die OIS sal besonderhede bevat rakende die voorgestelde aktiwiteite sowel as ‘n bestuursplan wat voorstelle sal maak aangaande die moontlike vermindering en versagting van impakte. Vir meer inligting raadpleeg asb die aangehegde brief en Agtergrondinligtingsdokument (AID). Die AID is ook beskikbaar aanlyn by www.erm.com/namibiaPEL39 of vanaf ERM.

Indien u of u organisasie as ‘n belanghebbende en geaffekteerde party (B&GP) wil registreer en/of wil deelneem aan die proses, kontak asseblief vir Tougheeda Aspeling by ERM voor 14 Julie 2014 via epos by namibiaPEL39@erm.com.

Regards / Groete

Tougheeda Aspeling
Stakeholder Engagement Consultant / Publieke Deelname Konsultant

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Draft Notification
Figure 3.1 Notification to stakeholders

17 July 2014

Invitation to Comment


Dear Stakeholder

Shell is proposing to conduct a 3D seismic survey in the northern part of PEL 39 approximately 250km offshore of the Namibian coast. The survey would cover approximately 2,500km². Water depths in the survey area range from 1,300m to 2,500m. Seismic surveys are carried out to better understand the rock formations that are below the seabed and whether those formations hold oil or gas.

Environmental Resources Management Southern Africa (Pty) Ltd (ERM) was appointed by Shell to undertake a full Environmental Impact Assessment (EIA) and update the existing baseline studies. The draft EIA Report Update has been prepared and is available online: www.erm.com/namibia/PEL39.

The draft EIA Report Update contains details of the proposed activities and provides information on possible environmental and social impacts and specific mitigation and/or management measures to avoid/minimise these.

If you or your organisation would like to make comments on the report please submit your comments with your contact information to Tougheeda Aspling at email: namibia@PL39@erm.com. For your comments to be included in the final EIA Report Update that will be submitted to the Ministry of Mines and Energy (MME) they must be received on or before 05 August 2014.

Yours sincerely

Tougheeda Aspling
Stakeholder Engagement Consultant
Tel: 021 681 8400
Email: namibia@PL39@erm.com
Figure 3.2  Proof of notification to stakeholders

Dear Stakeholder,

Please find attached a notification letter regarding the release of the draft Environmental Impact Assessment (EIA) Report Update for the Shell Namibia Seismic Project.

The report is available online: www.erm.com/namibiaPEI39.

The report will also be made available at the following public libraries:
COMMENTS RECEIVED
This submission is made by the Namibian Large Pelagic and Hake Longlining Association, specifically because of the impact seismic airguns from oil and gas exploration are having on pole and line tuna catches in the south of Namibia. Catches have dropped from 4,046 tonnes in 2011 to 941 tonnes in 2013. Seismic exploration activity has increased significantly in Namibian waters from 2011 to the present, and has been observed by the fishing industry near the main tuna fishing grounds in the South of Namibia since 2011, in parallel with the decline in tuna catches. It is the experience of the Namibian pole and line fishing industry that the tuna go into avoidance mode when they are impacted by seismic noise, and are not available to the fishing fleet.

What appears clear is that tuna which migrates internationally is much more sensitive to seismic sound than resident fish species. The experience of the Namibian pole and line fishing fleet is that if the sound gets too intense the tuna leave the area, while resident species return after the seismic survey has finished in the area.

In the immediate past, extreme negative economic impacts have been experienced by Namibia’s pole and line tuna sector, as a result of the tuna not being available to be caught in the vicinity of seismic exploration. The tuna industry is also concerned that 3D exploration in particular has a more pronounced sound impact.

Firstly, in your summary brief to the draft EIA Report you state under the Environmental Protection section that the oil and gas industry has demonstrated the ability to operate seismic survey exploration activities in a manner that “protects marine life”. We would rephrase that and say that through your mitigation procedures such as starting your airgun blasts at lower volume levels you give marine life the opportunity to get out of the area before they are harmed by the impact of airguns at full volume. As a fisheries sector operating in Namibia’s waters, we would like to work with the oil and gas industry through research to further refine these mitigation procedures, particularly for sensitive species such as tuna.

The pole and line tuna season in Namibia runs from October to April inclusive, the height of the season being February through April. In 2012 we noted that seismic surveys occurred in 9 exploratory blocks off the central coast of Namibia. 7 of the 9 occurred between May and September, outside the albacore tuna season, and a number of these were 3D surveys. While we realise that seas are rougher during winter, negatively impacting seismic surveys, particularly 3D surveys, the 2012 scenario shows that it can still be done. Seas are rougher in the south compared to the central Namibia offshore region. Given the 3D surveys of 2012 demonstrating that they can occur in rougher water, until we understand how the impact of seismic airgun shots on tuna can be
mitigated, we ask that seismic surveys in the south operate closer to Namibia’s winter months to minimise their impact on the tuna season.

It is noted that the Shell EIA proposes to conduct the 3D seismic survey 40-50km north east of Tripp Seamount, 250 kilometres offshore of the Namibian coast. And that the survey is planned to commence in November 2014 and last approximately 50 days. It is also stated that there is also the possibility, dependent on vessel availability that the planned survey could start as early as October.

The pole and line tuna sector holds the strong view that till more is known about how to mitigate the sound impacts of seismic surveys through research, seismic testing should occur outside the albacore tuna season. In particular this research needs to concentrate on how far away seismic testing needs to be not to negatively impact pole and line tuna fishing.

However, the pole and line tuna industry is also aware that there are practical realities that the seismic surveys face, such as large waves negatively impacting 3D surveys in particular, and availability of survey vessels. In the current absence of conclusive research, a precautionary approach needs to adopted, where the tuna industry and the mining industry effectively work together, and consequently minimise negative impacts. The mining industry should not undertake seismic surveys in the south of Namibia during the height of the pole and line tuna season, and should do its best to operate in time periods as far away as possible from the height of the season. Also, on the research front, if the fishing and mining industries work together in the immediate future, particularly on the issue of the distance from the tuna migratory route and hotspots at which seismic surveys can be conducted to avoid interference with fishing, both sectors will then be able to get on with doing what they do best.

Legal and Policy Framework

In Section 3.3.3 you state that:

“The Environmental Management Act (EMA) defines an environmental impact assessment as the process of identifying, predicting and evaluating the significant effects of activities on the environment, as well as the risks and consequences of activities and their alternatives and options for mitigation, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management.

A list of activates requiring an EIA and associated Environmental Clearance Certificate (ECC) (1) was published in terms of the EMA in Government Gazette No. 29 of the 6 February 2012. Petroleum exploration is not included on the list and as such an ECC is not required.

You state that “petroleum exploration is not included on the list and as such an ECC is not required”. The requirements of the Environmental Management Act that you list above are important, and by following EMA procedures this provides a means by which environmental transparency and accountability is promoted. Petroleum exploration, including the activity of seismic exploration does impact the environment, and it does not make sense that it is excluded from the provisions of the Environmental Management Act. Consequently we obtained legal advice, and this states that you do
need to undertake an EIA and obtain an Environmental Clearance Certificate under the provisions of the Environmental Management Act Regulations.

Shell is an internationally reputable oil company and its approach should be environmentally responsible and transparent in complying with Namibian legislation.

The legal advice is as follows:

“Petroleum exploration is regulated under the Petroleum (Exploration and Production) Act 2 of 1991. Petroleum exploration is also regulated under the Environmental Management Act No. 7 of 2007 and the Environmental Impact Assessment Regulations under Government Notice No 30 of 2012. In the Government Gazette No. 4878 of 6 Feb, 2012, Government Notice No. 29 provides a list of activities that may not be undertaken without an Environmental Clearance Certificate. Under this list, petroleum exploration falls under section 3.3: resource extraction, manipulation, conservation and related activities. Petroleum is considered a resource and the exploration of this resource is considered a related activity to petroleum extraction. In addition, the process of petroleum exploration does extract and manipulate petroleum and other natural resources. Thus, petroleum exploration is included as a listed activity under section 3.3 and thus requires an environmental clearance certificate under the Environmental Management Act 7 of 2007.

When in doubt as to the intention of the Environmental Management Act or associated regulations and listed activities, it is important to refer to the principles of environmental management as laid out in section 3 of the Environmental Management Act 7 of 2007. These principles are meant to serve as to “guide the implementation of this Act and any other law relating to the protection of the environment” [Environmental Management Act 7 of 2007, Section 3(1)(a)]. Under these principles listed in section 3 of the Environmental Management Act, No. 7 of 2007, “renewable resources must be used on a sustainable basis for the benefit of present and future generations” and “damage to the environment must be prevented and activities which cause such damage must be reduced, limited or controlled.”

The purpose of the Environmental Management Act and therefore the issuing of or denying of Environmental Clearance Certificates is to ensure that “significant effects of activities on the environment are considered in time and carefully” [Environmental Management Act, section 2(a)]. A “significant effect” is defined under the Environmental Management Act to include any activity that may likely have a consequential qualitative or quantitative impact on the environment including changes in ecology, or economic and social factors. Since petroleum exploration may likely have a consequential impact on ecology, economic or social factors, it is required that these potential impacts be considered in time and carefully. This is another reason why petroleum exploration is incorporated as a listed activity under resource extraction, manipulation and related activities (Government Gazette No. 4878 of 6 Feb, 2012, Government Notice No. 29, section 3.3).

Thus, in addition to being regulated under the Petroleum (Exploration and Production) Act 2 of 1991, petroleum exploration is in fact regulated under the Environmental Management Act and does require an environmental clearance certificate, as it falls under listed activity 3.3. In terms of the Environmental Management Act section 31 (1), a competent authority may not issue an
authorisation unless the proponent has obtained an environmental clearance certificate in terms of the Environmental Management Act. Any authorisation issued without an environmental clearance certificate is automatically deemed invalid under section 31(2) of the Environmental Management Act 7 of 2007.”

**Socio-Economic Baseline**

In 2011 a total of 4046 tonnes of tuna was caught utilising 39 vessels. Because the tuna disappeared during the height of the season during February 2011, attributed by fishermen to nearby seismic exploration, fishing vessel numbers, particularly those coming from South Africa during 2012 dropped. The result was that only 1822 tonnes of tuna was caught during 2012 by 26 vessels. This drop in catches, together with ongoing seismic exploration during the pole and line tuna season close to fishing grounds, further discouraged South African vessels from making the trip to Namibian waters, and in 2013 a total of only 941 tonnes was caught, vessel numbers involved in the fishery dropping to a low of 9.

The ongoing threat of seismic exploration disrupting the Namibian pole and line tuna fishery, is consequently keeping South African vessels away. This is having negative economic impacts on the town of Luderitz, from which the fishery operates, as well as jobs. A vessel has around 20 crew, so in 2011 when there were 39 vessels, total crew employment would have been approximately 780. This dropped to around 520 crew employed in 2012, and only 180 in 2013.

The Large Pelagic Fishing Association attributes this drop to the uncertainty caused by seismic survey impacts on tuna catches which has had a significant negative economic impact on the fishery. Many vessels simply are not willing to join the fishery for fear of making economic losses due to seismic impacts disturbing the fish. It is for this reason the Large Pelagic and Hake Longlining Association needs a moratorium on seismic exploration during the tuna season of October to April, to bring commercial certainty for vessels so that they know fishing will not be disrupted by seismic exploration. Only once research has been effectively undertaken to assess how far away seismic exploration can occur without impacting tuna catches, will fishermen have peace of mind that seismic exploration and tuna fishing can occur in the same vicinity together.

**Stakeholder Engagement**

It is noted from your EIA report that initial Government stakeholder engagement has involved officials from the Ministry of Mines and Energy as well as officials from the Environmental Commissioners Office of the Ministry of Environment and Tourism.

We would also recommend that you consult with officials from the Ministry of Fisheries and Marine Resources who is the Government Agency heading up the Inter Ministerial Seismic Taskforce. To date the Large Pelagic and Hake Longlining Association as well as the Benguela Current Commission have also had representatives attending Seismic Taskforce meetings. There is the possibility, and we would welcome this, that Shell could jointly discuss the EIA with key stakeholders at a specially
arranged Taskforce Meeting, to take things forward in a positive manner. Alternatively, discussions could be had between Ministry of Fisheries and Marine Resources scientists, the fishing industry including tuna skippers, and Shell to advance joint research on mitigating seismic sound impacts on tuna.

**Impact Assessment**

Your EIA states that as the proposed survey area covers an insignificant area of fishing grounds available to the fishery and the timing of the survey (the survey is planned to commence mid-October) falls outside of the peak fishing periods (i.e. January to March), the impact is expected to be NEGLIGIBLE.

Our concern is that your 3D survey would produce more intense sound than a 2D survey, and it is this sound that we are concerned will put the tuna into avoidance mode, or worse still, scare it into accelerating its migratory path beyond Namibian waters, as has occurred in recent years.

You also state in the report that in water depths of 25-50m airgun arrays are often audible to ranges of 50-75km, and with efficient propagation conditions such as experienced on the continental shelf or in deep oceanic water, the distance over which sound can be detected can exceed 100km and 1,000km, respectively (Bowles et al. 1991; Richardson et al. 1995; see also references in McCauley 1994).

You state that the Shell survey is around 50km north east of the pole and line tuna sectors main fishing grounds at Tripp Seamount. Based on the statement above by Bowles et al., we are concerned that the tuna fishery at Tripp Seamount could be disrupted for at least the full length of the 50 day Shell survey.

For a fishing vessel, one month of being excluded from a possible good fishing area could mean revenue losses of hundreds of thousands of Namibia dollars, and potentially cause the vessel to make a commercial loss rather than a profit for the fishing season. 50 days is closer to two months, and a blockage of this length of time from a main fishing ground represents 28.5% of potential fishing time for pole and line tuna vessels (based on a 7 month fishing season as tuna is a migratory species).

With regards behavioural avoidance, your report states that the potential impact of seismic sounds on the behaviour of large migratory pelagic fish is considered to be of medium magnitude (particularly within 5 km of the airgun array), over the short-term with duration of the effect being equal to the duration of exposure, although these vary between species and individuals, and are dependent on the properties of the received sound. Observed effects may extend beyond the survey area, but are unlikely to persist for more than a few days after termination of airgun use. Consequently you state that it is considered to be of MINOR significance without mitigation.

The Australian Southern Bluefin Tuna fishery catches dropped significantly when there was seismic exploration close by, and the tuna was spotted again hundreds of kilometres away from where it normally is. The Australian Centre for Scientific and Industrial Research had been tracking the tunas
for many years and until this seismic exploration event, the tuna had always followed the same migratory path. The following tuna season the seismic exploration company, after discussions with the Australian tuna industry, undertook its survey outside the tuna migratory window, the fish returning to their normal migratory route, and catches were good.

**Impact on Fishing Activities**

The EIA report states that the impact on pelagic fish is expected to “minor”, for a period of 5-14 days.

The seismic survey is approximately 50 kilometres North West of Mount Tripp, the main tuna aggregating grounds in the south of Namibia.

In the above map, seismic surveys are overlaid over the tuna fishing hotspots. Albacore tuna tend to follow underwater contours between the depths of 400 and 1000 metres.

Hotspot areas north of Tripp Seamount (southern most hotspot) are only of real significance when there are no seismic activities.

With seismic activity fishermen have generally observed that if it is close enough to disturb the tuna, depending on the intensity the fish generally do one of two things, either: swim off, not to be seen again that fishing season; or tend to dive into deeper water, staying there for days, out of the reach of fishing gear.

During 2010/11 the tuna catch season which started in October 2010 was a good one, but according to skippers involved, could have been much better. When the seismic activity started in February of 2011, the fish scattered and were not seen again that season. This is what the Namibian tuna sector
fear as it is definitely not a minor event. Depending on when it occurs during the fishing season, it can significantly reduce the length of the tuna season, with resultant “moderate” to “major” negative economic impact on the tuna vessels involved. The tuna season, cut short in February 2011 during the height of the catching season, in normal circumstances would have extended to the end of April at least. In the case of the Murphy Oil 3D Survey in April and May 2014 (finishing early June) in areas 2613A&B off Luderitz, with the introduction of a second survey vessel during April, the tuna suddenly disappeared from these areas, not to return. Fishing had been good, and in this case the season could have extended into May in these areas.

In the second scenario where the fish dives as an escape response to the seismic blasts, fishermen have learnt to live with this, waiting a number of days for the tuna shoals to resurface, when they are again catchable.

**Fisheries Study prepared by CapFish**

As background perspective on seismic surveys:

![History of Seismic Acquisition in Namibia](image)

*Source: Ministry of Mines and Energy*

In the above table, Series 3 refers to 3D seismic surveys and Series 2 to 2D seismic surveys. This graph refers to all seismic surveys occurring in Namibian waters, and not just the south, but the increasing trend is obvious.
Seismic Surveys in Namibia’s Southern Waters

Source: Ministry of Mines and Energy

The above table shows the increase in number of surveys in Namibia’s southern waters between 2009 and 2012.

By comparison, below is the data for catches of Albacore Tuna caught by pole and line vessels. This data was obtained from the Ministry of Fisheries and Marine Resources (MFMR), and then refined by the Large Pelagic and Hake Longlining Association, removing any catches caught by vessels outside the tuna pole and line fleet. While MFMR does not set total allowable catches for albacore tuna caught in Namibian waters, the International Commission for Conservation of Atlantic Tunas (ICCAT) does. The catch data could be added to Table 3.2 in the Fisheries Study which currently excludes albacore tuna.

Annual Catches of Albacore Tuna by Pole and Line Vessels in Namibian Waters in Tonnes

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<td>2013</td>
<td>941</td>
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Based on the Ministry of Mines and Energy graph covering seismic activity in Namibia’s southern waters from 2009 to 2012, activity relatively speaking was low in 2009. During that year catches were good. In 2010 MFMR implemented fishing conditions requiring a 90% Namibian crew compliment on charter vessels, and 50% value addition on all landings. Many of the pole and line vessels fishing in Namibian waters are from South Africa, and consequently in 2010, most did not come to Namibia. Catches were good, though, for the vessels fishing. Because of the significant reduction in vessels fishing during 2010, MFMR lifted the restrictions in 2011, and vessels returned in numbers. Catches were good in 2011, but seismic activity increased that year too. Fishermen say, however, that in the 2010/2011 tuna season catches were good, but when seismic surveys started in February 2011, the tuna scattered and were not seen again that season.

In the 2012 calendar year, however, catches dropped by over half. The Ministry of Mines and Energy graph shows a significant increase in seismic activity that year. In January to March 2012, there was seismic activity immediately over Tripp Seamount. Then in October 2012 to March 2013, there was seismic activity in one block very close to Tripp Seamount just over the South African border.

In 2013 the catches halved again. Seismic activity in Namibian waters dropped that year presenting mixed signals. However, this can be explained by ongoing seismic activity in two blocks, just over the South African border, near to Mount Tripp. Between the two blocks, seismic activity ran from October 2012 to May 2013.

We note the Fisheries Study with regards tuna pole and line fishing based on the scientific assessment undertaken by ICCAT in 2013 for the south Atlantic albacore (southern stock) suggests that: “in 2012, the estimated South African and Namibian catch was below the average of the last five years”. While the different stock assessment models attempted to explain why, what appears not to have been taken into account is the impact of seismic surveys which occurred in both countries at that time.

Overview of recent seismic surveys off the coast of Namibia and South Africa (18 months)
Seismic Surveys on the Southern African West Coast Jan 2012- Aug 2013

SEISMIC SURVEYS UNDERTAKEN

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</table>

Source: CapFish SA (Pty) Ltd.

Conclusion

The Large Pelagic and Hake Longlining Association is most concerned by the impact seismic sound from airguns is having on tuna caught by the pole and line fishing method. These are seasonal, highly migratory tunas and not resident fish. From the Association’s experience they are highly sensitive to seismic sound. Since 2011 seismic exploration activity has increased significantly in Namibian waters. Catches of pole and line tuna have dropped from 4046 tonnes in 2011 to 941 tonnes in 2013. One main cause for this is that pole and line vessel economic viability dropped significantly with the tuna in seismic avoidance mode, vessels involvement in the fishery dropping from 39 in 2011 to only 9 in 2013.

The Association has requested through Namibia’s Inter-Ministerial Seismic Taskforce that a moratorium be put in place so that seismic surveys do not occur during the pole and line migratory tuna season months of October through April; to date this has not been adhered to. Consequently many vessels have been too scared to enter the fishery for fear of financial losses. The Association would like this uncertainty removed through adherence to the proposed moratorium, while research establishes just how far away seismic surveys need to be for the tuna not to be disturbed. If a moratorium over this full time period is not possible, good communication and research cooperation on the impact of seismic sound will go a long way towards resolving the issue.

The height of the tuna season generally speaking is a significant build up of fish during December and January, with a peak during February, March and April, reducing during May. While tuna catches are lower at the start of the season from October through November, there is a serious concern by
the fishing industry that in the early months while the migration builds, seismic surveys could divert
the migration, the shoals of fish potentially immediately rerouting to international waters.

It is noted that the proposed Shell seismic operations will be located approximately 40-50 km
northwest of Tripp Seamount, where the tuna pole and line vessels will be fishing. Given that tuna
generally follow depth contours of between 400 and 1000 metres, and that the Shell survey will be
between 1300 and 2500 metres, we are hoping that any seismic sound impact will tend to scare the
fish closer to Namibia’s coastline where they will remain catchable, and not encourage the fish to
swim into international waters.

Consequently the tuna fishing industry would like the Shell survey to start as early as possible during
September or October, so that the survey is over by the time fish catches start increasing during
December and January.

There is also the issue of better understanding the impact of seismic airgun shots in shallow versus
deeper water. We understand and hope that given your survey being in deep water, the sound
impact will be less. However, as the sound moves into shallower water, we would like to understand
how that impacts the fish.

The seismic exploration sector as well as the pole and line tuna sector, in co-operation with Ministry
of Fisheries and Marine Resources scientists, need to formally work together to achieve the
necessary research needed.

The Namibian Large Pelagic and Hake Longline Association views seismic sound as a negative impact
on the marine environment, and should not have to carry the cost of what is an inadvertent
outcome of seismic sector exploration.

Section 95(l) of the Constitution of Namibia states that the Government of Namibia must maintain:

"...ecosystems, essential ecological processes and biological diversity of Namibia and utilization of
living natural resources on a sustainable basis for the benefit of all Namibians, both present and
future."

Seismic exploration is having a disruptive effect on the marine ecosystem, particularly impacting
migratory species. It is the responsibility of the seismic exploration companies to responsibly deal
with this issue through working co-operatively with the fishing industry, and undertake research to
solve the situation jointly with Government scientists. In the meantime, Government with its
Constitutional responsibility should also be party to the process of facilitating an agreement
between the seismic exploration and tuna fishing sectors to establish effective research and
promote as little disruption as possible to the tuna fishery during the tuna migratory window.

With regards communication, the contact person is:

James Van Zyl
Secretary
Namibian Large Pelagic and Hake Longlining Association
PO Box 5232
Walvis Bay
Namibia
Email: info.largepelagicnamibia@gmail.com
Fax: +264-64-209099
Mobile tel.: +264-81-1288560.

Additional contact points are:

Matthew Hambuda
Chair Person
Email: matthew.possessions@gmail.com
Mobile tel.: +264-81-1281470

Kurt Laufer
Marco Fishing CEO
Email: kurtl@marcofishing.com.na
Mobile tel.: +264-81-1292055

David Russell
David Russell Fisheries Consultancy (undertaking seismic facilitating work on behalf of the Large Pelagic and Hake Longlining Association)
Email: davelin@iway.na
Mobile tel.: +264-81-2335748

We thank you for this opportunity to comment on your EIA, and look forward to constructive communication so that both the seismic exploration and fisheries sectors can operate co-operatively in the future through working out ways to avoid adverse seismic impacts.
Tougheeda Aspeling

From: Anja Kreiner <akreiner@mfmr.gov.na>
Sent: 21 July 2014 12:09 PM
To: Tougheeda Aspeling

Thank you very much for the link to the EIA.

Annexes 1 to 3 cannot be downloaded yet, when will these be available?

Regards
Anja

****************************************************************

Anja Kreiner
Subdivision Environment
National Information and Research Center
P.O. Box 912
Swakopmund, Namibia
Tel: +264 (0)64 410 1000 (switchboard)
+264 (0)64 410 1158 (direct line)
Fax: +264 (0)64 40 4385 or +264 (0)64 406784
e-mail: akreiner@mfmr.gov.na, a_kreiner_2000@yahoo.com

****************************************************************

From: Tougheeda Aspeling [mailto:Tougheeda.Aspeling@erm.com]
Sent: 17 July 2014 15:11
To: Tougeeda Aspeling

Dear Stakeholder

Please find attached a notification letter regarding the release of the draft Environmental Impact Assessment (EIA) Report Update for the Shell Namibia Seismic Project.

The report is available online: www.erm.com/namibiaPEL39.

The report will also be made available at the following public libraries:

<table>
<thead>
<tr>
<th>Windhoek</th>
<th>Swakopmund</th>
<th>Luderitz</th>
<th>Walvis Bay</th>
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<td>Tel. 061-22-4899</td>
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<td>Tel. 063-31-2444</td>
<td>Tel. 064-20-5981</td>
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</tbody>
</table>
For your comments to be included in the final EIA Report Update that will be submitted to the Ministry of Mines and Energy (MME) they must be received on or before **05 August 2014**.

Regards

**Touheeda Aspeling**  
Stakeholder Engagement Consultant / Publieke Deelname Konsultant

**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 | **E** namibiaPEL39@erm.com W www.erm.com/namibiaPEL39

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This email is free from viruses and malware because avast! Antivirus protection is active.

This email is free from viruses and malware because avast! Antivirus protection is active.
Dear Tougheeda

Thanks very much for the notification.

I will get back to you with comments.

Best regards
Dave Russell
Mobile tel.: +264-81-2335748
For the Namibian Large Pelagic and Hake Longlining Association

Dear Stakeholder

Please find attached a notification letter regarding the release of the draft Environmental Impact Assessment (EIA) Report Update for the Shell Namibia Seismic Project.

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Regards

Tougheeda Aspeling
Stakeholder Engagement Consultant / Publieke Deelname Konsultant

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2nd Floor | Great Westerford | 240 Main Road | Rondebosch | 7700 | Cape Town | South Africa
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Please visit ERM’s web site: http://www.erm.com
Appendix E

Comments and Response Report
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<th>Ref.</th>
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<th>Comment Type</th>
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<th>Category</th>
<th>Comment</th>
<th>Response</th>
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<tbody>
<tr>
<td>1</td>
<td>Edosa Omoregie</td>
<td>Email</td>
<td>26 June 2014</td>
<td>University of Namibia</td>
<td>Registration</td>
<td>Good day. This is to acknowledge the receipt of your email on the above subject matter. The Sam Nujoma Marine and Coastal Resources Research Centre Coastal Resources Research Centre (SANUMARC) of the University of Namibia is indeed an interested party and we will therefore like to register as an Interested and Affected party.</td>
<td>Thank you for your interest. We have registered you on our database as an Interested and Affected Party. As such you will receive all further relevant notifications regarding the proposed project.</td>
</tr>
<tr>
<td>2</td>
<td>Ben van Zyl</td>
<td>Email</td>
<td>25 June 2014</td>
<td>South East Atlantic Fisheries Organization</td>
<td>Location of Survey Area</td>
<td>Dear Sir, thank you very much for the information. As the Executive Secretary of the South East Atlantic Fisheries Organization I would request you to be more specific on the location of the proposed survey area. I do assume that the area is located with the EEZ of Namibia.</td>
<td>The 3D seismic survey will cover an area in the eastern part of Petroleum Licence Area 39 (PEL 39) and adjacent areas. PEL 39 [hereunder referred to as the ‘Survey area’] comprises Blocks 2913A and 2914B (Refer to Figure 2.1 in the EIA report). The entire license area covers 12,399 km² with water depths ranging from 1300m to 2500m. The nearest settlement to the license area is Oranjemund (~150 km to the east). The 3D survey would cover an area of approximately 2,500 km² and extend partially into the neighboring block (see Figure 2.1). Shell has negotiated with the neighboring licence holder to obtain permission to survey in their blocks. The distance of the centre of the survey area to Luderitz is approximately 300 km to the northeast and approximately 685 km to Walvis Bay to the north northeast. The boundary coordinates of the licence area and the 3D survey area are provided in Table 2.1.</td>
</tr>
<tr>
<td>3</td>
<td>Anja Kreiner</td>
<td>Email</td>
<td>30 June 2014</td>
<td>Ministry of Fisheries and Marine Resources</td>
<td>Registration</td>
<td>Please register as I&amp;AP me for the Proposed Oil and Gas Exploration Activities in the Deepwater Petroleum Exploration 39 (PEL 39) Offshore of Namibia. I am representing the Ministry of Fisheries and Marine Resources.</td>
<td>Thank you for your interest. We have registered you on our database as an Interested and Affected Party. As such you will receive all further relevant notifications regarding the proposed project.</td>
</tr>
<tr>
<td>4</td>
<td>Hein van Cale</td>
<td>Email</td>
<td>30 June 2014</td>
<td>Ministry of Environment &amp; Tourism</td>
<td>Environmental Authorization</td>
<td>With reference to the Namibian EIA Regulations, it is recommended that you apply for a Clearance Certificate for your EIA prior to embarking on the process.</td>
<td>Thank you for your interest in Shell Namibia exploration project. Environmental Impact Assessment (EIA) process. Your comment that Shell needs to apply for a Clearance Certificate for the EIA prior to commencement of the proposed activities refers. We have reviewed the requirements of the Environmental Impact Assessment Regulations (1996) and the List of Activities That May Not Be Undertaken without Environmental Clearance Certificate (2008) and confirmed the proposed activities do not fall under the listed activities. However, Shell is required to conduct an Environmental Impact Assessment (EIA) and receive a Clearance Certificate prior to commencing the proposed activities. The Petroleum (Exploration and Production) Act (No. 2 of 1991) requires that an estimate of the affect of the proposed exploration operations may have on the environment is undertaken as part of the exploration licence application process. Baseline scientific studies and full EIAs for proposed seismic activities were conducted over the full licence area to meet these requirements. These studies and EIAs were done by Signet Petroleum Ltd (2011) and Spectrum (2012). Both these applications to proceed were approved by the Ministry of Mines and Energy (MME). Shell is currently undertaking a process to update the EIA to cover a seismic survey proposed for 2014. The process which we are following includes a full review of the proposed activities, update to specialists studies (including studies of fishing and marine fauna), and update to the detailed impact assessment process. The programme includes notification to stakeholders and the general public that the EIA is being updated, a registration period, and disclosure.</td>
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**Table 1** Comments and Responses Report (Initial Notification Period)
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<tr>
<td>5</td>
<td>Rod Brady</td>
<td>Email</td>
<td>06 July 2014</td>
<td>NACOMA</td>
<td>Engagement</td>
<td>Thank you for your interest. We have registered you on our database as an interested and affected party as such you will receive all further relevant notifications regarding the proposed project. Please do let us know should you have any comments or queries.</td>
</tr>
<tr>
<td>6</td>
<td>Bronwen Currie</td>
<td>Email</td>
<td>06 July 2014</td>
<td>Ministry of Fisheries and Marine Resources</td>
<td>Engagement</td>
<td>Thank you for your interest. We have registered you on our database as an interested and affected party as such you will receive all further relevant notifications regarding the proposed project. Please do let us know should you have any comments or queries.</td>
</tr>
<tr>
<td>7</td>
<td>Hein Van Clee</td>
<td>Email</td>
<td>09 July 2014</td>
<td>Ministry of Environment &amp; Tourism</td>
<td>Environmental Authorization</td>
<td>In case you should require an Environmental Clearance Certificate of your EIA report for the proposed seismic survey, please apply as stipulated in the EIA Regulations, 2012. The EIA Regulations section 3.1 mentions only the Mineral and Mining Act 1992 and not the Petroleum Act of 1991. Common sense suggests that this is an unfortunate omission in the Regulations to be corrected in the current revision of the Regulation. Thanks for pointing out this omission to us. Please consider the Environmental Management Act 2007, section 3 (2) (e) in your further EIA activities in Namibia. Thank you. This is noted.</td>
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We hope this response adequately addresses your feedback. Please do not hesitate to contact us should you have any further comments or queries.
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<th>Ref.</th>
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</thead>
<tbody>
<tr>
<td>7</td>
<td>Mr Jason Burgess</td>
<td>Email</td>
<td>15 July 2014</td>
<td>Tuna 3 JV</td>
<td>Regulations</td>
<td>I have only seen correspondence of your activity yesterday. I am operating a tuna poling vessel from Luderitz Harbour and will fish in the area where your vessel is planned to conduct the survey. Please register my company as an Interested and Affected party.</td>
<td>Thank you for your interest. We have registered you on our database as an Interested and Affected Party as such you will receive all further relevant notifications regarding the proposed project.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Ms Anja Kreiner</td>
<td>Email</td>
<td>21 July 2014</td>
<td>National Marine Information and Research Centre (NATMIRC)</td>
<td>Availability of Annexures to EIA Report</td>
<td>Thank you very much for the link to the EIA. Annexes 1 to 3 cannot be downloaded yet, when will these be available?</td>
<td>Please note that all three annexures for the draft Environmental Impact Assessment Report Update for the proposed Shell Namibia 3D seismic survey project in the PEL 39 license area have been made available online: <a href="http://www.erm.com/namibiaPEL39">www.erm.com/namibiaPEL39</a>. This includes the Final Fisheries Specialist Report, the Final Marine Fauna Specialist report and the Marine Mammal Recording Form to be used to monitor marine mammal interactions during operations.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Dr Dave Russell</td>
<td>Email</td>
<td>23 July 2014</td>
<td>Namibian Large Pelagic and Hake Longlining Association</td>
<td>Availability of Annexures to EIA Report</td>
<td>Please could you email me the Fisheries Specialist study. While I can access most of the EIA document on the link below, I cannot access the annexures.</td>
<td>As requested, please find attached the Final Fisheries report for the proposed Shell Namibia 3D seismic survey project in the PEL 39 license area. This report and the Final Marine Fauna Report have also been made available online: <a href="http://www.erm.com/namibiaPEL39">www.erm.com/namibiaPEL39</a>.</td>
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### Table 3 Comments and Responses Report (Response to the Namibian Large Pelagic and Hake Longlining Association)

<table>
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<th>Ref.</th>
<th>Name</th>
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<th>Organisation</th>
<th>Category</th>
<th>Comment</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Dr Dave Russell</td>
<td>Letter</td>
<td>31 August 2014</td>
<td>Namibian Large Pelagic and Hake Longlining Association</td>
<td>Impact of seismic surveys on tuna catches</td>
<td>This submission is made by the Namibian Large Pelagic and Hake Longlining Association, specifically because of the impact seismic mitigation from oil and gas exploration activities on pole and line tuna catches in the south of Namibia.</td>
<td>Detailed responses to each of the Namibian Large Pelagic and Hake Longlining Association comments are provided below. These responses are taken from information contained within the EIA report and additional input from fisheries specialists.</td>
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</table>

11. This submission is made by the Namibian Large Pelagic and Hake Longlining Association, specifically because of the impact seismic exploration from oil and gas exploration activities are having on pole and line tuna catches in the south of Namibia.

Thank you for your submission as part of the EIA process. The Namibian Large Pelagic and Hake Longlining Association was identified as an Interested and Affected Party at the beginning of the EIA and has been kept informed throughout the process. The impact of seismic noise is the subject of this EIA.

This EIA outlines a detailed mitigation plan to manage the impact of the seismic operations.


catches have declined from 4,940 tonnes in 2011 to 941 tonnes in 2013. Seismic exploration activity has increased significantly in Namibian waters from 2011 to the present, and has been observed by the fishing industry near the main tuna fishing grounds in the South of Namibia since 2011, in parallel with the decline in tuna catches.

The EIA study included an assessment of the potential impacts of the proposed activities specifically on pole and line tuna fishing. The EIA specifies a number of mitigations that Shell will implement to avoid or minimise effect on fish and on fishing activities. The most significant mitigation action is the scheduling of the survey outside the peak fishing months to a period where pole and line fishing effort is very low. In addition, the survey will occur approximately 40 km away from Tripp Seamount. The survey vessel as well as support vessels will not traverse the Tripp Seamount area.

Regarding the long-term effect of seismic surveys on tuna catch, there is no empirical evidence of a direct relationship between seismic survey noise and pole and line tuna catch.

In Namibia, offshore 2D seismic surveys have been conducted since 1968. Since 1993 when the first 3D survey was conducted, surveys have been carried out almost every year (1993, 1995, 1996, 1997, 1998, 2001, 2003, 2006, 2012, and 2013). The number of surveys conducted each year has varied.

In 2009, 4,940 tonnes of tuna were caught. This was the highest amount of tuna landed since the beginning of the pole and line fishing industry in Namibia. During that year’s fishing season, a 2D seismic survey was conducted in Block 274 overlapping a tuna fishing ‘hotspot’ (as identified in your letter). The following year (2010) the catch rate halved with only 2,096 tonnes of tuna being caught. The only seismic survey in the southern area in that year was conducted within Blocks 2815 and 2816, about 100 nautical miles from Tripp Seamount, but closer to the fishing hotspot to the north. There were a number of surveys conducted in 2011, some in the area where the tuna migrate. Tuna catch increased again in 2011 to 4,046 tonnes. In 2012, catch declined to 1,822 tonnes. During this year seismic surveys were conducted in Blocks 2411 and 2511, some 100 nautical miles away from the most northerly tuna fishing hotspot. The drop in catch is related to fewer vessels operating. It is therefore logical to assume that fishing success rates is linked to the number of vessels in operation.

Interpretation of statistics associated with reported tuna catches in Namibia should also be viewed with extreme caution. The National Marine Information and Research Centre (Natmirc) have provided the fisheries assessment team with the exact locations of effort. The data are consistent with the distributions indicated in Namibian large pelagic association review (D. Russell). Natmirc have provided the fisheries assessment team with the exact locations of effort. The data are consistent with the distributions indicated in Namibian large pelagic association review (D. Russell). Data from NatMirc show that in 2009 only 16% was landed by Namibian boats, in 2010 = 3%, in 2011 = 1%, in 2013 = 4% (2015 = 49%). The data is inconsistent with the Russell review because the catches of RSA boats are not reflected if we assume the number of boats reported are correct then the catch per boat in 2013 was 104.7 t, in 2012 was 104.7 t (104.7 t in 2012), in 2011 was 104.7 t, in 2010 was 104.7 t, in 2009 was 104.7 t, in 2013 was 76.56 (in part of 149.4 t not 491). We should be careful using these stats to interpret tuna abundance and responses to seismicity. The overlap between years of data is also problematic. RSA boats chose not to fish in Nam waters when the new legislation came into effect. While seismicity may have had some influence the biggest factor has been the non-availability of the RSA fleet. Catch per vessel effort (CPUE) is the key factor and by boat performance is critical and would require standardisation of the statistics to remove bias.
Fish behaviour in response to noise is not well understood. Sound pressure levels that may repel some species, may attract others. In fish, physical damages to the hearing apparatus rarely lead to permanent changes in the detection threshold (permanent threshold shift, PTS). However, temporary hearing loss may occur at close ranges to the source. The sound intensity is an important factor for the degree of hearing loss, as is the frequency, the exposure duration, and the length of the recovery time.

The sea has background noise that is generated by both natural sources (wind, rain, etc.) and ongoing maritime activities (such as geophysical surveys, large merchant vessels, tankers, etc.). Shipping is one of the most dominant and constant sources of man-made noise. The effect of seismic surveys on fish is strongly related to their life cycle stage. Fish eggs and larvae of many fish species are found close to the upper sea surface and thus their spatial movements are determined by ocean and tidal currents. Adult and juvenile fish are rarely affected by seismic operations. Fish can detect seismic sound sources at large distances (up to 30 km). Alarm responses are expected in the order of minutes, depending upon their threshold and the sound transmission loss (Nakken, 1992). The effects on the fish themselves appear to be short-lived, possibly only for the actual duration of the exposure. The temporal movement of fish out of the affected area is expected to have insignificant effects on stock distribution, in attendance and distribution are also to account. The EIA evaluated the potential direct effect of seismic survey activities on fish. Behavioural responses to impulsive sounds are described in detail (up to 600 km). Responses identified include leaving the area of the noise source (Suzuki et al. 1980; Dalen and Rakness 1985; Dalen and Kinner 1987; Jakobsen 1991; Skalski et al. 1992; Løkkeborg and Soldal 1993; Engås et al. 1996; Wardle et al. 2001; English and Løkkeborg 2002; Hassel et al. 2004; and changing depth distribution and feeding behaviour (Chapman and Hawkins 1969; Dalen 1973; Pearson et al. 1992; Skalski et al. 1995; Wardle et al. 2001). These behavioural responses are expected to be observed at distances of up to 5 km from the firing array (Hassell et al. 2004).
What appears clear is that tuna which migrate internationally is much more sensitive to extreme negative economic impacts have been experienced by Namibia's pole and line species return after the seismic survey has finished in the area. In the immediate past, fishing fleet is that if the sound gets too intense the tuna leave the area, while resident seismic sound than resident fish species. The experience of the Namibian pole and line tuna sector, as a result of the tuna not being available to be caught in the vicinity of seismic exploration.

Avoidance responses have been observed in pelagic fish and fish staying close to relative smooth and featureless sea bottom (Champan and Hawkins, 1969; Engas et al., 1996; Slotte et al., 2004), whereas fish associated with underwater structures (e.g., reefs, rock pinnacles or seamounts) tend to be more stationary and are less likely to disperse (Skalski et al., 1992; Hirst and Rodhouse 2000; Slotte et al. 2004) and echo surveys revealed that some fish move into deeper water (Riggs et al., 1996). The study indicated however that fish returned within a couple of days. An overview study by Gausland (2003) looked at six studies of seismic impacts on fish and concluded that fish avoidance behaviour generally occurred within 2 km of the sound source. In addition to this, Gausland acknowledged that the studies had been mostly conducted in close cooperation with fishermen in these areas. As such, he concluded that the interpretation of the results ‘in some cases showed a bias towards the fishermen assumption rather than a more neutral conclusion of the often very vague data’.

The potential impact is discussed in Section 8.5.4 of the EIA report. The impact is considered to be short-term, and of small spatial scale, varying somewhat between species and individuals and dependent on the properties of the received sound. Observed effects may extend beyond the survey area, but are unlikely to persist for more than a few days after termination of airgun use. In some cases, behaviour patterns return to normal within minutes of commencement indicating habituation to the noise. The potential impact on fisheries was determined to be minor with the implementation of mitigations. Furthermore, the impact of changing catch rates due to behavioral avoidance of fish in and around survey areas was also assessed to be minor with the implementation of mitigation measures (Section 8.5.9 of the EIA report).
Fishing can detect seismic source sounds at large distances (up to 30 km) yet they seldom react to the sound before it is above a certain threshold. Alarm responses are expected up to 5 km from the seismic array, depending upon their threshold and the sound transmission loss (Nachamkin, 1982). To avoid the sound, adult fish swim away from the sound source. Based on the literature, it is largely unclear as to whether or not the fish will swim into deeper water or horizontally away from the sound. Studies on behavioral changes in fish swimming fish exposed to air gun sounds have also been carried out in offshore settings. The vertical distribution of Merlangius merlangus was found to change in deeper waters during a seismic survey (Chapman and Hoviksen 1980). Sebastes spp. and Micromesistius poutassou (blue whiting) were found to swim deeper in periods with seismic air gun-shooting than during periods without shooting (Skalski et al. 1992; Roten et al. 2000). Horizontal movements away from seismic survey areas have been observed in both demersal (Engås et al. 1996) and pelagic (Batte et al. 2004) species. Review work by Turnpenny & Nashodd (1998) indicates that there are two general types of fish avoidance towards seismic sound—demersal fish will dive vertically towards the bottom or into deeper waters and pelagic fish will swim horizontally away from the sound source. Taking all of these factors and others into account (e.g., distance from Tripp Seamount, distribution of the resource, duration of the project), the EIA determined that the impact of changing catch rates due to behavioral avoidance of fish in and around survey area was considered to be of minor significance (Section 8.5.9 of the EIA report).
It is noted that the Shell EIA proposes to conduct the 3D seismic survey 45/08km north west of Tripp Seamount, 250 kilometres offshore of the Namibian coast. And that the survey is planned to commence in November 2014 and last approximately 50 days. It is also stated that there is also the possibility, dependent on vessel availability that the planned survey could start as early as October.

The pole and line tuna sector holds the strong view thatShell more is known about how to mitigate the sound impacts of seismic surveys through research, seismic testing should occur outside the albacore tuna season. In particular this research needs to concentrate on how far away seismic testing needs to be not to negatively impact pole and line tuna fishing.

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However, the pole and line tuna industry also notes that there are practical conditions that the seismic surveys face, such as large waves negatively impacting 3D surveys in particular, and availability of survey vessels. In the current absence of conclusive research, a precautionary approach needs to adopted, where the tuna industry and the fishing industry effectively work together, and consequently minimize negative impacts.

The mining industry should not undertake seismic surveys in the south of Namibia during the height of the pole and line tuna season, and should do its best to operate in time periods as far away as possible from the height of the season. Also, on the research front, if the fishing and mining industries work together in the immediate future, particularly on the issue of the distance from the tuna migratory route and hotspots at which seismic surveys can be conducted to avoid interference with fishing, both sectors will then be able to get on with doing what they do best.

We therefore welcome the initiative that precedes the announcement of this survey, the precautionary approach toward the development of a proposal, which the various stakeholders, including Shell and the various petroleum companies, could support in a number of ways. In this way, the initiative is bigger than a commitment from Shell, and is expanding the framework of cooperation between the respective stakeholders, so that everyone can combine their energy towards improving scientific knowledge. We are willing to play a positive part in this and are actively building positive enduring relationships with the respective institutions and stakeholders.

The decision to start the survey in theNovember season is indeed aimed at managing worker safety risk and to acquire quality seismic data during the optimal period for weather and sea state conditions. Furthermore, the mining industry also considered presence of marine mammals. The highest incidence of cetaceans within the survey area is expected during winter months, from May to November. The proposed timing of the survey is outside of the peak fish catch months of January to March. The survey timing balanced all these factors.

Regarding a research programme, we look forward to the development of a proposal, which the various stakeholders, including Shell and the various petroleum companies, could support in a number of ways. In this way, the initiative is bigger than a commitment from Shell, and is expanding the framework of cooperation between the respective stakeholders, so that everyone can combine their energy towards improving scientific knowledge. We are willing to play a positive part in this and are actively building positive enduring relationships with the respective institutions and stakeholders.

It should also be kept in mind that the fisheries assessment had to consider the tuna length season, although this is quite low for Namibia. Nevertheless this fishery has their peak fishing season after the pole and line with main catches of yellowfin occurring from May through the winter period.

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In 2011 a total of 4,046 tonnes of tuna was caught utilising 39 vessels. Because the tuna disappeared during the height of the season during February 2011, attributed by fishermen to nearby seismic exploration, fishing vessel numbers, particularly those discouraged South African vessels from making the trip to Namibian waters, and in 2013 a total of only 941 tonnes was caught, vessel numbers involved in the fishery dropping to a low of 9.

The tuna was caught during 2012 by 26 vessels. This drop in catches, together with ongoing government notices, the lack of administrative activities on the environment are considered in time and carefully. This is another reason why petroleum exploration is deemed invalid under section 31(2) of the Environmental Management Act 7 of 2007.

The purpose of the Environmental Management Act and therefore the issuing of or denying of Environmental Clearance Certificates is to ensure that "significant effects of activities on the environment are considered in time and carefully". "Environmental Management Act, section 2(3). A "significant effect" is defined under the Environmental Management Act to include any activity that may alter a consequential qualitative or quantitative impact on the environment including: changes in ecology, or economic and social factors. Hence, exploration may likely have a consequential impact on ecology, economic or social factors, it is required to ensure that these potential impacts be considered in time and carefully. This is another reason why petroleum exploration is considered a related activity to petroleum extraction. In addition, the process of petroleum exploration does extract and manipulate petroleum and other natural resources. Thus, petroleum exploration is included as a listed activity under section 3.3 and thus requires an environmental clearance certificate under the Environmental Management Act 7 of 2007.

The Petroleum (Exploration and Production) Act (No. 2 of 1991) requires that "an estimate of the effect which the proposed exploration operations may have on the environment" is undertaken as part of the exploration licence application process. Baseline scientific studies and EIAs for proposed seismic activities were conducted over the full licence area to meet these requirements by Signet Petroleum Ltd (December 2011) and Spectrum (December 2013). Both these applications proceeded with the seismic surveys approved by the Ministry of Mines and Energy (MME).

The survey being proposed, ERM carried out a comprehensive environmental impact assessment in a process to update the EIAs. The process that we followed included a full review of the proposed activities, update to specialists studies (including studies of fishing and marine framing), and update to the EIA report.
We would also recommend that you consult with officials from the Ministry of Fisheries to take things forward in a positive manner. Alternatively, discussions could be had joint discuss the EIA with key stakeholders at a specially arranged Taskforce Meeting, Taskforce meetings. There is the possibility, and we would welcome this, that Shell could the Benguela Current Commission have also had representatives attending Seismic Taskforce. To date the Large Pelagic and Hake Longlining Association as well as and Marine Resources who is the Government Agency heading up the Inter Ministerial research has been effectively undertaken to assess how far away seismic exploration can vessels so that they know fishing will not be disrupted by seismic exploration. Only one research has been effectively undertaken to assess how far away seismic exploration can occur without impacting tuna catches, will fishermen have peace of mind that seismic exploration and has fishing can occur in the same vicinity together.

The impact of seismic noise is the subject of this EIA. This EIA outlines a detailed mitigation

We would also recommend that you consult with officials from the Ministry of Industries and Marine Resources who is the Government Agency heading up the Inter Ministerial, Seismic Taskforce. To date the Large Pelagic and Hake Longlining Association as well as the Benguela Current Commission have also had representatives attending Seismic Taskforce meetings. There is the possibility, and we would welcome this, that Shell could jointly discuss the EIA with key stakeholders at a specially arranged Taskforce Meeting, to take things forward in a positive manner. Alternatively, discussions could be had between Ministry of Fisheries and Marine Resources stakeholders, the fishing industry including tuna suppliers, and Shell to advance joint research on mitigating seismic sound impacts on tuna.

The EIA process included a programme of stakeholder engagement that included communication and notification of a wide range of interested and Affected Parties as well as direct engagement with key stakeholders. The engagement programme built upon the work that was done for the previous two surveys.

The list of stakeholders was developed with input from Namibia environmental consultants and government authorities, as well as previous EIAs undertaken for the licence area. The list included government authorities (local and regional). Non-Governmental Organisations (NGOs), Community-Based Organisations (CBOs) and industry groups (including the fishing industry). The list did include your organisation, the Large Pelagic and Hake Longlining Association. It also included the Benguela Current Commission and other members of the seismic taskforce (including Mr Anna Erastus, Director of Policy and Planning from MFMR and head of the seismic taskforce).

All of the identified stakeholders were notified about the EIA process on 24 June 2014. To inform the general public, notices were placed in Die Rystdoer (Afrikaans) and Die Namibian (English) newspapers on 24 June 2014.

In addition to the stakeholder notification programme for the EIA, Shell has interacted with and held conversations with the following:

- Mr Immanuel Mulunga, Petroleum Commissioner, MME
- Dr Gobi Schindler, Director of Geological Surveys, MME
- Kathryn Kalumba, Permanent Secretary, MME
- Mr Teofilus Nghitila, Environmental Commissioner and Director, MME
- Freddy Sikabongo, Deputy Environmental Commissioner, MME
- Mr Immanuel Mulunga, Petroleum Commissioner, MME
- Mr Simon Angula, Assistant to the Environmental Commissioner, MME
- Mr Ariane Kansie, National Information and Research Center, MME
- Daelief Kassie, Consultant to the Conformity of Namibian Fishing Association
- Kurt Leavitt, General Manager – Marine Fishing (Pty) Ltd

Shell is committed to engage with all relevant stakeholders. The Seismic Taskforce has been specifically set up as an inter-governmental forum to promote co-operation among the key government departments to deal with an industry-wide issue. Shell is happy to support, where

The ongoing threat of seismic exploration disrupting the Namibian pelagic and tuna longline fishery, is consequently keeping South African vessels away. This is having negative economic impacts on the town of Luderitz, from which the fishery operates, as well as jobs. A vessel has around 20 crew, so in 2013 when there were 39 vessels, total crew employment would have been approximately 780. This dropped to around 520 crew employed in 2012, and only 180 in 2013.

The Large Pelagic Fishing Association attributes the drop to the uncertainty caused by seismic survey: impacts on tuna catches which has had a significant negative economic impact on the fishery. Many vessels simply are not willing to join the fishery for fear of finding economic losses due to seismic impacts disturbing the fish. It is for this reason, the Large Pelagic and Hake Longlining Association needs a moratorium on seismic exploration during the tuna season of October to April, to bring commercial certainty for vessels so that they know fishing will not be disrupted by seismic exploration. Only one research has been effectively undertaken to assess how far away seismic exploration can occur without impacting tuna catches, will fishermen have peace of mind that seismic exploration and has fishing can occur in the same vicinity together.

The impact of seismic noise is the subject of this EIA. This EIA outlines a detailed mitigation plan to manage the impact of the seismic operation. To reduce the impact on pole and line fishing in Namibia, the survey is being conducted outside the peak fishing period. This is intended to avoid or minimise disruption of fishing activities.

The Namibiан government departments to deal with an industry-wide issue. Shell is happy to support, where
Our concern is that your 3D survey would produce more intense sound than a 2D survey, and it is this sound that we are concerned will put the tuna into avoidance mode, or worse still, scare it into accelerating its migratory path beyond Namibian waters, as has occurred in recent years.

See response to Comment 15.

You also state in the report that at water depths of 45-65m airgun arrays are often audible to ranges of 30-75km, and with efficient propagation conditions such as experienced on the continental shelf or in deep oceanic water, the distance over which sound can be detected can exceed 100km and 1,000km, respectively (Bowles et al. 1991; Richardson et al. 1995; see also references in McCauley 1994). You state that the Shell survey is around 50km north east of the pole and line tuna sectors main fishing grounds at Tripp Seamount.

Based on the statement above by Bowles et al., we are concerned that the tuna fishery at Tripp Seamount could be disrupted for at least the full length of the 50 day Shell survey. Although the audible range of the marine noise may propagate over large distances, we refer to the behaviour of large migratory pelagic fish can extend to approximately 5 km (some studies have shown behavioural changes much further away) from the sound source (refer to Comment 13 and Comment 14). As such, no effect on fish around Tripp Seamount is predicted. Review work by Turnpenny & Nedwell (1994) indicates that there are two different types of fish avoidance towards seismic sound; demersal fish will dive towards the bottom or into deeper waters and pelagic fish will swim horizontally away from the sound source. The study by Gausland (2003) looked at six studies of seismic impacts on fish and concluded that avoidance behaviour generally occurred within 2 km of the sound source. The effects on the fish themselves are short-lived, and only for the actual duration of the exposure.

For a fishing vessel, one month of being excluded from a possible good fishing area could mean revenue losses of hundreds of thousands of Namibian dollars, and potentially cause the vessel to make a commercial loss rather than a profit for the fishing season. 50 days is closer to two months, and a blockade of this length of time from a main fishing ground represents 28.5% of potential fishing time for pole and line tuna vessels (based on a 7 month fishing season as tuna is a migratory species).

The seismic survey is planned to avoid the peak period for pole and line tuna fishing. In addition, the survey footprint is approximately 48km away from Tripp Seamount, which has been identified as a key location for fishing.

As mentioned under Comment 18, the number of fishing vessels expected in the survey area at the time of the survey is expected to be very low.
As described in the EIA report, Shell will also implement other mitigations to avoid or reduce the impact on fishing activities. These will include a programme of communication with the fishing industry to notify fishing vessels of the survey plans before the start and on-going communication with fishing vessels to coordinate activities and work cooperatively to minimise disruption to all parties.

Engagement with the fishing industry will be coordinated by a Fisheries Liaison Officer, a fishing specialist who will be based on the seismic survey vessel and monitor fishing activities and communicate with all marine users in the vicinity of the survey.

With regards behavioural avoidance, your report states that the potential impact of seismic sounds on the behaviour of large migratory pelagic fish is considered to be of medium magnitude (particularly within 5 km of the airgun array), over the short-term with duration of the effect being equal to the duration of exposure, although these vary between species and individuals, and are dependent on the properties of the received sound. Observed effects may extend beyond the survey area, but are unlikely to persist for more than a few days after termination of airgun use. Consequently you state that it is considered to be of MINOR significance without mitigation.

The impact significance is minor because it is predicted to be of short duration.

The Australian Southern Bluefin Tuna fishery catches dropped significantly when there was seismic exploration close by, and the tuna was spotted again hundreds of kilometres away from where it normally is. The Australian Centre for Scientific and Industrial Research had been tracking the tuna for many years and until this seismic exploration event, the tuna had always followed the same migratory path. The following tuna season, after discussions with the Australian tuna industry, undertook its survey outside the tuna migratory window, the fish returning to their normal migratory route, and catches were good.

See response to Comments 12 and 30.

Thank you for drawing our attention to the example of the Australian Bluefin tuna. The complex variables in the marine environment makes it difficult to conclusively link seismic surveys with variation in fish catches.

The EIA report states that the impact on pelagic fish is expected to “minor”, for a period of 5-14 days.

The seismic survey is approximately 50 kilometres North West of Mount Tripp, the main tuna aggregating grounds in the south of Namibia.

The impact significance is minor because it is predicted to be of short duration.

The 5 to 14 days is an over estimation of the period. Based on further analysis the duration is estimated to be [a few days after airgun use in a specific area]. This will be incorporated in the final EIA report.

In the above map, seismic surveys are overlaid over the tuna fishing hotspots. Albacore tuna tend to follow underwater contours between the depths of 400 and 1000 metres. Hotspot areas north of Tripp Seamount (southern most hotspot) are only of real significance when there are no seismic activities.

With seismic activity fishermen have generally observed that if it is close enough to
During 2010/11 the tuna catch season which started in October 2010 was a good one, but according to skippers involved, could have been much better. When the seismic activity started in February of 2011, the fish scattered and were not seen again that season. This is what the Namibian tuna sector fear as it is definitely not a minor event. Depending on when it occurs during the fishing season, it can significantly reduce the length of the tuna season, with resultant “moderate” to “major” negative economic impact on the tuna vessels involved. The tuna season, cut short in February 2011 during the height of the catching season, in normal circumstances would have extended to the end of April at least. In the case of the Murphy Oil 3D Survey in April and May 2014 (finishing early June) in area 2613A&B off Luderitz, with the introduction of a second survey vessel during April, the tuna suddenly disappeared from these areas, not to return. Fishing had been good, and in this case the season could have extended into May in these areas.

The seismic survey is planned to avoid the peak period for pole-and-line tuna fishing.

The EIA study did evaluate the potential effects on the tuna fishery. The evaluation used fish catch data provided by the government. The EIA considered the status of the potentially affected fish stock and long-term trends.

In terms of long-term trends, historic catch of albacore tuna caught by South Africa and Namibia combined was very low, increasing steadily to a peak in 2000. Since 2001, catch has declined. The International Commission for the Conservation of Atlantic Tuna (ICCAT) data shows that pole-and-line fishing effort in Namibia and South Africa has consistently increased despite declines in catch rate. ICCAT data also shows a gradual increase in catches by Namibian pole and line vessels from the early 1990’s.

Despite the upward trend in catch for Namibian vessels, albacore tuna catch has fluctuated widely over the years. In this regard, the catch reported in 2009 (3322 t) was the highest since the beginning of the pole-and-line fishery in Namibia. This was followed by another high in
Low catches were recorded in 1999, 2007 and 2010. These fluctuations were recognised by a scientific assessment undertaken by ICCAT in 2013 for the South Atlantic Albacore (southern stock), which reported that in 2012, the estimated South African and Namibian catch (mainly bycatch) was below the average of the last five years. The different models used by ICCAT in the assessment suggested that there was a high probability that tuna stocks are overfished and/or experiencing overfishing.

The ICCAT study was not conclusive on the cause of the variability and stock decline but attributed it to be most likely a combination of the following drivers:

- Increasing fishing effort exacerbated by improved fish-finding technology (vessel monitoring systems, use of sonar), satellite technology;
- Environmental variability such as cold and warm water events (e.g., Benguela Niño);
- Migration and feeding patterns that change abundance levels annually and linked to the environment;
- Inconsistent or irregular catch reporting.

The effects of the seismic survey noise on fish are predicted to be low and limited to about 5 km from the sound source.

In the second scenario where the fish dive as an escape response to the seismic blasts, fishermen have learnt to live with this, waiting a number of days for the tuna to decide to resurface, when they are again catchable. This corroborates scientific studies which indicate that any effects on behavior is short term and is unlikely to persist for more than a few days.

We acknowledge that there is renewed interest in offshore hydrocarbon exploration in Namibia. The information provided is consistent with the information and data used in the EIA study. The statistics need careful use and interpretation as the changes in tuna catches and abundance are most likely associated with many factors of which seismic effects are incorporated.

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In the above table, Series 3 refers to 3D seismic surveys and Series 2 to 2D seismic surveys. This graph refers to all seismic surveys occurring in Namibian waters, and not just the south, but the increasing trend is obvious.
The Large Pelagic and Hake Longlining Association is most concerned by the impact of seismic surveys which occurred in both countries at that time. Based on the Ministry of Mines and Energy graph covering seismic activity in Namibia's southern waters from 2009 to 2012, activity relating to spikes was low in 2008. During that year catches were good. In 2010 MFMR implemented fishing conditions requiring a 90% Namibian crew complement on charter vessels, and 75% value addition on all vessels. Many of the pole and line vessels fishing in Namibian waters are from South Africa, and consequently in 2010, most did not come to Namibia. Catches were good, though, for the vessels fishing. Because of the significant reduction in vessels fishing, during 2010, MFMR lifted the restrictions in 2011, and vessels returned in numbers. Catches were good in 2011, but seismic activity increased that year too. Fishermen say, however, that in the 2010/2011 tuna season catches were good, but when seismic surveys started in February 2011, the tuna scattered and were not seen again that season. In the 2012 calendar year, however, catches dropped by half. The Ministry of Mines and Energy graph shows a significant increase in seismic activity that year. In January to March 2012, there was seismic activity immediately over Tripp Seamount. Then in October 2012 to March 2013, there was seismic activity in one block very close to Tripp Seamount just over the South African border. In 2013 the catches halved again. Seismic activity in Namibian waters dropped that year preceding mixed signals. However, this can be explained by ongoing seismic activity in two Blocks, just over the South African border, near to Mount Tripp. Between the two Blocks, seismic activity ran from October 2012 to May 2013.

The EIA study did consider the long-term trend in tuna stocks. Declining catch can be attributed to many different factors, including a decrease in effort, a declining stock abundance, changes in water temperature (as a result of large scale changes such as the suppression of upwelling and a deepening of the thermocline), irregular, large scale and long-term climate shifts as well as the shifts between ENSO and La Niña events, caused by the El Niño-southern Oscillation (ENSO), changes in food availability and distribution. Help provided by NatHERB show that the reported catch went from 89 t in 2011 (almost zero fishing due to no RSA boats) then increased to 1069 t (pale and line only) in 2012. The catch in 2013 was 869 t. The most important factor is the abundance index - initially in 2011 it was 103.7 t per vessel if RSA catch is included - just 19 t caught by Namibian vessels. In 2012 it was about 75 t per vessel and in 2013 it was either 104.6 t per vessel (using 941 t and 9 boats) or 76.6 t per vessel depending on what figures are used. Catch rates are the best indicator of changes and not total catch. In this case the 2013 CPUE is similar to the 2011 figure (103.7 t) or similar to the 2013 figure (75.7 t). No matter what is used the rough catch indicator per vessel suggests that the abundance had not changed significantly and that the significantly increased number of vessels fishing in 2012 probably influenced the catch rate significantly i.e. it was lower due to high fishing effort.

The Scientific Assessment Team (SAC) did consider the cumulative effects of all marine activities that contribute to noise in the marine environment, including seismic surveys. The suggestion from the SACAT study is that there is 5% probability for the stock to be both overfished and experiencing overfishing. In addition there isn’t enough objective information to identify the most plausible scenarios to account for the variability and stock declines.

The above table shows the increase in number of surveys in Namibia’s southern waters between 2009 and 2012. By comparison, below is the data for catches of Albacore Tuna caught by pole and line vessels. This data was obtained from the Ministry of Fisheries and Marine Resources (MFMR), and then refined by the Large Pelagic and Hake Longlining Association, removing any catches caught by vessels outside the tuna pole and line fleet. While MFMR does not set total allowable catches for albacore tuna caught in Namibian waters, the International Commission for Conservation of Atlantic Tunas (ICCAT) does. The catch data could be added to Table 3.2 in the fisheries study which currently excludes albacore tuna.

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See responses to Comments 12, 30 and 35.
Catches of pole and line tuna have dropped from 4046 tonnes in 2011 to 941 tonnes in 2013. One main cause for this is that pole and line vessel economic viability dropped significantly with the tuna in seismic avoidance mode, vessels involvement in the fishery dropping from 39 in 2011 to only 9 in 2013.

The Namibian Large Pelagic and Hake Longline Association views seismic sound as a negative impact on the marine environment, and should not have to carry the cost of potential immediate rerouting to international waters. Given that tuna generally follow depth contours of between 400 and 1000 metres, and the migratory path is likely to be between 1300 and 2500 metres, we are hoping that any seismic sound impact will tend to scare the fish closer to Namibia’s coastline where they will remain catchable, and not encourage the fish to swim into international waters.

Consequently, the tuna fishing industry would like the Shell survey to start as early as possible during September or October, so that the survey is over by the time fish catches start increasing during December and January.

The seismic survey is planned to avoid the peak period for pole and line tuna fishing. The timing of the programme has been identified to be the best options based on a number of considerations, including peak fish catch months (see response to Comment 18).

The seismic survey is located in deep water and given the distance of the survey location to shallow water areas, the effect of sound levels would be insignificant. As sound spreads underwater, it decreases in strength with distance from the source. Factors that influence sound transmission loss include sound absorption or scattering by organisms in the water column, reflection or scattering at the sea bed and sea surface, and the effects of temperature, pressure, stratification and salinity. Variations in temperature and salinity with depth cause sound waves to be refracted downwards or upwards.

In addition, the survey footprint is some distance from Tripp Seamount, which has been identified as a key location for fishing. The survey footprint is also located some distance from the migratory paths outside of contour depths between 400 and 1000 metres. As behavioural response is only expected up to 5 km from the sound source, no significant effects are expected for either of these areas.

The conclusion of the EIA is that the effects of seismic noise will be mitigated to the extent that impacts are not affected.

The mitigation measures that will be implemented for the seismic operation is aligned to global best practice and has been designed to ensure that environmental impacts are avoided or mitigated to insignificant levels. This is to ensure that the operations of other marine users are not affected.

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In addition, seismic sources are designed to focus sound energy downwards (i.e., into the subsurface). This means that sound energy propagating horizontally is in a certain extent suppressed.

The conclusion of the EIA is that the effects of seismic noise will be mitigated to the extent that impacts are only experienced for the duration of the noise exposure.

Bell welcomes the opportunity to engage with the fishing industry and work collaboratively on developing a research scope for an independent institution or party to undertake. The relevant Namibian authorities would need to participate in the initiative.
Seismic exploration is having a disruptive effect on the marine ecosystem, particularly impacting migratory species. It is the responsibility of the seismic exploration companies to responsibly deal with this issue through working co-operatively with the fishing industry, and undertake research to resolve the situation jointly with Government scientists. In the meantime, Government with its Constitutional responsibility should also be party to the process of facilitating an agreement between the seismic exploration and tuna fishing sectors to establish effective research and promote as little disruption as possible to the tuna fishery during the tuna migratory window.

We thank you for this opportunity to comment on your EIA, and look forward to constructive communication so that both the seismic exploration and fisheries sectors can operate co-operatively in the future through working out ways to avoid adverse seismic impacts.

Thank you for your comments and input to the EIA process.