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APPROVAL OF AN ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR) IN TERMS OF THE REQUIREMENTS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT 28 OF 2002 (MPRDA)

Application Details	
Details of Applicant	OK Energy Limited, 3229 N Peebly Midwest City, Oklahoma United States of America 73110 Contact Person: Dr Erika Syba Tell: +44 (0) 1483 750 588 Email: Erika.syba@ok-energy.uk.com
Environmental Consultant	CCA Environmental (Pty) Ltd Contact Person: Jeremy Blood Tel: (021) 461 1118 Fax: (021) 461 1120 Email: eloise@ccaenvironmental.co.za
Application	Application for exploration right in the Northern Cape Ultra-deep Licence Area, West Coast of South Africa.
Proposed Activities	Geophysical surveys i.e. 2D/3D seismic survey, Boat acquired full tensor gravity and magnetics, Multi-beam bathymetry survey and Seafloor Sampling
File Ref Number	12/3/1/274/2/2/1
Area	Northern Cape Ultra-deep Licence Area off the West Coast of South Africa
Size of the application area	6 930 km ²
Mineral	Oil and Gas

06 June 2014

Directors: MP Fusi (Chairperson)

B Luthuli R Nkambule T Ramuedzisi *L Mekwe (*Executive)

Company Secretary: Adv E Hendricks

Subsidiary of CEF SOC Ltd.

South African Agency for Promotion of Petroleum Exploration and Exploitation SOC Ltd Registration No. 1999/015715/30



EXECUTIVE SUMMARY

This Record of Decision is for the approval of an Environmental Management Programme (EMPr) in terms of the requirements of the Mineral and Petroleum Resources Development Act (MPRDA), Act no 28 of 2002. The review and approval of an EMPr is done to assess and verify the fulfilment of the environmental requirements by the applicant in order to support the granting of an exploration right in terms of section 80 of the Act.

OK Energy Limited ("OK Energy") submitted an EMPr on the 08th of April 2014 to support an application for exploration right in order to undertake 2D and 3D seismic surveys, boat acquired full tensor gravity and magnetics, multi-beam bathymetry survey, and seafloor sampling in the Northern Cape Ultra-deep Licence Area, off the West Coast of South Africa. The proposed activities will be undertaken within an area of approximately 6 930 km², which is located more than 300 km from the shoreline and in water depths beyond 2 500 m. The South African border with Namibia forms the northern boundary of the exploration area.

The EMPr provides assessment of environmental impacts and risks associated with the proposed exploration operations. Potential environmental impacts identified amongst others include pathological injuries and mortality, particularly to the migratory cetaceans and hatchlings as a result of seismic noise; loss of benthic macrofauna including crushing of benthic epifauna from sea-bed sampling and disturbance of marine fauna during multi-beam bathymetry survey; temporary cessation or displacement of fishing activities within the earmarked exploration area, etc.

Given the duration and the extent of the proposed exploration activities; the majority of impacts are considered to be of very low to low significance with mitigation measures. In this regard, recommendations and conditions of the EMPr and Record of Decision, continuous engagement with the fishing industry and all interested and affected parties prior to and during exploration operations, carrying out exploration work within the recommended timeframes, etc. must be implemented in order to prevent identified potential impacts.

The information provided meets the requirements of the Act and it is therefore recommended that this EMPr be approved in terms of section 39(4) of the Act in order to support the application for an exploration right.

1. COMPLIANCE WITH THE REQUIREMENTS OF THE ACT

1.1 Submission

Section 79(4)(b) requires the applicant to submit an EMPr in terms of section 39, within 120 days from the date of the notice and therefore the EMPr was submitted within the legislated timeframe.

1.2 Approval of the EMP/EMPr

Section 80(1)(c) makes provision for the EMPr approval in terms of section 39(4) before the exploration right is granted. Section 39(4) states that the Minister must approve the EMPr provided that:

- (a) it complies with the requirements of subsection 39(3).
- (b) the applicant has complied with section 41(1) with regard to prescribed financial provision for rehabilitation.
- (c) the applicant has the capacity or has provided for the capacity to rehabilitate and manage negative impacts on the environment.

Section 80(3) requires refusal to grant an exploration right if the applicant has not met all the requirements of section 80(1).

2. LOCATION AND DESCRIPTION OF EXPLORATION ACTIVITIES

2.1 Location

The Northern Cape Ultra-deep Licence Area is located in the Orange Basin, off the West Coast of South Africa. It is approximately 6 930 km² in extent and encompasses two petroleum blocks; namely block 3013 and 3113.

2.2 Exploration activities

The applicant intends undertaking the following exploration activities during the initial three years of the exploration work programme:

- Two-dimensional (2D) and / or three-dimensional (3D) seismic surveys followed by processing and interpretation. Equipment to be used during the surveys include a seismic vessel towing a single streamer and airgun arrays with tail buoys connected to the streamer, and chase boat to control marine traffic. The survey involves directing the high level, low frequency sounds towards the sea-bed with signals from geological surfaces recorded by receivers housed in the streamers;
- Boat acquired full tensor gravity and magnetics to better define existing structural trends, identify additional features and to address depth to basement / magnetic source;

- Multi-beam bathymetry acquisition to produce a digital terrain model of the seafloor in order to detect natural hydrocarbon seepage; and
- Seafloor sampling programme for geochemical analysis.

3. BASIS FOR REVIEW AND DECISION MAKING

3.1 Baseline Environmental Information

Section 39(3)(a), read with Regulation 52(2)(a) requires the applicant to establish the baseline information concerning the affected environment to determine protection, remedial measures and environmental management objectives. In this regard, the EMPr provides an in-depth description of the physical oceanography i.e. bathymetry, sediments, water circulation, nutrient distribution, etc.; biological oceanography which indicates the existence of sea-mounts communities, fish species, turtles, seabirds, marine mammals, etc.; and current human uses of the west coast which amongst others include fishing, oil and gas exploration, shipping routes, recreational use and undersea fibre optic cables.

It is important to note the following:

- The application area falls within the Atlantic offshore bioregion however it does not overlap with any identified potential conservation priority areas.
- A number of large baleen whales are found in the West Coast; however, the most abundant are southern right and humpback whales which are migratory in nature, with movements at peak between June and November annually.
- There are three species of turtle which occur along the West Coast, namely leatherback, loggerhead and green turtles. Leatherback is likely to be encountered within the application area though their abundance is likely to be low.
- The large pelagic long-line sector is the only commercial fishery active in the area.
- A number of exploration rights have been issued in the West Coast of South Africa including areas bordering the application area.

The provided description of the environment likely to be affected by the proposed exploration operations is satisfactory and is in line with the requirements of section 39(3)(a) of the Act.

3.2 Environmental Impact Assessment & Controls

Section 39(3)(b), read with Regulation 52(2)(b) requires the applicant to investigate, assess and evaluate the impact of the proposed exploration operations on the environment, the socio-economic conditions of any person who might be directly affected and any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No 25 of 1999), with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of the 'said' Act. Furthermore, section 39(3)(d), read with

Regulation 52(2)(c) makes provision for the description of the proposed mitigation and management measures to control and remedy adverse impacts. In assessing the EMPr the following was identified:

- Potential environmental impacts ranging from discharges and wastes; noise pollution from seismic and support/other vessel operations; atmospheric pollution from combustion activities; impacts on biological diversity i.e. loss of benthic communities and physical crushing of benthic biota from seabed sampling; and pathological injuries/mortality and behavioural avoidance by cetaceans and other marine fauna from seismic and multi-beam bathymetry operations may occur.
- Potential socio-economic impacts which amongst others include temporary loss of recreational fishing activities, interference with marine transport routes, etc. may occur.

The significance of all identified impacts from the seismic survey, boat acquired full tensor gravity and magnetics, multi-beam bathymetry acquisition and seabed sampling programme was assessed and evaluated and it was established that:

- Potential impacts on cetaceans which include physiological injury, behavioural avoidance and/or mortality would range from medium significance without mitigation and very low significance with mitigation. Measures to prevent potential impacts are recommended in the EMPr and are deemed adequate.
- Potential disturbance and loss of benthic macrofauna which include removal of sediment cores during sampling and crushing and smothering of epifauna and infauna on the sea floor may occur from seabed sampling, however, where these areas are avoided; the potential impacts will be insignificant.
- Potential impacts on fishing industry which includes disruption to fishing operations and loss of access to fishing grounds as a result of 500m safety zones around the survey vessels would range from very low significance with or without mitigation measures. The control measures for all potential impacts have been provided in the EMPr and are deemed adequate. Consultation with fishing industry is crucial in reducing the potential disruptions and shall take place at all stages of the operations.

OK Energy and its appointed Environmental Consultant have provided appropriate mitigation measures for all identified potential environmental and socio-economic impacts. Therefore, the provisions of section 39(3)(b) & (d) of the Act are satisfied.

3.3 Consultation Process

Section 79(4)(a) requires the development of the EMPr to include consultation with any affected party. The review of the EMPr revealed the following:

- Consultation with I&APs which include fishing industry, local and regional, non-governmental organisations, etc. was carried out by distributing the Background Information Documents (BID), and advertising the proposed operations on regional newspapers i.e. Cape Times and Die Burger on 17 January 2014.
- The draft EMPr was made available for comments for a period of 30 days and notification sent to all I&APs.
- Comments and issues received were in relation to potential impacts of seismic survey on Namibian albacore tuna fishery. Concerns raised have been addressed in the EMPr, however, the applicant needs to continue engaging with David Russel Fisheries Consultancy prior to, during and at completion of the planned activities.

The public consultation process undertaken by the applicant is considered satisfactory.

3.4 State Department Consultation

The Agency consulted a number of Provincial and Regional Departments (Dept) in the Western and Northern Cape administering any law related to matters affecting the environment as required by Section 40 of the Act. These were: Dept. of Environmental Affairs: Branch Oceans and Coasts (DEA: O&C), Dept. Agriculture, Fisheries and Forestry (DAFF), Dept. of Environmental Affairs (DEA), Dept. of Mineral Resources NC (DMR), Dept. of Mineral Resources WC (DMR), South African National Biodiversity Institute (SANBI), South African Maritime Safety Authority (SAMSA), South African National Heritage Resources Agency (SAHRA) and Namakwa District Municipality. Information on consultation process is outlined below:

Table 1: State Departments consulted and comments

Institution	Date sent	Comments	Date comments received
DEA: O&C	09 April 2014	No comments received	N/A
DAFF	09 April 2014	No comments received	N/A
DEA	09 April 2014	No comments received	N/A
DMR WC	09 April 2014	No comments received	N/A
DMR NC	09 April 2014	Comments received	10 May 2014
SANBI	09 April 2014	No comments received	N/A
SAMSA	09 April 2014	No comments received	N/A
SAHARA	09 April 2014	No comments received	N/A
Namakwa DM	09 April 2014	No comments received	N/A

Comments received from the Northern Cape's Department of Mineral Resources were in relation to the following:

- No existing rights/ permits or lodged applications in the proposed exploration application, and

- No objection to the proposed operations.

3.5 Financial Provision

Section 41(1) requires the applicant to make the prescribed financial provision for rehabilitation and management of negative environmental impacts. OK Energy has allocated US\$12 000 000.00 (twelve million US Dollars) for rehabilitation and management of day to day operational risks relating to environmental remediation, third party liabilities, removal of miscellaneous objects from the sea floor, etc. which will be provided through an insurance guarantee method. The guarantee method which satisfies the requirements of MPRD Regulation 53 shall be submitted to the Agency before the execution of the exploration right.

The requirements of section 41(1) and MPRD regulations 53 and 54 are satisfactorily addressed.

3.6 Capacity to rehabilitate and manage negative impacts

Section 39(4)(a)(iii) requires the approval of the EMPr or EMP if the applicant has the capacity or provided for the capacity to rehabilitate and manage negative impacts on the environment. Commitments made in the EMPr include the following:

- 3.6.1 Environmental Policy: The applicant recognises its responsibility to protect the environment throughout its operations.
- 3.6.2 Plans & Procedures for Environmental Emergencies & Remediation: OK Energy will use its own emergency response plan as its basis which will be submitted to the Agency.
- 3.6.3 Monitoring & EMPr Performance Assessment: OK Energy will undertake appropriate monitoring and EMPr during the proposed exploration activities and track performance against objectives and target specified in the action plan and procedures.
- 3.6.4 Financial Provision: as indicated in 3.5 above, financial provision for rehabilitation has been allocated and is deemed adequate.

It is therefore considered that the requirements of section 39(4)(a)(iii) are fulfilled.

4. RECOMMENDATION

It is recommended that the EMPr be approved in terms of section 39(4) of the Act subject to the following conditions:

- 4.1 All exploration operations must be carried out and managed in accordance with the approved EMPr and this RoD conditions. Deviations from the approved EMPr

requirements may lead to the cancellation or suspension of the right in terms of section 47 of the Act.

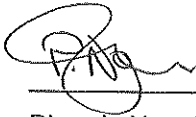
- 4.2 Seismic surveys and multi-beam bathymetry survey acquisitions must be undertaken between the months of December to May as the cetacean's migration season is at its peak between June and November annually.
- 4.3 Precautionary measures to prevent injuries and mortality of marine fauna must be undertaken during exploration operations as prescribed in the EMPR. In this regard, all initiations of seismic surveys must be carried out as "soft-starts" for a minimum of 30 minutes and PAM technology must be implemented 24 hours a day during seismic survey operations.
- 4.4 All wastes and discharges aboard must be handled and managed according to provisions of MARPOL 73/78 and Marine Pollution (Prevention of Pollution from Ships) of 1986.
- 4.5 Effective communication channels to inform other potential marine users of proposed operations must be established by means of Radio Navigation Warnings, notices, and through South African Navy Hydrographic Office.
- 4.6 All key stakeholders, relevant departments and directly affected I&APs must be notified in writing of any planned operations 21 days before operations commence on site.
- 4.7 On-going consultation with I&APs and other stakeholders must be undertaken before commencement, during and at completion of planned activities by means of appropriate notices.
- 4.8 Helicopter flight paths during operations must avoid sea-bird or seal colonies and no aircraft or vessel may approach to within 300 m of whales without a permit in terms of the Marine Living Resources Act of 1998 (Act 18 of 1998).
- 4.9 Details and specifications of the contracted seismic vessels and proofs of certification by relevant authorities must be submitted to the Agency 30 days before operations commence on site.
- 4.10 Daily reports, monthly, quarterly environmental monitoring reports and annual EMPr performance assessment reports must be submitted to the Agency. A close-out report shall be submitted within 60 days of the end of seismic survey completion.
- 4.11 Copy(s) of insurance documents in respect of financial provision for operational risks must be submitted to the Agency before the execution of the right.
- 4.12 Emergency Response Plans and Oil Spill Contingency Plans suitable for the proposed operations must be developed in consultation with relevant authorities such as the Department of Environmental Affairs: Oceans and Coasts, South African Maritime Safety Authority. Plans must be submitted to the Agency for approval 30 days before vessels are mobilised on site.

- 4.13 All emergency and any significant environmental incidents must be reported to the Agency within 24 hours of occurrence and must be addressed with immediate effect.
- 4.14 International and domestic laws regulating any activities taking place at sea must be adhered to.
- 4.15 Translocation of alien invasive species through ballasting activities must be prevented at all times and recommendation measures implemented.

5. CONCLUSION

In light of the above, it is recommended that the EMPr for the proposed exploration operations be approved in terms of section 39(4) of the Act.

Recommendation Submitted By:



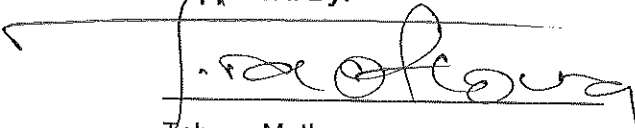
Phumla Ngesi

Manager: Environmental Compliance

11/06/2014

Date

Supported By:



Tebogo Motloug

Acting General Manager: Regulation

11.06.2014

Date

Endorsed By:



Lindiwe Mekwe

Acting Chief Executive Officer

18/06/2014

Date