



# **Terms of Reference for the Review of the Environmental Impact Assessment for the Exploratory Drilling Program, Block 37, Offshore Suriname of Murphy Suriname Oil Company Ltd.**

## **Background**

NIMOS, the Nationaal Instituut voor Milieu en Ontwikkeling in Suriname (National Institute for Environment and Development in Suriname) was established by Presidential Decree in March 1998. As a technical institute under the Ministry of Labour, Technological Development and Environment, it advises this Ministry and others regarding environmental implications of projects and other activities.

Murphy Suriname Oil Company Ltd. (Murphy) proposes to conduct exploratory drilling in Block 37 located at approximately 100 km Northeastern coast offshore Suriname. The exploration program in Block 37 involves three wells and will begin in mid – October 2010. Designated as Caracara 1, Aracari 1 and Caracara 2, the three well sites are located 122.1, 122.7 and 122.9 km, respectively from Wia Wia, Suriname, the nearest coast. Well Caracara 1 will be drilled first between October 15<sup>th</sup> and early December 2010, well Aracari 1 will then be drilled beginning in early December and continuing until early January 2011. If hydrocarbon shows warrant an appraisal well, Caracara 2 will be drilled during the third quarter of 2011. For the purposes of this Environmental Impact Assessment (EIA), it has been assumed that all three wells will be drilled, and potential impacts have been assessed based on this assumption.

## **Review of the Environmental and Social Impact Assessment Reports**

For the above mentioned exploratory drilling an Environmental Impact Assessment (EIA) was conducted by the consultancy firm CSA International, Inc. As NIMOS is responsible to advise the government regarding environmental implications of projects NIMOS has to review the EIA for the government. For this review NIMOS will need some external expertise regarding the following areas:

- Dispersion Modeling of Drilling Discharges
- Spill trajectory Analysis
- Oil Spill Response Plan

## **Objective**

The review is needed to assess the technical quality, accuracy and completeness of the Environmental and Impact Assessment for the Murphy Exploratory Drilling Project. By doing the review it must be assured that the Environmental and Social Impact Assessments presents all the relevant information necessary for a well considered decision-making regarding this project.



## Tasks

The external reviewers will assist The Office of Environmental and Social Assessment to finalize the review of the Environmental Impact Assessments of the Murphy Exploratory Drilling Project. The set up of the review is as follows:

- Individual review of the Draft EIA studies and the related Specialist Studies
- Reporting
- Submission to the project proponent (Murphy Oil) of the review report of the Draft ESIA Studies and the related Specialist Studies
- Review of the Final ESIA studies
- Advice to the Government of Suriname (by NIMOS)

## Qualifications and Duties of the External Reviewers

### Expert on Dispersion Modeling of Drilling Discharges

- a. As a minimum, a Master's Degree in Oceanography with emphasis on ocean currents, waves and geophysical fluid dynamics or related disciplines
- b. A minimum of ten years experience in related field and expert experience in modeling programs concerning the Offshore Oil Industry
- c. Experience and knowledge of Environmental and Social Impact Assessment (ESIA) is an asset
- d. Language capability: fluently speaks, reads and writes English

The duties of the expert on Dispersion Modeling of Drilling Discharges are:

- To assess the technical quality, accuracy and completeness of the Dispersion Modeling of Drilling Discharges Specialist Study with regard to the described impacts regarding drilling discharges, their mitigation, management and monitoring measures by:
  - i. Reviewing the Dispersion Modeling of Drilling Discharges Specialist Study, explaining the strengths and weaknesses of the study, pointing out incongruities or gaps in information, explaining the bases for alternative scientific judgments, and suggesting strategies for handling the technical issues
  - ii. Make recommendations on how the study and the associated information in the Draft EIA report should be modified to yield more accurate/definitive results (if and where required)
  - iii. Reviewing the Draft EIA Reports, where related to Dispersion Modeling of Drilling Discharges Assessment and Mitigation
- Advising NIMOS on the Final EIA Reports, where related to Dispersion Modeling of Drilling Discharges Assessment and Mitigation, especially regarding managing any significant negative aspects and impacts of the project on the affected sensitive receptors



- To list recommendations based on the reviewed information and expert knowledge

#### **Expert on Spill Trajectory Analysis**

- a. As a minimum, a Master's Degree in Oceanography with emphasis on ocean currents, waves and geophysical fluid dynamics, Environmental Engineering, Marine Sciences or related disciplines
- b. A minimum of ten years experience regarding Spill Trajectory Analysis for Offshore Oil Industry
- c. Experience and knowledge of Environmental and Social Impact Assessment (ESIA) is an asset
- d. Language capability: fluently speaks, reads and writes English

The duties of the expert on Spill Trajectory Analysis are:

- To assess the technical quality, accuracy and completeness of the Spill Trajectory Analysis Specialist Study with regard to the described impacts regarding Spill Trajectory Analysis, their mitigation, management and monitoring measures, by:
  - i. Reviewing the Spill Trajectory Analysis Specialist Study, explaining the strengths and weaknesses of the study, pointing out incongruities or gaps in information, explaining the bases for alternative scientific judgments, and suggesting strategies for handling the technical issues
  - ii. Make recommendations on how the study and the associated information in the Draft EIA report should be modified to yield more accurate/definitive results (if and where required)
  - iii. Reviewing the Draft EIA Reports, where related to Spill Trajectory Analysis Assessment and Mitigation
- Advising NIMOS on the Final EIA Reports, where related to Spill Trajectory Analysis Impact Assessment and Mitigation
- To list recommendations based on the reviewed information and expert knowledge

#### **Expert on Oil Spill Response Plan**

- a. As a minimum, a Master's Degree in Chemical Engineering or Environmental Engineering or Occupational Safety and Health or related disciplines
- b. A minimum of ten years experience regarding Oil Spill Response Assessment in the Offshore Oil Industry
- c. Experience and knowledge of Environmental and Social Impact Assessment (ESIA) is an asset
- d. Language capability: fluently speaks, reads and writes English

The duties of the expert on Oil Spill Response Plan are:



- To assess the technical quality, accuracy and completeness of the Oil Spill Response Plan Specialist Study with regard to the described risks, their mitigation, management and monitoring measures by:
  - i. Reviewing the Oil Spill Response Plan Specialist Study, explaining the strengths and weaknesses of the study, pointing out incongruities or gaps in information, explaining the bases for alternative scientific judgments, and suggesting strategies for handling the technical issues
  - ii. Make recommendations on how the study and the associated information in the Draft EIA report should be modified to yield more accurate/definitive results (if and where required)
  - iii. Reviewing the Draft EIA Reports, where related to Oil Spill Response Assessment and Mitigation
- Advising NIMOS on the Final EIA Reports, where related to Oil Spill Response Assessment and Mitigation, especially regarding managing any significant negative aspects and impacts of the project on the affected sensitive receptors
- To list recommendations based on the reviewed information and expert knowledge

## **Deliverables**

**For evaluation of bids/quotations NIMOS will give priority to those whereby the required external reviewers are a team or have submitted bids/quotations as a team.**

The estimated time allocation for the **total external review team is 100 hours**. The review of the studies will **start in August 2010** and **terminates in October 2010**.

**The Review of the draft documents for the Dispersion Modeling of Drilling Discharges, Spill Trajectory Analysis and Oil Spill Response Plan Studies should be submitted to NIMOS not later than the 20<sup>th</sup> of August 2010.**