**CHAPTER ONE**

**INTRODUCTION**

**1.1 General**

Mobil Producing Nigeria Unlimited (MPN), in a joint venture with the Nigerian National Petroleum Corporation (NNPC), proposes to further develop its Yoho Field. The Yoho field lies in Oil Mining Lease (OML) 104, offshore Nigeria. The completed project will recover an estimated 0.4 billion barrels of oil from the Yoho and Awawa reservoirs. These reservoirs lie in a water depth of between 200ft and 300ft.

MPN has performed and presents this Environmental Impact Assessment (EIA) of the proposed Yoho Development Wells Drilling project in compliance with Federal Ministry of Environment (FMENV) Act No. 86 of 1992 and the requirements of the Department of Petroleum Resources (DPR) Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (Part VIII, Section 3.1.2, EGASPIN, 2002).

In line with Mobil Producing Nigeria Unlimited (MPN) Safety Health and Environment philosophy, MPN commissioned Fugro Nigeria Limited (FNL) to carry out the EIA of Yoho Development Well Drilling Project.

1.2 Purpose of EIA

The purpose of the EIA is to: support the goals of environmental protection and sustainable development, through minimising environmental impacts and integrating environmental protection and economic decisions at the earliest stages of project design and planning. The EIA will also predict possible environmental, social-economic, and cultural consequences of a proposed project activity as well as proffer mitigation measures to any adverse impacts/effects resulting from the proposed project activity. Above all, it provides an avenue for public participation and involvement at the initial stage of the proposed project implementation as well as departments of the government and government agencies during the review stage of the EIA process.

Consequently, the objectives of this EIA report are:

* provide necessary data / evidence that will form the Environmental Impact Statement (EIS) of the proposed exploratory drilling project;
* establish the existing environmental baseline status of the project area;
* critically review the proposed project facilities and activities thereby identifying the potential impacts and associated effects of any hazards posed by the pursuit of the project;
* recommend control measures to prevent and/or mitigate identified potential/associated adverse impacts of the project;
* develop and document cost effective Environmental Management Plan (EMP) that recommends plans and procedures to manage the consequences and recover from exceptional events throughout the lifetime of the project; and
* keep a record of consultation with communities, regulatory authorities, the public and other stakeholders.

The key result of the EIA process will be the findings and recommendations that will be translated into specific actions. The EIA will also be used as basis for communication to achieve productive interaction between other relevant stakeholders, with reference to the issues identified during the course of the study. It will also ensure procedures conform to the requirements and guidelines of the Federal Ministry of Environment (FMENV) and the Department of Petroleum Resources (DPR).

1.3 Report Presentation

This EIA report is presented in eight (8) chapters as described below.

* **Chapter one:** is an introduction with background information on the proponent, objectives, workscope and methodology and a review of the legal and administrative framework for EIA in Nigeria as applicable to the proposed project.
* **Chapter two:** discusses the project justification, the need/value, and the envisaged sustainability of the project as well as the project options.
* **Chapter three:** a descriptionof the proposed project activities including drilling operations, associated drilling waste and disposal, project implementation schedule as well as decommissioning / abandonment activities.
* **Chapter** **four:** description of the existing environment of the project area based on two season survey, targeted at given the current status of the project environment prior to commencement of the project.

It also highlights the socio-economic and health profile of the coastal communities proximal to the project site. It also showcases the various levels of consultation that were carried out within these communities.

* **Chapter five:** the interaction between the project activities and the environment is envisaged to produce some impacts. The identification and evaluation of the associated and potential impacts of the proposed project is documented in this chapter.
* **Chapter six:** contains the proffered mitigation measures for the proposed project envisaged impacts.
* **Chapter seven:** presents the Environmental Management Plan (EMP) to be adopted throughout the project life cycle for the purpose of environmental and project sustainability.

It also documents the decommissioning and abandonment programme for the proposed development wells drilling project.

* **Chapter eight** is the EIA conclusion, followed by a list of references and appendices.

1.4 Project Location

The Yoho field lies in Oil Mining Lease (OML) 104, offshore Nigeria in water depths of 92 meters (302 feet) (**Figure 1.1**). Yoho terminal is 35 miles offshore in eastern Nigeria and about 38 miles south west of the Qua Iboe Terminal in Akwa Ibom State Nigeria. The Yoho terminal is located at 40 1’N and 70 28’E in 63 meters of water depth.

0

0

10

16

**Edop**

**Edop**

**Oso**

**Oso**

**Ubit**

**Ubit**

**Asabo**

**Asabo**

**Yoho**

**Yoho**

**Usari**

**Usari**

Mi

Mi

Km

Km

**Asasa**

**Asasa**

**Etim**

**Etim**

**Nsimbo**

**Nsimbo**

**Qua Iboe Terminal**

**Bonny River Terminal**

**Adua**

**Adua**

**Iyak**

**Obong**

**Inim**

**Eku**

**Udara**

**Ibom**

**Oyot**

**Udibe**

**Usari EE**

**Idoho**

**Ata**

**Eku**

**Utue**

**Etoro**

**Isobo**

**Itut**

**Ufeni**

**Ede**

**Isonsi**

**Ekpe**

**Ekpe**

**Abang**

**Kpono**

**Ekpe WW**

Total

OML 99

OML 70 7707 70

OML 104

OML 67

OML 68

OML 69

**Oil Fields**

**Gas Fields**

**Developing Fields**

**Nigeria**

**Map**

**Area**

**Nigeria**

**Nigeria**

**AFRICA**

**AFRICAAAAA**

**YOHO AREA**

**Ekpe Area**

**Edop Area**

**Figure 1.1: Yoho Field OML 104 – Offshore Nigeria**

**Oso**

**Qua Iboe Terminal**

**Oso**

**Qua Iboe Terminal**

**Edop**

**Oso**

**OML 70**

**OML 68**

**Usari**

**69**

**Ubit**

**Oso**

**OML 67**

**OML 70**

**OML 104**

**OML 68**

**Qua Iboe Terminal**

**69**

 **Oil Fields**

 **Gas Fields**

**0**

**16**

**km**

**0**

**10**

**mile**

**Inim**

**Enang**

**Utue**

**Usari**

**Edop**

**Unam**

**Mfem SE**

**Ata/Inanga**

**Asasa**

**Etim**

**Awawa**

**Aran**

**Yoho**

**Ufan**

**Isuo**

**Okuk**

**Ekpe / Ekpe WW**

**Adua**

**Asabo**

**Emiang**

**Enang West**

**Idoho**

**Mfem**

**Isobo**

**Etoro**

**Eku**

**Iyak**

**Ibot**

**Abang**

**Oyot**

**Itut**

**Yoho Area**

**YOHO AREA**

**Ekpe Area**

**Edop Area**

**Figure 1.2: MPN JV 2008 - 2010 Yoho Development Drilling Areas**

**1.5 Project Proponent**

Mobil Producing Nigeria Unlimited (MPN), the project proponent, is the second largest oil producer in Nigeria. The company commenced operations in 1955 under the name Mobil Exploration Nigeria Incorporated (MENI). In 1961, MENI was granted Oil Prospecting Licenses (OPL) offshore present day Akwa Ibom State. The company’s first discovery, “Ata1”, was drilled in 1964. Production of crude oil commenced in 1970 from Idoho field.

MPN is the operator of the Nigerian National Petroleum Corporation (NNPC) and MPN Joint Venture (JV), MPN holds a 40% interest in the joint venture. The Federal Government of Nigeria holds the remaining 60% interest through the NNPC. MPN is also a subsidiary of ExxonMobil. ExxonMobil is particularly active in Nigeria, with a portfolio including six deepwater blocks covering 3.2 million acres. These discoveries include Bonga and Bonga Southwest in OML 118 (20% equity), Chota in OPL 220 (47.5% equity) and Usan in OPL 222 (30% equity). The company also has a 56.25% share in Erha located in OPL 209 and a 20% stake in Bolia in OPL 219.

The existing NNPC/MPN Joint Venture currently operates 88 offshore platforms with 290 completions in 240 producing wells and with 20 injection wells for pressure maintenance. It produces 600,000 barrels of hydrocarbon liquid per day on average, with the capacity to produce in the order of 700,000 barrels/day.

* 1. EIA Terms of Reference

The EIA process outlined in the Federal Ministry of Environment [FMENV] Guidelines was designed to ensure that the proposed project is implemented with suitable consideration for the environment. One requirement of the process is that EIA Terms of Reference (ToR) will be developed and submitted to FMENV by the operator after the proposed project has been registered. The ToR upon approval by the FMENV was used as a guide in executing the EIA of the proposed Yoho development wells drilling project. It also provided the basis for review of the draft report at later stages of the EIA process.

The ToR submitted to FMENV (Appendix 1.1) defined the scope of work, objectives, baseline data requirements, assessment tools and methods for the EIA. It also outlined the regulatory framework within which the EIA was conducted and highlighted some key issues / activities of environmental concern in the proposed project planning and implementation.

* 1. EIA Workscope

The scope of work for this EIA includes:

* Literature review of environmental studies of project area or similar environment;
* Two season field data collection for characterization of project area environment;
* Identify all potential environmental impacts due to proposed project activities within the study area (Yoho Field);
* Outline mitigation measures of identified impacts;
* Develop an environmental management plan (EMP) for the proposed project;
* Prepare and submit draft and final EIA reports for Yoho development wells drilling project; and
* Participate in any public hearing/technical review of the draft EIA report.
	1. EIA Methodology

The preliminary action taken prior to the commencement of the EIA process is stated hereunder while the approach adopted in conducting the study is illustrated in **Figure 1.3**.

***Preliminary Activities***

Preliminary activities included contracting processes, registration of project and preparation / submission of the ToR to FMENV for approval. Literature surveys were conducted to generate information on climate, geology, and the general physical, chemical and biological status of the area as well as identify information gaps. This was achieved through the consultation of existing studies/survey reports, technical publications, textbooks, etc.

**Preliminary**

**Actions**

**Fieldwork (two season sampling)**

**Reporting**

**Debriefing**

Contracting & ToR submission

Project initiation & site visit

Oral presentation

Written report

Client and team

Desktop studies

Preliminary assessment

Sampling/measurements & data collection

Other studies

(bio-diversity, etc)

Fieldwork mobilisation

Field samples/data analysis

Data interpretation

* Clear FMENV and client-driven reporting
* Proffering of mitigation measures
* Continuous improvement

Data / field gathering plan

**Data Analysis**

**&**

**Interpretation**

* In-depth analysis of findings
* Impacts identification, assessment and prediction
* Clear and well-defined instructions
* Early identification of issues including consultation with regulators
* Gap analysis

**Figure 1.3: EIA Methodology**

***Consultation***

Consultations were carried out throughout the project life cycle. MPN carried out consultation with all relevant stakeholders to ensure that their views and opinions concerning the proposed project and its associated and potential impacts are integrated into the EIA process. Also, FNL on behalf of MPN carried out socio-economic consultations within the host communities to create awareness and also integrate the communities’ opinion into the EIA process. The result of such consultations forms the basis for the potential impact assessment which is an integral part of this EIA report. The stakeholders consulted include but not limited to:

* Federal Ministry of Environment (FMENV);
* Department of Petroleum Resources (DPR);
* Akwa Ibom State Ministry of Environment and Mineral Resources (AKSMEMR);
* 16 LGAs and more than 30 coastal communities within Akwa Ibom State;
* Relevant departments within MPN;
* Partners and other relevant stakeholders i.e. NNPC; and
* Relevant security operatives.

***Field Research (Baseline Studies)***

A two - season comprehensive environmental baseline data of the entire project area (OML 104) was established by FNL (wet season [10th – 17th Oct. 2008] and dry season [11th – 18th Feb. 2009]) prior to preparation of this report. The baseline data served as the main working document for the environmental description of this EIA report.

The baseline data covered the following environmental components:

* physical environment - seawater and sediment characteristics, oceanography, as well as air quality and noise; and
* biological environment - seawater and sediment microbiology, benthos / plankta, fisheries and aquatic mammals.

***Potential and Associated Impact Assessment***

The identification/assessment/evaluation of associated and potential impacts of the proposed project generally involved review of industry experience, consultations and expert discussions with multidisciplinary team of engineers and scientists. Potential impact identifications was carried out using various references such as FMENV EIA Sectoral Guidelines for Oil and Gas Industry Projects, the World Bank Environmental Assessment Sourcebook, the existing environment description of the project area as well as the planned project activities.

Evaluation of identified impacts was based on clearly defined criteria (legal/regulatory requirements, risk, and impact frequency, importance of affected environmental component and public interest / concerns). These were used to determine the significance or otherwise of identified impacts. The Risk Assessment Matrix (RAM) was also used to determine the risks posed by the identified potential and associated impacts in order to proffer appropriate mitigation measures. In predicting impacts, the experiential/practical ‘worst case scenario’ approach was applied to determine the extreme effects of project activities on environmental components, while ‘consensus of opinions’ was used to determine the importance of affected environmental components. The impact evaluation results therefore formed the basis for developing the EMP for the proposed project.

***Impact Mitigation and Control***

All significant impacts identified were considered for mitigation through preventive, reductive/enhancement and remedial strategies and control measures. Mitigation measures were identified, described and recommendations incorporated in the proposed development to minimize or avoid the key impacts highlighted via the use of Risk/Hazard Mitigation Measures Matrix. Where the effectiveness of mitigation measures is uncertain, or depends on assumptions about operational procedures, monitoring programmes and/or management procedure defines the required practice.

***Environmental Management Planning***

The EMP specified guidelines for ensuring conformance of project implementation with the procedures, practices and recommendations outlined in the EIA report. In this way, it will ensure that the commitments inherent in the assessment are fully managed and that the unforeseen and unidentified impacts of the project are detailed and resolved.

The plan as a minimum includes:

* compliance with known regulations and other legal requirement;
* personnel sourcing and assignment of responsibilities;
* ensuring conformance of detailed design with concept design;
* ensuring conformance of construction/installation activities with specified standard practices and philosophies;
* ensuring conformance of operations and maintenance activities with specified standard practices and philosophies;
* developing the procedures for dealing with changes and project modifications;
* developing contingency plan;
* developing waste management plan;
* developing inspection, auditing and monitoring guidelines for all phases of project; and
* developing decommissioning / abandonment of plan.

***Documentation***

This EIA process has been documented in accordance with regulatory requirements and guidelines. The technical output has also been written / produced to reflect the various stages and aspect of the EIA process as stated in the FMENV EIA procedural guidelines.

**1.9 Legal and Regulatory Requirements**

Legal and regulatory frameworks that pertain to this EIA study are articulated below.

**1.9.1 National and State Legislations and Regulations**

The principal body responsible for environmental matters in Nigeria is the FMENV. However, the Department of Petroleum Resources (DPR) complements the FMENV in policing the oil and gas sector. Consequently, the following policies and regulations have been instituted.

***Federal Ministry of Environment***

The Federal Ministry of Environment since inception as FEPA in 1988 by Act 58 of 1988 and subsequent amendment through Act 59 of 1992 has been empowered with the overall responsibility of environmental matters in Nigeria. It has developed instruments of intervention to halt environmental degradation in form of policies, standard, guidelines, regulations and programmes. With the initiation of these instruments, enforcement by FMENV has become the most effective tool to bring industries and regulated community into compliance through compliance promotions. These policies are as follows:

*Environmental Impact Assessment Act*

The EIA Act No. 86, 1992 stipulates that the public or private sector of the economy shall not embark on or undertake or authorise projects or activities without prior consideration, at an early stages of the environmental effects. Where the extent, nature or location of a proposed project or activity is such that it is likely to significantly affect the environment, its EIA shall be undertaken in accordance with the provisions of the Act.

*EIA Sectoral and Procedural Guidelines for Oil and Gas Industry*

The FMENV in 1995, published the EIA Sectoral Guidelines for oil and gas projects among others. The guidelines are intended to assist in the proper and detailed execution of EIA of projects in consonance with the EIA Act of 1992. The procedural guideline also prescribes the procedure for conducting and reporting EIAs.

*National Environmental Policy*

The National Policy on Environment, 1989, defines guidelines and strategies for achieving the policy goal of sustainable development by:

* securing for all Nigerians a quality of environment adequate for their health and well-being;
* conserving and using the natural resources for the benefit of present and future generations;
* restoring, maintaining and enhancing the ecosystem and ecological processes essential for the preservation of biological diversity;
* raising public awareness and promoting understanding of the essential linkages between the environment, resources and development; and
* co-operation with other countries, international organisations and agencies to achieve optimal use of trans-boundary in order to prevent environmental recourses.

Based on this policy, the National Guidelines and Standards for Environmental Pollution Control in Nigeria were published in March 1991 to serve as a basic instrument for monitoring and controlling industrial and urban pollution. The main thrust of the guidelines and standards are:

* effluent limitations;
* pollution abatement in industries;
* water quality or industrial water uses at point of intake;
* industrial emission limitations; and
* management of solid and hazardous wastes;

*National Effluent Limitation Regulation*

The National Effluent Limitation Regulation, S. 1.8 of 1991 (No. 42, Vol. 78, August, 1991) makes it mandatory for industries as waste generating facilities to install anti-pollution and pollution abatement equipment on site. The regulation is specific for each category of waste generating facility with respect to limitations of solid and liquid discharges or gaseous emissions into the ecosystem. Appropriate penalties for contravention are also prescribed.

*Pollution Abatement in Industries Generating Wastes Regulation*

The Pollution Abatement Regulation, S.1.9 of 1991 (No. 42, Vol. 78, August, 1991) imposes restrictions on the release of toxic substances and stipulates requirements for pollution monitoring units, machinery for combating pollution and contingency plan by industries; submission of lists and details of chemicals used by industries to Federal Ministry of Environment (FMENV); requirement of permit by industries for the storage and transportation of harmful or toxic waste; the generator’s liability; strategies for waste reduction; permissible limits of discharge into public drains; protection of workers and safety requirements; environmental audit (or environmental impact assessment for new industries) and penalty for contravention.

*Management of Hazardous and Solid Wastes Regulation*

The Management of Hazardous and Solid Waste Regulation, S.1.15 of 1991 (No. 102, Vol. 78, August, 1991) defines the requirements for groundwater protection, surface impoundment, land treatment, waste piles, landfills, incinerators etc. It also describes the hazardous substances tracking programme with a comprehensive list of acutely hazardous chemical products and dangerous waste constituent. It also states the requirements and procedure for inspection, enforcement and penalty.

***DPR Requirements for EIA***

The operations of oil and gas industry in Nigeria are governed by the Petroleum Act 1969. Section 8(1) b (iii) of the Act empowers the Federal Ministry of Petroleum Resources to make regulations for the prevention of pollution. In order to effectively plan, protect and prudently enhance the environmental resources in the areas of development of the oil industry in Nigeria, the Department of Petroleum Resources (DPR) was set up by Section 191 of NNPC Act, 1979.

DPR requires, by legislation, that holders of exploration, prospecting, exploitation, refining, transportation and marketing licenses of petroleum resources take/adopt practical precautions and all steps practicable to prevent pollution, and cause as little damage as possible to the environment in their areas of operation.

Consequent upon growing concern for adverse environmental impacts or damages arising from the oil related pollution, the DPR in 1991 issued Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (EGASPIN). The EGASPIN, which was revised in 2002, focuses on the monitoring, handling, treatment, and disposal of effluents, oil spills and chemicals, drilling muds and drilling cuttings from oil / gas production activities.

Some regulations enforced by the DPR are: Regulation 25 and 36 of the Petroleum (Drilling and Production) Regulations 1969; Part III Section 7 and Part IV Sections 44 and 45 of the Minerals Oils (Safety) Regulations, 1963; the Petroleum Regulations, 1967; the Oil in Navigable Waters Act No. 34 / Regulation 1968.

*Oil in Navigable Waters Act / Regulation*

The Oil in Navigable Waters Act and Regulations of 1968 are designed to tackle the problem of oil pollution at sea within 80km from land and outside the territorial waters of Nigeria, and in other geographically designed sea zones around the world. The Act was enacted following the adoption by Nigeria of the International Convention of Pollution of the Sea by Oil in 1954. The convention was amended in 1969, and the Act is worded to incorporate amendments to the Convention. Section 3(1) of the Act provides as follows: The master of every Nigerian ship not being a tanker of 80tons gross tonnage or over, which uses fuel oil, shall maintain such record as relates to the following, that is:

* any occasion on which oil or a mixture containing oil or a mixture containing oil is discharged from ship for the purpose of securing the safety of any vessel or of preventing damage to any vessel or cargo;
* any occasion on which oil or a mixture containing oil is found to be escaping, or to have escaped, from any such ship in consequence of damage to the ship or by reason of leakage;
* operations for carrying out on board or in connection with any ship relating to:
* the ballasting of oil tanks (whether cargo or bunker fuel tanks) and the discharge of ballast from, and cleaning of such tanks, or
* the separation of oil from water, or from other substances in any mixture containing oil, or
* the disposal of any oil or water, or any other substance arising from operations relating to any of the matters specified in the preceding sub-paragraphs, or any other substance arising from operations relating to any of the matters specified in the preceding sub-paragraphs, or
* the disposal of any other oil residues.

This Act provides for the maintaining of an oil record book, policing the ban on oil pollution and the procedure for detection, identification and prosecution of offenders.

*Petroleum (Drilling and Production) Regulations*

The Petroleum regulation was promulgated in 1969. Regulation 25 states that “the licensee or lessee must adopt all practicable precautions, including the provision of up-to-date equipment approved by the Chief Petroleum Engineer, to prevent the pollution of inland waters, rivers, water courses, the territorial waters of Nigeria or the high seas by oil, mud or other fluid substances which might contaminate the water, banks or shoreline or which might cause harm or destruction to freshwater or marine life, and where such pollution occurs or has occurred, shall take prompt steps to control and, if possible end it.

Also in the regulation, references are made to conduct operations in a manner consistent with “good oilfield practice”, “in a proper and workmanlike manner”, and to land pollution. Some references impose, express or implied obligation on the operator to conduct his operations in a manner as not only to conserve petroleum resources but also prevent environmental pollution.

Regulation 36 requires that the licensee or lessee maintain all apparatus and appliances in use in his operations, and all boreholes and wells capable of producing petroleum, in good repair and condition, and shall carry out all his operations in a proper and workmanlike manner in accordance with these and other relevant regulations and methods and practices accepted by the Chief Petroleum Engineer as good oilfield practice; and without prejudice to the generality of the foregoing he shall, in accordance with those practices, take all steps practicable to:

* control the flow and to prevent the escape of avoidable waste of petroleum discovered in or obtained from the relevant area;
* prevent damage to adjoining petroleum-bearing strata;
* except for the purpose of secondary recovery as authorized by the Chief Petroleum Engineer, to prevent the entrance of water through boreholes and wells to petroleum-bearing strata; and
* prevent the escape of petroleum into any water, well, spring, stream, river, lake, reservoir, estuary or harbour.

*Mineral Oils (Safety) Regulations*

The Mineral Oils (Safety) Regulations of 1963 as amended in 1997 requires license or lease to ensure that handling and disposal of liquid and solid waste including deck drainage, sanitary and domestic wastes, and accidental oil spills shall conform to requirements of the DPR.

*National Environmental Standards and Regulations Enforcement Agency (NESREA) Act, 2007*

Administered by the Ministry of Environment, this Act replaced the Federal Environmental Protection Agency (FEPA) Act. It is the embodiment of laws and regulations focused on the protection and sustainable development of the environment and its natural resources. The following sections are worth noting:-

* Section 7 provides authority to ensure compliance with environmental laws, local and international, on environmental sanitation and pollution prevention and control through monitory and regulatory measures.
* Section 8 (1)(K) empowers the Agency to make and review regulations on air and water quality, effluent limitations, control of harmful substances and other forms of environmental pollution and sanitation. Section 27 prohibits, without lawful authority, the discharge of hazardous substances into the environment. This offence is punishable under this section, with a fine not exceeding, N1, 000,000 (One Million Naira) and an imprisonment term of 5 years. In the case of a company, there is an additional fine of N50, 000, for every day the offence persists.

***National Effluent Limitation Regulations.***

* **Section 1**-requires industry facilities to have anti-pollution equipment for the treatment of effluent.
* **Section 3** -requires a submission to the agency of a composition of the industry’s treated effluents.
* National Environment Protection (Pollution Abatement in Industries and Facilities producing Waste) Regulations (1991).
* **Section 1**-Prohibits the release of hazardous substances into the air, land or water of Nigeria beyond approved limits set by the Agency.
* **Section 4 and 5** -requires industries to report a discharge if it occurs and to submit a comprehensive list of chemicals used for production to the Agency.

***Federal Solid and Hazardous Waste Management Regulations (1991).***

* **Section 1**-makes it an obligation for industries to identify solid hazardous wastes which are dangerous to public health and the environment and to research into the possibility of their recycling.
* **Section 20**-makes notification of any discharge to the Agency mandatory.
* **Section 108**-stipulates penalties for contravening any regulation.

*National Oil Spill and Detection and Response Agency (NOSDRA) Act, 2006*

The National Oil Spill Detection and Response Agency (NOSDRA) was established by Act No. 15 of 2006 as a deliberate and articulate response by the Federal Government to the persistent environmental degradation and devastation of the coastal ecosystem especially, in the oil-producing areas of the Niger-Delta region. NOSDRA is statutorily empowered to co-ordinate oil spill management and ensure the implementation of the National Oil Spill Contingency Plan (NOSCP) for Nigeria in accordance with the International Convention on Oil Pollution Preparedness, Response and Co-Operation (OPRC) 1990, which Nigeria has ratified. The NOSCP is a blueprint for checking oil spill through, containment, recovery and remediation/restoration. It was drafted in 1981 and first reviewed in 1997, and further reviewed in 2000 and 2006.

***Nigerian Maritime Administration and Safety Agency (NIMASA) Act, 2007***

Nigerian Maritime Administration and Safety Agency created by the Nigerian Maritime Administration and Safety Agency Act, 2007. NIMASA is the regulatory Agency for all matters relating to maritime safety and security, marine environment, shipping and maritime labour. The jurisdiction of the Agency covers ships, small ships and crafts both Nigerian and foreign flagged operating in Nigerian waters which encompasses the exclusive economic zone, territorial, inland seas, inland waterways and ports within Nigeria1. The Act expressly excludes warships and military patrol ships from the jurisdiction of NIMASA. The functions of the Agency stated very broadly are to:

* promote the development of indigenous commercial shipping;
* guarantee maritime safety and security;
* undertake management of marine environment;
* oversee maritime labour matters;
* ensure enforcement of the cabotage regime under Cabotage Act 2003; and
* ensure implementation of international conventions on maritime safety and security.

***Akwa Ibom State Ministry of Environment and Mineral Resources***

The Akwa Ibom State Ministry of Environment and Mineral Resources (AKSMEMR) have the responsibility for environmental protection, preservation and conservation in the state. However, implementation of its policies, for instance on waste management, is handled by subsidiary agencies such as the Akwa Ibom State Environmental Protection and Waste Management Agency. With respect to the proposed project, the Akwa Ibom Environmental Protection and Waste Management Agency Law No. 8 of 2000 states that:

* no person shall discharge any form of oil, grease or spent oil produced in the course of any manufacturing operation or other type of business into any public drain, watercourse, water gorge or road verge. Any such waste which is to be discharged by the person generating it shall have been certified as having complied with set-down and approved standards by the Agency;
* no person shall discharge into the air inadequately filtered and purified industrial gaseous waste containing substances injurious to life and property, such as sulphur dioxide, oxides of nitrogen, hydrogen fluoride, sulphide, carbon monoxide, ammonia, chlorine, smoke and metallic dust, particulate and other injurious gases;
* no person shall dump or burn or cause or allow to be buried or dumped in any land or water any toxic, hazardous substance or harmful waste;
* no person shall establish petrol stations, gas plants or other petroleum related activities without adherence to approved environmental standards; and
* no person shall engage in any form of petroleum exploration or production activities which cause pollution of the environment through spillage.

**1.9.2 MPN Policies and Guidelines on Safety, Health, and Environment (SHE)**

MPN is committed to conduct business in a manner that protects the safety and health of employees, others involved in its operations, its customers, and the public. Furthermore, it is committed to conduct business in a manner that is compatible with the balanced environmental and economic needs of the communities in which it operates. This commitment requires compliance with all applicable laws and regulations, facilities which are designed and operated to high standards, and systematic identification and management of risks. Serving as cornerstones in MPN’s efforts to reach these goals are MPN’s policies on Safety, Health, and the Environment as summarised in the text below.

***MPN Safety, Health and Environment Policy***

It is MPN's policy to conduct its business in a manner that is compatible with the balanced environmental and economic needs of the communities in which it operates.

Accordingly, MPN's policy is to:

* Comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist;
* Encourage concern and respect for the environment, emphasize every employee's responsibility in environmental performance and ensure appropriate operating practices and training;
* Work with government and industry groups to foster timely development of effective environmental laws and regulations based on sound science and considering risks, costs and benefits, including effects on energy and product supply;
* Manage its business with the goal of preventing incidents and of controlling emissions and wastes to below harmful levels and design, operate and maintain facilities to this end;
* Respond quickly and effectively to incidents resulting from its operations, cooperating with industry organizations and authorized government agencies;
* Conduct and support research to improve understanding of the impact of its business on the environment, to improve methods of environmental protection, and to enhance its capability to make operations and products compatible with the environment;
* Communicate with the public on environmental matters and share its experience with others to facilitate improvements in industry performance.
* Undertake appropriate reviews and evaluations of its operations to measure progress and to ensure compliance with this policy.
* Design and maintain facilities, establish management systems, provide training and conduct operations in a manner that safeguards people and property.
* Respond quickly, effectively, and with care to emergencies or accidents resulting from its operations and to cooperate with industry organizations and authorized government agencies.
* Identify and evaluate any health risks related to its operations that could potentially affect its employees, contractors, or the public.
* Implement programs and appropriate protective measures to control such risks, including appropriate monitoring of its potentially-affected employees.

***MPN Standards, Procedures and Guidelines***

MPN uses its Operations Integrity Management System (OIMS) to provide a structured approach in its management of these environmental, safety, and health aspects in order to meet the commitments stated above. MPN’s OIMS system is discussed in Chapter 7.

In addition to MPN's OIMS, a number of systems and plans support the implementation of the Safety Health and Environment policy above. These include but not limited to the following:

* MPN Environmental Management Manual.
* MPN Waste Management Plan.
* MPN Environmental Monitoring Programme.
* MPN Oil Spill Contingency Plan.
* Risk Assessment and Management System Manual.
* MPN Emergency Preparedness and Response.
* MPN Reclamation and Remediation Plan.
* MPN Incident Management Manual.
* Compliance with Laws, Regulations and Permits.

**1.9.3 International Laws and Conventions**

International laws and convention that concerns the project and of which Nigeria is signatory are:

*World Bank Guidelines and Standards*

In recent years, environmentally sustainable development has become one of the most important challenges facing international development institutions such as the World Bank. Accordingly, the Bank has introduced a variety of tools (Environmental Assessment being one of the most important) aimed at promoting sustainability through:

* the application of social and environmental safeguard policies;
* providing tools for evaluating country environmental priorities, such as the country environmental analysis, environmental assessments and public expenditure reviews;
* pragmatic strategies such as those for water resources, rural and social development; and
* shaping its programs to support initiatives such as community driven development.

According to the World Banks’ Operational Directive 4.00 of 1989 (Environmental Assessment), subsequently amended as Operational Directive 4.01 in 1991, Environmental Assessment (EA) is designed to be a flexible process that makes environmental considerations an integral part of project preparation and allows environmental issues to be addressed in a timely and cost effective way during project preparation and implementation. The banks EA process involves screening; scoping; development of terms of reference (ToR); preparing the EA report; report review, project appraisal and implementation. Its three volumes EA Sourcebook (1991), provides an important source of EA information for various development projects.

***Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Waste within Africa***

Recalling relevant chapter of the Charter of the Organisation of African Unity (OAU), (now African Union [AU]) on environmental protection, the African Charter for Human and People’s Rights, Chapter IX of the Lagos Plan of Action and other Recommendations adopted by the Organisation of African Unity on the environment. The convention further recognizes the sovereignty of states to ban the importation into, and the transit through, their territory, of hazardous waste and substances for human health and environmental reasons. This is mindful of the growing threat to human and the environment posed by the increase generation and the complexity of hazardous waste.

The convention took into account the Declaration of the United Nations Conference on the Human Environment (Stockholm 1972), the Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Waste adopted by the Governing Council of the United Nations Environment Programme (UNEP) by Decision 14/30 of 17 June, 1987, the Recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods (formulated in 1957 and updated biennially), the Charter of Human Rights, relevant recommendations, declarations, instruments and regulations adopted within the United Nations System, the relevant articles of the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their disposal which allow for the establishment of regional agreements which may be equal to or stronger than its own provisions, Article 39 of the Lome IV Convention relating to the international movement of hazardous waste and radioactive waste, African intergovernmental organisations and the work and studies done within other international and regional organisations.

***International Convention for the Prevention of Pollution from Ships***

This convention was adopted on 2 November 1973 at International Maritime Convention (IMO) and covered pollution by oil, chemical, harmful substances in packaged form, sewage and garbage. The protocol of 1978 relating to the 1973 convention (1978 MARPOL Protocol) was adopted at a Conference on Tanker safety and pollution prevention in February 1978. The convention includes regulations aimed at preventing and minimizing pollution from ships – both accidental pollution and that from routine operations. This convention contains the following annexes:

*Annex I – Regulations for the Prevention of Pollution by Oil*

This annex was put into force in 2 October 1983. The regulation maintained the oil discharge criteria prescribed in the 1969 amendments to the 1954 Oil Pollution Convention, without substantial changes namely:

Operational discharges of oil from tankers are allowed only when all of the following conditions are met:

Tankers are prohibited from discharging oil or oily mixture anywhere except when

* more than 50miles from the nearest land;
* the rate of discharge from cargo-carrying spaces does not exceed 60 litres / km; and
* the total discharge on a ballast voyage does no exceed 1/15000 part of total cargo-carrying capacity.

The Convention provides for the maintenance of an Oil Record Book, policing the ban on oil pollution and procedure for detection, identification and prosecution of offenders.

*Annex II – Control of Pollution by Noxious Liquid Substances*

This annex was instituted in 6 April 1987 and details the discharge criteria and measures for the control of pollution by noxious liquid substances carried in bulk. About 250 substances have been evaluated and prohibited from discharge (especially within 12 miles of the nearest land) except retained only to reception facilities until certain concentrations and conditions are complied.

*Annex III – Prevention of Pollution by Harmful Substances in Packaged Form*

This annex contains the general requirements for the issuing of detailed standards on packing, marking, labeling, documentation, stowage, quantity limitations, exceptions and notifications for preventing pollution by harmful substances.

*Annex IV – Prevention of Pollution by Sewage from Ships*

This came into law in 27 September 2003 and contains requirements to control pollution of the sea by sewage.

*Annex V – Prevention of Pollution by Garbage from Ships*

This annex was promulgated in 31 December 1988 and deals with different types of garbage as well as specifies the distances from land and the manner in which they may be disposed of. It imposes ban on the dumping into the sea of all forms of plastics.

***International Convention on Civil Liability for Oil Pollution Damage***

The Convention as amended up to 1971 provides uniform international rules and procedures for determining the question of liability and providing adequate compensation to persons who suffer damage caused by the escape or discharge of oil from ships.

The Convention embodied the following fundamental principles:

* strict liability of the ships,
* compulsory insurance,
* highest liability that is insurable, and
* establishment of international Compensation Fund.

***Oil Pollution and Exploitation of the Continental Shelf***

The Geneva Convention on the High Seas (1958) and the Continental Shelf Convention (1958) contain rules designed to prevent or minimize oil pollution arising from exploitation of the Continental Shelf or the exploitation of its natural resources.

* The Geneva Convention on the High Seas (1958) article 24 requires States to: “draw up regulations to prevent pollution of the seas by discharge of oil from ships or pipelines or resulting from the exploitation and exploration of the sea-bed and its subsoil, taking account of existing treaty provisions on the subject”.
* The Geneva Convention on the Continental Shelf (1958). Rules under this Convention provide that: exploration and exploitation must not result in any unjustifiable interference with navigation, fishing or the conservation of the living resources of the sea.

***Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter***

This convention known as the London Convention of 1972 has been replaced by the 1996 Protocol which was adopted on 7 November 1996, and entered into force on 24 March 2006.

*The 1996 Protocol*

The 1972 Convention permits dumping to be carried out provided certain conditions are met. The severity of these conditions varies according to the danger to the environment presented by the materials themselves and there is a "black list" containing materials which may not be dumped at all. The 1996 Protocol is much more restrictive, however, permits dumping in certain circumstances.

*Permitted Dumping*

Article 4 states that Contracting Parties "shall prohibit the dumping of any wastes or other matter with the exception of those listed in Annex 1."These are:

* Dredged material
* Sewage sludge
* Fish waste, or material resulting from industrial fish processing operations
* Vessels and platforms or other man-made structures at sea
* Inert, inorganic geological material
* Organic material of natural origin
* Bulky items primarily comprising iron, steel, concrete and similar un-harmful materials for which the concern is physical impact and limited to those circumstances, where such wastes are generated at locations, such as small islands with isolated communities, having no practicable access to disposal options other than dumping.

The only exceptions to this are contained in Article 8 which permits dumping to be carried out "in cases of force majeure caused by stress of weather, or in any case which constitutes a danger to human life or a real threat to vessels..."

IMO is made responsible for Secretariat duties in relation to the Protocol (as it is by the 1972 Convention). Other Articles contain procedures for settling disputes (Article 16) and amendments. Amendments to the Articles shall enter into force "on the 60th day after two-thirds of Contracting Parties shall have deposited an instrument of acceptance of the amendment with the Organization".

***United Nations Convention on Climate Change***

The convention on climate change was signed in 1992 during the Rio Earth Summit but put into force in 1994. The convention calls on developed countries and economies in transition to limit their emissions of the greenhouse gases which cause global warming, although does not impose mandatory emissions restrictions on developing countries.

***Vienna Convention for the Protection of the Ozone Layer***

The convention was instituted in 1985 and places general obligations on countries to make appropriate measures to protect human health and the environment against adverse effects resulting from human activities which tend to modify the ozone layer.

***Convention on Conservation of Migratory Species of Wild Animals***

This convention also known as the Bonn Convention of 1979 stipulates actions for the conversation and management of migratory species including habitat conservation.

***United Nations Guiding Principles on the Human Environment***

The United Nations (UN), concerned about negative environmental trends since its formation, published two major concept documents: Guiding Principles on the Human Environment, 1972 and the Rio Declaration on Environment and Development. Ten of these Guiding Principles were defined as formal declarations that express the basis on which an environmental policy can be built and which provide a foundation for action. The principles relevant to the proposed project are summarised below.

*Principle 2*

The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.

*Principle 3*

The capacity of the earth to produce vital renewable resources must be maintained and, wherever practicable, restored or improved.

*Principle 6*

The discharge of toxic substances or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon the ecosystems. The just struggle of the peoples against pollution should be supported.

*Principle 7*

States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.