.

Final draft

Revised

NATIONAL OIL SPILL CONTINGENCY PLAN

Ghana's
"National Contingency Plan to Combat Pollution by Oil and Other Noxious and Hazardous Substances"

January
2010

AMENDMENTS

Suggested amendments or additions to the contents of this National Oil Spill Contingency Plan are to be forwarded in writing to:

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Amendments received are to be recorded in the following table:

Version	Amendment	Date	Signature	Date Received
2.0	Complete review and reprint	March 2002		
3.0	Complete review and reprint	December 2005		
4.0	Complete review and reprint	November 2009		

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ABBREVIATIONS AND ACRONYMS

COWG	Chemical Operations Working Group
EEZ	Exclusive Economic Zone
EPA	Environmental Protection Agency
EWG	Environment Working Group
GMA	Ghana Maritime Authority
GPHA	Ghana Ports & Harbours Authority
GNPC	Ghana National Petroleum Corporation
HOSR	Head of Oil Spill Response
IAA	Inter-Agency Agreement
IMO	International Maritime Organisation
IPIECA	International Petroleum Industry Environment Conservation Association
MARPOL	International Convention on Prevention of Pollution from Ships 1973 and its 1978 Protocol thereto
NCP	National Contingency Plan
NOSAB	National Oil Spill Advisory Board
NOSCP	National Oil Spill Contingency Plan
NPMC	National Contingency Plan Management Committee
NPOG	National Contingency Plan Operations Group
OOWG	Oil Operations Working Group
OPRC	Oil Pollution Preparedness Response and Cooperation
OSC	On-Scene Commander
OSRICS	Oil Spill Response Incident Control System
UNEP	United Nations Environment Programme
UNCLOS	United Nations Convention on the Law of the Sea
WACAF	West and Central Africa Co-operation

GLOSSARY OF TERMS

Abidjan Convention: Means the Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central Africa Region (the Abidjan Convention, 1981)

Baseline of the territorial sea: is the low water mark along the coast of Ghana.

Bioremediation: the process of using living organisms to break down the molecular structure of oil into less complex substances that is not hazardous or regulated. This is often undertaken using hydrocarbon-eating microbes introduced to a contaminated site in large numbers. Nutrients are often added to speed up the organisms' digestion of the oil, and reproduction.

Cargo vessel: a vessel carrying non-petroleum products which exceed 100 tonnes gross registered tonnage (GRT).

Catastrophic spill: large-scale spill owing to unusual conditions, which is likely to have severe environmental consequences, and where the likelihood of occurrence is impossible to predict.

Chemical dispersant: a chemical formulation containing non-ionic surface active agents that lower the surface tension between oil and water, and enable oil film to break up more easily and disperse within the water with natural or mechanical agitation.

Clean-up: (see also Oil spill response)

Continental shelf: the sea bed and subsoil of those submarine areas that extend beyond the territorial limits of Ghana, throughout the natural prolongation of the landed territory of Ghana, to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baseline from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend to that distance.

Continental waters: (refer Ghana continental waters)

Contingency plan: a plan for action prepared in anticipation of an incident. In this case the contingency is for an oil spill incident. The contingency plan prepared for a site or region usually consists of guidelines and operating instructions intended to increase the efficiency and effectiveness of clean-up operations and to protect areas of biological, social and economic importance.

Exclusive Economic Zone (EEZ): all marine waters seaward to a distance of 200 nautical miles from the baseline

Harbour waters: within harbour limits.

Harmful Substances: any substance, which if introduced into the sea, and terrestrial ecosystems is liable to create hazards to human health, living resources and marine and fresh water life, to damage amenities or to interfere with other legitimate uses of the sea or inland waterways, and includes any substance subject to control by MARPOL 73/78 Convention.
Hydrocarbon:

Individual site: a shore-based site where oil is stored in bulk.

Internal waters of Ghana: includes any areas of the sea that are on the landward side of the baseline of the territorial sea of Ghana.

IMO/IPIECA: International Maritime Organization/International Petroleum Industry Environmental Conservation Association

Ghana continental waters: includes Ghana marine waters and those waters beyond the outer limit of the exclusive economic zone of Ghana but over the continental shelf of Ghana.

Ghana marine waters: includes the territorial sea of Ghana and the waters of the exclusive economic zone of Ghana.

Marine waters: refer Ghana marine waters.

MARPOL 73/78: the International Convention on Prevention of Pollution from Ships 1973 and its 1978 Protocol thereto.

Maximum credible spills: the greatest spill that could be expected from the range of hazards (eg, shipping movements, bunkering, or bulk transfer) which are present at a specific location.

NCP: means National Contingency Plan

National Contingency Plan: the response plan for combating pollution by oil and other noxious and hazardous substances and produced by the Environmental Protection Agency in consultation with relevant national stakeholders under the auspices of the Ministry responsible for the Environment.

National Chemical Spill Contingency Plan: the chemical spill response plan produced by the Environmental Protection Agency in consultation with relevant national stakeholders under the auspices of the Ministry responsible for the Environment.

NOSCP: means National Oil Spill Contingency Plan

National Oil Spill Contingency Plan: the oil spill response plan produced by the Environmental Protection Agency in consultation with relevant national stakeholders under the auspices of the Ministry responsible for the Environment.

National Oil Spill Advisory Board: refer to Section 2.1.3

Net environmental benefit: a process of weighing the advantages and disadvantages of taking a particular course of action (such as dispersant spraying), including recognising the likely outcomes if the course of action is not taken (the impact of doing nothing). The result will determine if there will be a net (overall) beneficial or detrimental outcome of taking the action.

Offshore Unit: means any fixed or floating offshore installation or structure engaged in gas or oil exploration, exploitation or production activities, or loading or unloading of oil.

Oil: any petroleum in any form including crude oil, fuel oil, sludge, oil refuse, and refined products (other than petrochemicals).

Oil industry: producers, refiners and marketers of oil, and associated carriers and service contractors.

Oil pollution incident: means an occurrence or series of occurrences having the same origin, which results or may result in a discharge of oil and which poses or may pose a threat to the geographical area of coverage as defined in section 1.6 or related interests of one or more States, and which requires emergency action or other immediate response.

Oil spill: means the actual or probable release, discharge, or escape of oil into the internal waters of Ghana or Ghana marine waters.

Oil spill response: actions taken to confirm the presence of an oil spill, stop its flow from the source, contain it, collect it, protect areas from damage by it, mitigate its effects on the environment, and clean up wildlife and areas contaminated by it.

On-Scene Commander (OSC): the person responsible for the control and management of the marine oil spill clean-up.

Oil transfer site: includes any land, site, building, structure, or facility (whether on land or above the sea) that is used to transfer oil to, at or from which oil is transferred to or from a ship or offshore installation.

OPRC 90: International Convention on Oil Spill Preparedness, Response and Co-operation 1990.

Persistent oil: oils and petroleum products such as crude oils, fuel oils and lubrication oils that, when spilt, remain after weathering in a residual form in the environment for an appreciable period.

Pollution: the introduction of contaminants into an environment that causes instability, disorder, harm or discomfort to the ecosystem i.e. physical systems or living organisms

Ports and oil handling facilities: means those facilities which present a risk of oil pollution incident and includes, inter alia, sea ports, inland ports, oil terminals, pipelines and other oil handling facilities.

Risk: an index of values derived from assessment of possible oil spill scenarios, where the risk equates to the probability of a particular event occurring, multiplied by a value which represents the magnitude of the impact which the event would create.
Risk = probability x consequences

Safe haven: a place where a vessel can safely anchor or berth to enable measures to be taken to forestall or minimise the effects of damage (eg, to minimise the leakage of oil).

Shipboard Oil Pollution Emergency Plan (SOPEP): a plan required by MARPOL 73/78 Regulation 26 of Annex 1

Ship: means a vessel of any type whatsoever operating in the marine environment or on the inland waterways of Ghana and includes hydrofoil boats, air-cushion vehicles, submersibles, and floating craft of any type.

Site oil spill contingency plan: A plan prepared for a land-based site or offshore installation, which specifies the measures to be taken in respect of a marine oil spill.

Site-specific: Pertaining to one onshore site where oil is stored in bulk.

Territorial Sea: Coastal marine waters extending out to the 12 nautical mile limit.

The ChemPlan: Abbreviated form of the National Chemical Contingency Plan

The Oil Plan: Abbreviated form of the National Oil Spill Contingency Plan

Threat: The possible impact or consequences, which a spill of oil could create if allowed to come in contact with a biological, social or economic resource.

Tier 1: site-specific, and includes most shore-side industry with oil transfer sites, offshore installations and all vessels required to have a shipboard plan. All Tier 1 sites and vessels are expected to plan for and be able to provide a clearly identifiable first response to pollution incidents for which they are responsible.

Tier 2: a medium spill requiring regional and/or national assistance

Tier 3: a large spill requiring national assistance. The Environmental Protection Agency, which manages the National Oil Spill Contingency Plan and is expected to plan for and respond to marine oil spills within the Territorial Sea (12 nautical miles), or within the EEZ and inland oil spills, where the spills exceed the clean-up capability of Tier 1 and 2, or for which no responsible party can be identified.

UNEP means United Nations Environmental Programme

SECTION 1

Introduction

1 INTRODUCTION

Incidents involving tanker accidents on the international scene and national capacity building programmes led to the development of a national capability in 1980s to ensure that Ghana would be prepared to respond to pollution incidents. Ghana would use **The National Contingency Plan to Combat Pollution by Oil and Other Noxious and Hazardous Substances (National Contingency Plan)**.

1.1 Background

The National Contingency Plan has been in operation since 1986 and brings together the combined resources of the nation, and the oil, shipping and exploration industries, to provide a level of preparedness to the threat posed to the environment by oil and chemical spills.

The National Contingency Plan sets out a clear definition of the responsibilities of the major participants: the national and the industries. This is provided in a set of national arrangements by way of an Inter-Agency Agreement (IAA), which also details such matters as divisions of responsibilities, contingency planning, access to national equipment, and the management and control of financial affairs (Appendix 1).

Based on these arrangements the prescribed role of the national, through the Environmental Protection Agency (EPA), is one of coordination and provision of technical advice, logistic and maintenance support, materials and equipment, and training. Additionally, EPA and the industries shall enter into an agreement for mutual assistance and access to the National Contingency Plan and Response equipment stockpiles.

The National Contingency Plan hierarchy outlined in Figure 1 consists of national oil and chemical spill plans, the regional, port, and industry plans.

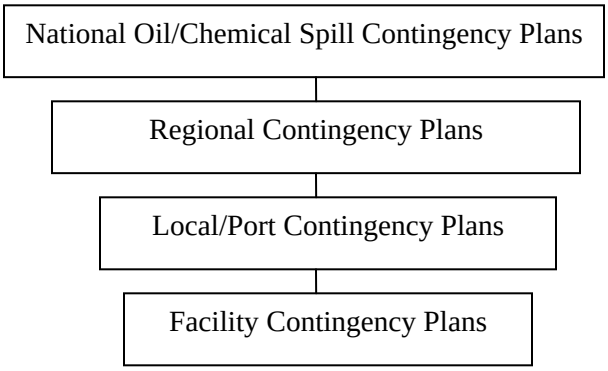

Figure 1: National Contingency Plan Hierarchy

This document relates to the oil spill component of the National Contingency Plan and prescribes procedures and provides information required to implement the

National Oil Spill Contingency Plan.

1.2 Threats

The density of marine traffic, especially oil tankers, in close proximity to the coast and offshore petroleum exploration and production activities, present a fairly high risk of marine pollution from blowouts, collisions, stranding and other marine accidents. Such pollution can threaten amenity beaches, the tourist industry, sea birds, marine life in the inter-tidal zones, coastal installations and fisheries with subsequent loss of revenue and protein sources.

There are about two thousand (2,000) ship visits to Ghanaian ports each year. Ship-sourced pollution may result from either accidental or illegal operational discharges. Accidental discharges may involve escape of bunker fuel or oil cargo resulting from a marine incident.

Furthermore, the Volta Lake is used as a means of transport for petroleum products to the northern part of the country. Thus, a small oil spill on the Volta Lake with its tributaries may cause a serious threat to the rich wildlife, the local fishing and the waterways, which serve as sources of fresh water for the surrounding populated areas.

The threat is largely a function of the types of oil cargo and bunkers carried, the degree of navigational hazards, the weather, and shipping density.

1.3 Aim and objectives of the plan

The aim of this plan is to outline the national arrangements for responding to oil spills in the environment, with the aim of protecting it from oil pollution or, where this is not possible, to minimise its effects.

This plan is also intended to delineate responsibilities for the operational response to incidents which could or result in spillage of oil into the marine and inland waterways as well as landmass environment of the Republic of Ghana as defined in the geographical area of coverage section of this document. The Environmental Protection Agency will have the overall responsibility to deal with any incident involving oil installations, oil pipelines or shipping.

This plan also provides the framework for co-ordination of an integrated response by government agencies and relevant stakeholders to protect the environment from the deleterious effects of pollution from spillage of oil substances. It is intended to promote the development of local plans for ports, inland waterways, oil pipelines, oil installations, and all other storage and transport facilities for oil to respond to such incidents.

Thus the objectives of this plan are to:

a) Identify high-risk areas to oil pollution
b) Develop appropriate systems for monitoring, rapid detection and reporting of spillage of oil or incidents related to the operation of shipping, oil pipelines and all other installations, storage and transport facilities for oil, which could result in such a spillage.
c) Ensure prompt response to prevent pollution and or restrict the spread of the contaminants
d) Ensure that adequate protection is provided for public health and welfare and the marine and inland environment.
e) Ensure that the appropriate response techniques are used to clean up the pollutant and that disposal of recovered material is carried out in accordance with the EPA guidelines and regulations on waste disposal.
f) Ensure that complete and up-to-date records are maintained of all expenditures to facilitate cost recovery.
g) Ensure that personnel and equipment are in a state of readiness
h) Ensure there are adequate funds provided to meet the other objectives of the plan.
i) Ensure that the plan is tested at least every two years.

1.4 Scope of Plan

The National Oil Spill Contingency Plan (The Oil Plan) outlines combined stakeholder arrangements designed to allow a rapid and cooperative response to oil spills occurring within the area defined by this plan. It is complemented by other government and industry contingency plans prepared at regional, port and facility levels. Matters of detail are contained in local, site specific, contingency plans. This Oil Plan coordinates the provision of national and international support.

1.5 Geographical Area

The geographical area covered by the National Oil Spill Contingency Plan includes all Ghanaian Territorial Seas including Ghana's Exclusive Economic Zone (EEZ), and the High Seas, as detailed in Figure 2, where an oil spill has the potential to impact on Ghanaian interests.

The Oil Plan covers the land territories including the coastline of the Republic of Ghana and the areas and waters as defined in the Maritime Zones Law and the Territorial Seas, 1986; (P.N.D.C.L. 159).

a. **Responsibility Area:** The area of responsibility for the National Oil Spill Contingency Plan will include all the areas offshore within the 200 nautical mile Exclusive Economic Zone and all the area within the interior boundaries of Ghana.

b. **Interest Area:** The area of interest will apply to all areas outside the area of responsibility, which could affect the country of Ghana. Spills in the area of interest will be monitored in co-operation with neighbouring countries to

lessen the impact of the incident in the event that the spill is carried to the area of Ghana's responsibility by the action of wind, ocean currents or natural drainage.

1.6 Designed Spill Size

The National Oil Spill Contingency Plan is established to respond to oil spills of any size in Ghanaian waters. For planning and operational reasons and based on the experience of spills and international criteria, a designed spill size of 21,000 tonnes is envisaged. This has been determined by the stakeholders of the National Contingency Plan taking into account current ship type and envisaged equipment holdings and is endorsed as the appropriate level for which to plan equipment and other resource requirements. Additionally, arrangements are in place to augment this capacity from overseas equipment stockpiles should any incident exceed Ghana's resource capability.

Figure 2: *Geographical Area*

1.7 Chemical and Other Incidents

Incidents involving pollution by other substances could fall into two categories:

- **chemicals** released at sea from a chemical tanker's cargo tank as a result of collision, grounding, fire, and operational or illegal discharge.
- **packages or containers** lost at sea and washed ashore or sinking to the seabed.

Ghana is seeking assistance from International Maritime Organisation (IMO) and International Petroleum Industry Environment Conservation Association

(IPIECA) to develop capacity in procedures dealing with the response to chemicals incidents. When this assistance is concluded the procedures would be outlined in a National Chemical Spill Contingency Plan (The ChemPlan).

1.8 Legislation

1.8.1 International Conventions

As a Party to the United Nations Convention on the Law of the Sea (UNCLOS), Ghana has an obligation to protect and preserve the marine environment.

Ghana is a member of the International Maritime Organization (IMO) and active in the development and implementation of the IMO Conventions that specifically address pollution from ships.

Ghana also signed the Oil Pollution Preparedness Response and Cooperation (OPRC) Convention to collaborate with the international community to mitigate the consequences of oil pollution accidents involving ships, offshore units, seaports and oil handling facilities. Ghana is under obligation under the convention to undertake a number of activities: These include putting in place an effective oil spill contingency plan, cooperate to provide assistance to other parties to the convention in case of oil spill accidents, to ensure that oil pollution incidents are reported to competent authorities and International Maritime Organisation (IMO) as appropriate, and to develop a national preparedness and response capability to deal with oil spill incidents.

This plan is one of the measures that Ghana has taken to meet these obligations

1.8.2 National

By the Environmental Protection Agency (EPA) Act 490 of 1994, the Environmental Protection Agency is responsible for controlling pollution into the environment and enforcement of relevant laws relating to protection of the environment.

1.8.3 Other National Legislation

Act	Objectives	Remark

1.8.4 Authorization

The Oil Plan is the result of a careful and advance planning which has involved all relevant governmental bodies and private organizations or enterprises covered by the plan or which in case of a major oil spill could be involved in the response operation. The plan has been developed with the purpose of covering all oil spill incidents.

Corrections and amendments to the plan would be done under the auspices of the Environmental Protection Agency, which is hereby designated as the custodian of the National Oil Spill Contingency Plan. The plan is hereby authorized as the National Oil Spill Contingency Plan of the Republic of Ghana and forms the national background for Ghana's participation in the West and Central Africa Co-operation (WACAF) and also Oil Pollution, Preparedness, Response and Co-operation (OPRC) and other relevant international conventions.

SECTION 2

Preparedness

2.0 PREPAREDNESS

In line with established international practice, Ghana has adopted a three-tiered approach to all aspects of oil spill preparation and response. Local/Industry (Tier 1), Regional Statutory Agency directing the Area response efforts, and EPA directing the National (Tier 2) response efforts, all have clear roles and responsibilities as described in Sections 2.2 to 2.3 and Appendix 1.

2.1 Plan Support

As outlined in Section 1.1, the National Contingency Plan is underpinned by the Inter-Agency Agreement (IAA). The IAA aims to:

- provide a basis for continued national, and local government commitment and support for the National Contingency Plan;
- provide a stable reference point whereby those unfamiliar with the National Contingency Plan can readily ascertain the obligations placed on their organisation; and
- be used to set out agreed minimum activities, allowing participants' performance against those minimums to be more readily assessed.

The IAA ensures that the national approach to preparedness and response to oil and chemical spills is continued and strengthened. It provides a mechanism to ensure decision-making under the National Contingency Plan is cooperative and that the obligations of all parties are met.

The IAA also outlines a management structure for the National Contingency Plan that covers all elements of this plan. The management structure consists of:

2.1.2 Ministry responsible for Environment

Under the Act 490, 1994 the Minister responsible for Environment is responsible for protection of the environment of the Republic of Ghana. The Ministry responsible for Environment is therefore Ministerial body responsible to Government for matters connected to the NCP.

2.1.3 National Oil Spill Advisory Board (NOSAB)

The NOSAB, consisting of representatives from relevant ministries and institutions is responsible for promoting technical, financial, scientific, administrative, logistic support and manpower to the National Oil Spill Executing Body (EPA).

The Ministry responsible for Environment shall appoint a Chairman for the NOSAB who shall be the convener of Advisory Board meetings and shall be responsible for its agenda.

2.1.4 National Contingency Plan Management Committee (NPMC)

Under the IAA, a National Contingency Plan Management Committee (NPMC) has been established to provide advice to the NOSAB on the strategic policymaking and funding direction for the National Contingency Plan.

2.1.5 National Contingency Plan Operations Group (NPOG)

Under the IAA, the Parties have also established a National Contingency Plan Operations Group (NPOG) to support the NPMC by considering the overall operational aspects of the National Contingency Plan.

Three working groups further support NPOG. These are:

1. the Oil Operations Working Group (OOWG), which shall consider issues such as the National Oil Spill Contingency Plan, oil spill response equipment and training, fixed wing aerial dispersant spraying and contingency plan audits;
2. the Chemical Operations Working Group (COWG), which shall consider issues such as ChemPlan, and chemical spill response equipment and training; and
3. the Environment Working Group (EWG), which shall address research, development, technology and the environmental and wildlife interests of all the parties to the National Contingency Plan.

2.1.6 Environmental Protection Agency (EPA)

As the managing agency for the National Contingency Plan under the IAA, EPA is responsible for maintaining the National Oil Spill Contingency Plan. EPA's responsibilities also include acting both as a Statutory and a Combat Agency for Ghanaian waters as described in Section 2.2.2 and 2.2.3. During incidents in tier 1 and tier 2, EPA shall provide support to industry and Combat Agencies, as required.

2.1.7 Regional Responsibilities

Under the IAA, a Statutory Agency in each region is responsible for coordinating the local administration and operation of the National Contingency Plan. This may be done in consultation with a regional committee and with due consideration to the relevant regional emergency management arrangements.

2.1.8 National Contingency Plan Key Contacts

Contact details for key National Contingency Plan personnel are provided in Appendix 2.

2.2 Division of Responsibility

2.2.1 Statutory/Combat Responsibilities

The IAA defines authorities with responsibility for combating oil spills within harbours, onshore, in the territorial seas, and on the high seas of Ghana. This includes responsibilities of Statutory and Combat Agencies.

It should be noted that in some cases the Statutory and Combat Agencies will be the same entity.

Responsibilities for responding to oil spills within harbours, on shore, in the territorial seas, and on the high seas of Ghana are shared between EPA, Regional

Statutory Agency, Port Authorities and Corporations, and the oil industry. Responsibilities are given in details below and are summarised in Figure 3.

2.2.2 Statutory Agencies

In accordance with the IAA responsibility for overseeing response action for oil spills, other than those from offshore petroleum operations, is as follows:

- The regional designated Statutory Agency shall be response for Tier 2 spills;
- The EPA, as the national Statutory Agency shall be responsible for Tier 3 spills.

The Statutory Agency is responsible for the institution of prosecutions and the recovery of cleanup costs on behalf of all participating agencies.

2.2.3 Combat Agencies

Combat Agencies have the operational responsibility to take action to respond to an oil spill in the environment in accordance with the relevant contingency plan. Combat Agencies for responding to oil spills in various locations are as follows:

- **At oil terminals** The relevant oil company or terminal operator using terminal arrangements as required shall be response for Tier 1 spills emanating from the terminal.

- **In ports (other than oil terminal in port)**
  The port operator as specified in the relevant contingency plan, using port arrangements as required shall be response for Tier 1 spills emanating from the port.

- **For spills emanating from petroleum operations.**
  The relevant company using industry arrangements as required shall be response for Tier 1 spills emanating from the company's operations.

- **For spills beyond Tier 1 capability.**
  Should a situation develop where the necessary response is beyond the resources of the above Tier 1 Combat Agencies, responsibility for control will transfer to the Statutory Agency, with response assistance from other National Contingency Plan stakeholders as required. Statutory Agencies should enter into predesignated response arrangements with oil terminal operators, which clearly specify the agreed division of responsibilities and terms and conditions for transferring control.

- **For spills which cannot be traced to a particular source immediately.**
  The Statutory Agencies shall also be responsible for spills for which the spiller is not readily identifiable with response assistance from other National Contingency Plan stakeholders as required.

The Combat Agency shall, as soon as possible, undertake preventive and cleanup action or may request another agency to act on its behalf.

Regardless of which agency has lead responsibility, other agencies shall assist as far as is practical, in accordance with requests from the Combat Agency.

In circumstances where the incident has exceeded, or is likely to exceed, the effective response capacity of the Combat Agency, or the response is not being conducted effectively, the Statutory Agency may assume control of the response.

A response by a Combat Agency and/or Statutory Agency does not in any way indicate an admission of liability for the source of the spill or for acceptance of the costs of a spill. Liability for a spill is to be determined by due legal proceedings.

2.3 Cross Border Incidents

In those incidents close to Ghanaian borders, it is essential that high-level consultation and cooperation between the two countries occur, with an objective to ensure a clear delineation of responsibility for the response.
It should be noted that a formal arrangements by way of Memorandum of Understandings or regional agreements that deal with cross border incidents is essential. In this regard Ghana shall works closely with the other parties of the Abidjan Convention to seek and finalize formal arrangements for dealing with cross border incidents.

2.4 Response Policy

The primary aims of an oil spill response are to:

- protect human health and secure their safety;
- minimise environmental impacts; and
- restore the environment, as near as is practicable, to pre-spill conditions.

The environmental impact of an oil spill can be minimised by good management and planning, and by the response actions put into effect by the responsible agency. Such actions will largely depend on several factors including:

- the type of oil(s) involved;
- the size of the spill;
- the location of the spill;
- the prevailing sea and weather conditions at the spill site; and
- the environmental sensitivity of the coastline/site impacted.

2.5 Levels of Response

Under The Oil Plan arrangements, oil spills and the response they require are categorised into three ‘Tiers’. The concept of a tiered response links the credible spill scenarios to attainable scales of response and, by linking joint arrangements, enables escalation from one tiered response to another, should the need arise. It is a practical method of planning a spill response in terms of required resources and likely environmental impact.

The Oil Plan's three levels of tiered response are based on the following spill scenarios:

Tier 1 - up to 10 tonnes – a small spill requiring a local response.

The Combat Agency will generally be able to respond to and clean up a spill utilising its own resources. In cases where additional resources are required, these will generally be available from the local port authority, or by utilising National Contingency Plan resources in the region, or from adjacent industry operators under mutual aid arrangements.
It should also be noted that the above spill size is the minimum desirable response level for all Tier 1 facilities. Each facility would have to conduct risk assessment of their operations and design their response capability accordingly.

Tier 2 - between 10 and 1000 tonnes – a medium spill requiring regional and/or national assistance

The resources of the Combat Agency will need to be supplemented by other resources from adjacent region, or from adjacent industry operators under mutual aid arrangements. In such cases access to those resources will be facilitated by the Statutory Agency through the Environment Protection Agency (EPA).

Tier 3 - above 1000 tonnes – a large spill requiring national assistance.

The Combat Agency will require local, regional, national and possibly international assistance. National and international resources will be facilitated by the EPA.

2.6 Oil Industry Arrangements

Combat Agency responsibilities of the Ghanaian oil industry are set out in the IAA. Generally the relevant oil company or terminal operator has Combat Agency responsibility at their facilities. Should a situation develop where the necessary response is beyond the Oil Company or terminal resources, the Combat Agency responsibility will transfer to the Statutory Agency. For offshore petroleum operations, the relevant oil company has Combat Agency responsibility, with assistance as required from the Statutory Agency.

The oil industry also operates a mutual aid plan. The mutual aid plan recognises that the response effort for an oil spill at an industry facility may require resources beyond those of the company itself and allows mutual aid to be provided from other industry company resources.

Even though the Statutory Agency may take over the Combat Agency responsibility from the affected company, industry resources will continue to be available for the response.

2.7 Risk Assessment

Risk assessment underpins all preparation and planning for oil spill response in Ghana. A national risk assessment for Ghana shall be carried out periodically to determine:

- The level of risk of oil pollution of the sea, coastline, ports and the Volta Lake;
- The proportions of overall risk which specific oils contribute; and
- The consequences of a spill on the environment.

The Environmental Protection Agency (EPA) recognises the need for the National Oil Spill Response capability to reflect the most current risk profile. Unless other factors dictate an earlier timetable, a comprehensive national risk assessment will be carried out every five (5) years. This risk assessment shall focus on existing contributions to risk from the various maritime sectors, as well as those new or potential activities, which are reasonably foreseeable.

The following risk factors are recognised as important in Ghanaian waters:

- risk of collision;
- risk of grounding;
- hazards to navigation;
- seaworthiness of vessels;
- negligence and competence of the owner/operator, Master or crew;
- aging of the fleet of vessels at sea, chemical, bulk and container;
- size/type of vessel;
- stowage and control of cargoes;
- type/amount of oil and/or chemical(s) carried;
- traffic density; and
- environmental factors including tidal flow and weather etc.

The location of National Contingency Plan resources must be based on a risk profile around the coast of pollution of the sea by discharges of oil or chemicals from ships.

The risk assessment reports shall be by location on the level of risk of pollution of the sea, coastline and ports of Ghana, by oil and other noxious and hazardous substances, taking into account:

- environmental sensitivity;
- industries (e.g. fishing, tourism) which would be most adversely affected ecologically or financially by a spill;
- commercial cargo shipping size, frequency, trading patterns and amounts of oil carried as bunker fuel;
- oil/chemical tanker frequency, sizes, shipping patterns and quantities shipped;
- properties of oil/chemicals shipped as cargo;
- type, density and movement of ships including concentration of fishing vessels and tourist vessels;
- areas that pose a high level of difficulty to safe navigation;

- changes in the operation and construction of ships during the 1990's, such as the introduction of double hulls, amendments to the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), International Safety Management Code, etc;
- amount and properties of oil produced offshore and transported by pipeline;
- location of offshore production and pipeline facilities;
- extent of offshore exploration drilling; and
- future trends, including proposed new ports and projected changes to trading patterns.

Environmental Sensitivity Atlas

An Environmental Sensitivity Atlas of the coastal areas of Ghana has been prepared (EPA, 2004). In this atlas, amenity areas, ecologically sensitive areas, industrial sea water intakes, fisheries, birds, marine and fresh water mammals, ground water resources and other resources likely to be threatened are identified. Two associated reports (the Coastal Environment and Sensitivity Ranking, EPA, 2004) have also been prepared. These reports describe in detail the features identified in the Atlas. The Risk Index for each area was determined by simple environmental and economic sensitivity factors taking into account the vulnerability and importance of the main environmental and economic resources in each area

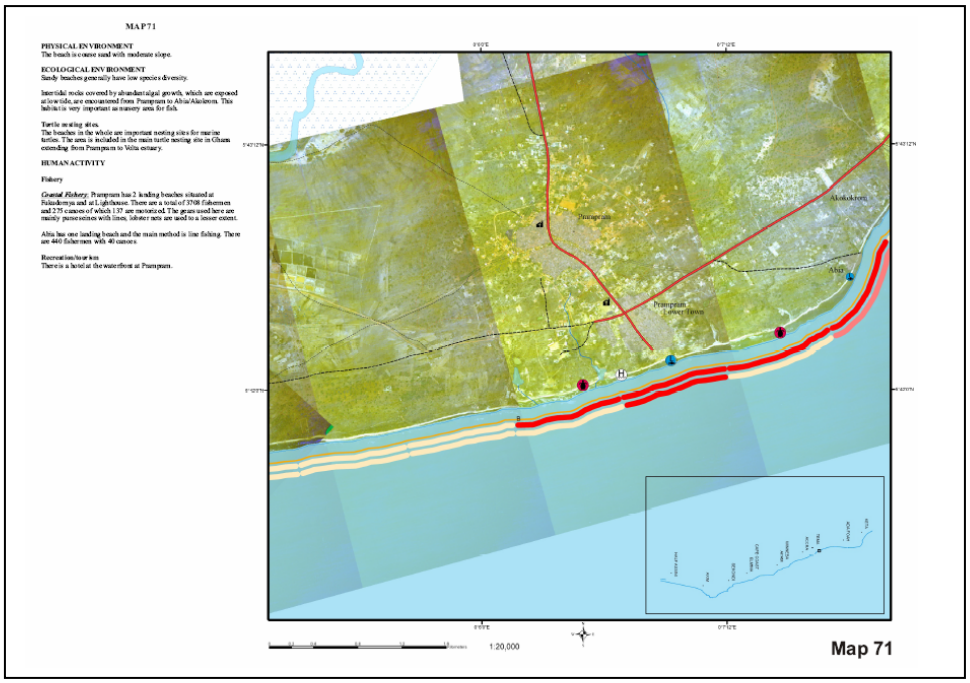

Figure 4: Environmental Sensitivity Map of Prampram Area

Digital copies of the Atlas and its associated reports are available at the EPA. Changes observed along the Coastal Areas of Ghana over time shall be mapped out and the Atlas updated accordingly.

The Risk Profile for Prampam area of the Ghanaian coastline is shown in Figure 4. This shows how sensitive this part of the coastline is to oil spill in terms of economic and environmental resources in that area. The map also indicates the type of coastline in the area. Higher risk areas (where environmental and economic sensitivity are all likely to be higher) are also shown (presented by the deep red line), with progressively lower levels of risk being shown as indicated in the legend, down to the lowest category of risk (presented by the light yellow line). The map also gives a little description of the type of coastline, ecological and economic resources in the area.

The Risk Profile indicates that there are some key areas of relatively higher risk. These are mostly areas of high economic activities and areas of ecological importance.

Future risk assessment should consider dividing Ghanaian waters into 3 regions (based on coastal morphology) – Western (from Half Assini area to River Ankobra Area), Central (from River Ankobra Area to Prampam Area) and Eastern (from Prampam area to Keta area) – and each region further divided into near-shore, intermediate and deep-sea sub-regions. Future risk assessment must combine the predicted frequency and average size of spills from all sources in each sub-region with the ecological and economic resources in the sub-regions.

2.8 Response Planning

Under the IAA, Statutory Agencies supported by Combat Agencies, are primarily responsible for ensuring that contingency plans are developed at regional and local levels, and that these plans complement other plans within the region. Statutory Agencies must be supported by National Contingency Plan Committees and provide advice and support to Combat Agencies during pollution incidents.

For every oil spill response, one person, the On-Scene Commander (OSC), will be appointed to have the responsibility and authority to undertake the necessary response. The Oil Plan provides the means for the On-Scene Commander (OSC) to be able to control any spill regardless of size.

The primary pollution response structure and responsibilities that need to be addressed in the planning process include:

- The Statutory Agency will provide management, operational, technical and environmental advice and support to the Combat Agency as required. This may include support for the management of the response;
- During major incidents, the overall response strategy shall be formulated by a nominated Head of Oil Spill Response (HOSR), and implemented by an On-Scene Commander (OSC) and section officers to form the Incident Management Team (IMT). During lesser incidents, the OSC shall be responsible for overall response strategy. The OSC shall keep the Statutory Agency informed of progress with the response;
- The Statutory Agency and EPA shall provide suitably experienced staff to

assist the HOSR and OSC to initiate and conduct response actions;

- Preparation and maintenance of other Contingency Plans that complement this plan are the responsibility of the relevant Statutory Agency and/or Combat Agencies.

2.9 Establishment of Response Organisations

Regional or local response organisations must be designed and established by the Statutory Agency. Where regional or local committees are established to support the Statutory Agency, it is recommended that the membership include senior representatives of the relevant organisations. Committees should also be able to invite wider participation to ensure that all interests are represented and their resources and services, considered. EPA shall ensure that all these plans are prepared and maintained.

2.9.1 Response Organisation Structure

The response to any pollution incident will be managed using the Oil Spill Response Incident Control System (OSRICS). OSRICS is based on an incident control system used in a wide range of emergency response activities to provide a standardised organisational structure that is flexible yet provides compatibility between agencies and events while ensuring accountability and standardised records (Appendix 3). The system clearly defines roles and responsibilities and provides interoperability between agencies. OSRICS also allows for the greater ability to escalate or downsize the response as required.

OSRICS lists four major functions under which it is possible to group the tasks that need to be undertaken during a pollution response - Planning, Operations, Logistics, and Finance and Administration. These form the main elements of the organisational structure under OSRICS and are designated as sections in the structure. Responsibility for carrying out the tasks is delegated to a section officer who reports to the OSC forming an IMT. Units staffed by people with appropriate skills and experience to deal with particular tasks may be created within the sections.

The number of staff required to fill positions in the OSRICS structure can be varied according to the size and complexity of the incident and the number of staff available. In a major incident all positions may be filled, but in a lesser incident one person may fill a number of positions. In a very small incident, it may only be necessary to appoint an OSC who will be able to carry out all management functions.

Figure 5 shows the typical structure of an Incident Control System (ICS). A more detailed structure may be found in Appendix 3.

Statutory Agencies should ensure that persons with appropriate experience and skills are identified so that they can be appointed to the following positions if a

pollution incident occurs.

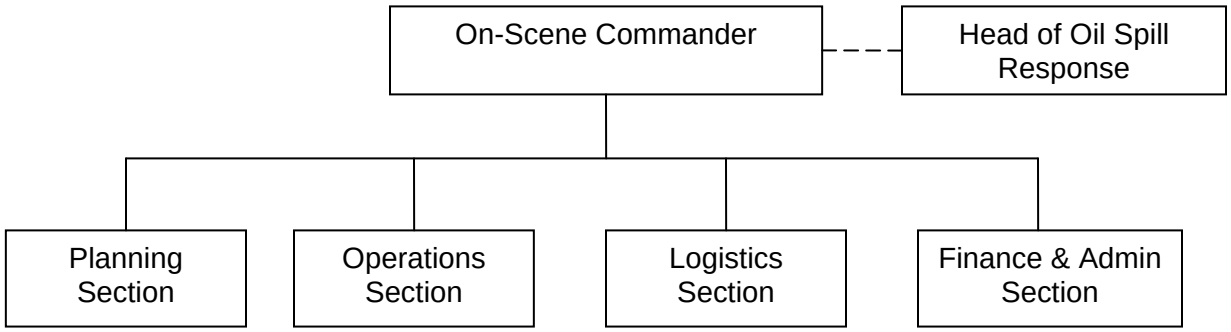

Figure 5: Typical OSRICS Structure

2.9.1.1 Head of Oil Spill Response (HOSR)

The National or Statutory Agencies shall nominate a senior management level HOSR to take overall responsibility for everyday management of the response organisation. The HOSR must be capable of ministerial as well as senior government, industry and media liaison.

2.9.1.2 On-Scene Commander (OSC)

The National or Statutory agencies shall identify appropriate individuals to act as an OSC. The OSC is responsible for the management and coordination of response operations at the scene of a pollution incident to achieve the most cost effective and least environmentally damaging resolution to the problem.
During a major incident the OSC is responsible to the HOSR for the operational aspects of the response. During minor incidents, the OSC shall have overall responsibility for managing the response.

National or Statutory agencies should ensure that the OSC is assisted by a response team with appropriate planning, operational, technical, scientific, chemical, environmental, logistical, administrative, financial, and media liaison skills.

2.9.1.3 Planning Officer (PO)

The National or Statutory agencies shall identify appropriate individuals to act as the Planning Officer (PO) in accordance with relevant contingency plan requirements. The PO is responsible for the provision of scientific and environmental information, maintenance of incident information services, and the development of Strategic and Incident Action Plans.
The PO shall ensure the distribution of all information to the Incident Management Team and to all response personnel generally.

2.9.1.4 Operations Officer (OO)

The National and Statutory Agency shall identify appropriate individuals to act as the Operations Officer (OO) in accordance with relevant contingency plan requirements. The OO is responsible to the OSC for all response operational activities. This includes ensuring that the requirements of Incident Action Plans (IAP) are passed on to operational personnel in the field, and for ensuring that the plans are implemented effectively.

2.9.1.5 Logistics Officer (LO)

The National and each Statutory Agency shall identify appropriate individuals to act as Logistics Officers (LO) in accordance with relevant contingency plan requirements. The LO shall ensure that all resources are made available as required. This includes the procurement and provision of personnel, equipment and support services for operations in the field and for the management of resource staging areas.

In any response there is a vital need to ensure that response personnel are provided with adequate resources to enable an effective response to be mounted.

2.9.1.6 Finance and Administration Officer (FAO)

The National or Statutory Agency shall identify appropriate individuals to act as Finance and Administration Officers (FAO) in accordance with relevant contingency plan requirements. The FAO shall be responsible for all financial, legal, procurement, clerical, accounting and recording activities including the contracting of personnel, equipment and support resources. In addition, the FAO is responsible for the management of the Incident Control Centre (ICC).

2.9.1.7 Environmental and Scientific Coordinator (ESC)

The National or Statutory shall pre-appoint the Environmental and Scientific Coordinator (ESC), either on a National, regional or local area basis. During a spill response the ESC will normally form part of the Planning Section. In this role the Planning Section is to provide the OSC with an up-to-date and balanced assessment of the likely environmental effects of an oil spill. The Planning Section will advise on environmental priorities and preferred response options, taking into account the significance, sensitivity and possible recovery of the resources likely to be affected.

2.9.1.8 Media Liaison Officer (MLO)

An experienced and well-informed Media Liaison Officer (MLO) appointed by the Combat Agency shall be provided for the overall contingency plan. The MLO shall ensure adequate liaison between the OCS's team and the media. All queries received from the media should be directed to this person.
Before releasing any information, the MLO's action should have the approval of either the HOSR or OSC, depending on the size of the spill incident.

2.10 Specialist Advice and Assistance

Specialist technical advice is available to response managers from a variety of sources. Advice can vary from the fate of oil, selection and deployment of pollution control equipment, and dispersant use, to the associated environmental effects of an oil spill. Specialist advice can also be provided in relation to the safety and stability of ships. Some of the organisations that can provide a range of specialist environmental and operational technical advice in the event of an oil spill in the environment include:

2.10.1 Environment Protection Agency

Environment Protection Agency (EPA) can provide:

- advice relating to spill management, operational, logistic and technical issues, dispersant use and environmental effects;
- inputs and advice on decision support tools outlined in Section 4;
- advice relating to intervention powers, legislation and environmental effects.
- advice on habitats in Ghanaian marine protected areas, seabirds, marine mammals, marine invertebrates and macroalgae, along with advice on rates of hydrocarbon biodegradation, dispersal and the use of dispersants.

All EPA assistance will be coordinated through HOSR.

2.10.2 Maritime Operators (MO) (GMA, Ghana Navy, GPHA)

Maritime Operations (MO) can provide advice relating to intervention powers, ship safety, structural integrity and stability of marine casualties. In addition, MO can advice relating to coordinating rescue and saving of life. The MO can provide drift calculations and advice on offshore currents. The MO has a range of communication facilities that can be utilised during an incident including International Maritime Satellite (Inmarsat) systems, enabling messages to be communicated directly to vessels.

The Ghana Maritime Authority (GMA) can advise on matters relating to the sea dumping, including the permitting and reporting of emergency dumping of material at sea. GMA can also advise on Ghana's obligations under the International Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter (London Dumping Convention) and its 1996 Protocol. GMA can also advise on potential impacts of oil spills on threatened marine and migratory species, such as seabirds, seals, marine turtles, whales and dolphins.

2.10.3 Ghana Armed Forces (GAF)

Ghana Armed Forces (GAF) can assist in coordinating the movement of National Contingency Plan equipment. Where necessary GAF will facilitate access to Defence Force resources where commercial operators are unable to provide this service. All GAF assistance will be coordinated through the national HOSR.

2.10.4 Wildlife Division (WD) of Forestry Commission

The Wildlife Division (WD) develops and implements national policies, programs and legislation to protect and conserve Ghana's wildlife. Some responsibilities relevant to the marine environment include conservation of listed threatened, migratory and marine species.

2.10.5 Industries

As outlined in part 2.6, the industries can provide equipment and personnel resources and advice on a range of issues, including oil characteristics and local industries resource availability.

2.10.6 Regional, Local Authorities and NGOs

Regional, local authorities and NGOs, such as have responsibility for transport, conservation, resource management, environmental protection, emergency services, Port/Harbour Authorities, and local conservation groups are able to provide a wide range of site-specific information and resources, either in relation to environmental impacts, or response activities.

2.10.7 National Response Team (NRT)

A National Response Team (NRT) of operational, technical, environmental, Scientific and chemical experts ranging from operator to senior spill response manager level from National/Statutory agencies, industry and other organisations shall be developed.

The services of the NRT shall be obtained through EPA, which should make arrangements with the respective agencies, industry and organisations for the release of designated personnel for spill response activities. These services shall be available when an oil spill incident exceeds the resource availability of the Combat Agency concerned.

2.10.8 International Assistance

In the event of a major oil spill incident, it is likely that assistance may be sought from overseas in accordance with the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC 1990). Customs, Excise & Preventive Service and Immigration Department will expedite the temporary import of equipment and experienced personnel should the need arise on a request from EPA. If additional overseas resources are required to respond to an incident in Ghana, then EPA in conjunction with Industry will arrange for assistance from the oil industry's Global Alliance providing services through Oil Spill Response Limited (OSRL) located in Southampton, UK.

EPA, in accordance with relevant Memoranda of Understanding and relevant International Conventions (such as Abidjan Convention), may also assist neighbouring countries in relation to oil spill incidents in their waters.

2.11 Equipment Availability

Tier 1 pollution response equipment is located in the industries holdings. In addition to the equipment held by the industries, the National Contingency Plan through EPA shall also arrange to operate three (3) regional stockpiles of Tier 2/3 equipment, which can be utilised for larger incidents or where additional resources are required. The location of these stockpiles must be identified and listed in this section of the plan.

EPA's National Contingency Plan arranged equipment holdings should be under the direction and control of HOSR. Release of this equipment shall be authorised by the HOSR, EPA Executive Director or the EPA Duty Officer. Requests for equipment from other Statutory Agency should be made by the OSC, directly to the HOSR of the Statutory Agency, which will, in turn, request the equipment through EPA.

Details for National Contingency Plan, Statutory, and other industry resources held in each region must be given in a Marine Oil Spill Equipment System (MOSES) - see also part 4.4.

2.12 Financial Arrangements

The IAA includes agreed funding arrangements (Paragraphs 21-23), and the administrative arrangements (Schedule 1, Paragraphs 1-10), provide guidance on costs and expenses. This includes details for reimbursement of expenses and the charging for use of National Contingency Plan equipment.
Statutory and Combat Agencies should note that detailed financial records, including all supporting information, are required where a claim is made in accordance with the IAA. This requirement is of particular importance when submitting claims to the Protection and Indemnity (P&I) insurers, as all claims will be assessed to ensure that the costs are reasonable, and that they can be supported by satisfactory documentation. Accordingly, agencies should have in place appropriate systems to ensure that these requirements are met and that these are adequately outlined in contingency plans.

For claims submitted to EPA for reimbursement, when the spiller has not been identified, the EPA shall address the claims from a standpoint of normal audit requirements and reasonableness, i.e. it should apply the same general criteria used by Protection and Indemnity (P&I) Clubs and their correspondents when assessing the reasonableness of claims for reimbursement of costs incurred in responding to an oil spill, or potential oil spill. In general, costs will be considered "reasonable" if they result from actions that:

- were undertaken on the basis of a technical appraisal of the incident;
- sought to enhance the natural processes of recovery; and
- were not undertaken purely for public relations reasons.

2.13 Communications

In a pollution incident it is important that the OSC has access to adequate communication facilities. In addition to the facilities available through the ports (part 2.10.1.4) it is envisaged that the oil industry communications package, consisting of portable Satcom M, MiniSat, VHF marine band radios and repeater VHF aviation band radios and Ultra High Frequency (UHF) networks would be available to coordinate a response. In a major incident it may be necessary to seek the assistance of emergency services radio networks and, if necessary, the Armed Forces. To obtain Armed Forces assistance, a request should be made through EPA (part 4.6).

2.14 Wildlife Response

When a marine oil pollution incident occurs it is highly likely that oiling of birds, marine mammals and other wildlife will occur. The impact on wildlife and biodiversity will depend upon the environmental sensitivity, the type and quantity of the pollutant, and the location of the spill. Oiled wildlife attracts both significant community and media attention. The effectiveness of a spill response is sometimes measured on the success of its wildlife rescue and rehabilitation.

EPA in conjunction with WD shall develop National Guidelines for the Development of Oiled Wildlife Response Contingency Plans, with the objective to provide guidance for the immediate and effective protection, rescue, cleaning and rehabilitation of birds, marine mammals, their habitat, and other wildlife resources that are harmed or potentially harmed by a marine oil spill. This must further be supported by detailed regional internal arrangements.

2.15 Place of Refuge

It is rarely possible to deal expeditiously and satisfactorily with a casualty in open sea conditions, and the longer a damaged ship is forced to remain at the mercy of the open sea, the higher the risk of its condition deteriorating and thereby becoming a greater pollution hazard.

A place of refuge must provide favourable conditions to enable a ship to stabilise its condition, protect human life, and minimise the risk of environmental degradation.

GMA should assist in developing specific policies on places of refuge, and these should be followed as appropriate. National Maritime Place of Refuge Risk Assessment Guidelines (Appendix 5) have been developed to provide an overall framework for the assessment and identification of place of refuge requirements. Regardless of whether places of refuge are pre-designated or not, the following criteria form the basis for their selection:

- adequate water depth;
- good holding ground;
- shelter from the effect of prevailing wind/swell;

- relatively unobstructed approach from seaward;
- environmental classification of adjacent coastline and fisheries activity;
- access to land/air transport; and
- access to loading/unloading facilities for emergency equipment.

It should be noted that the International Convention on Salvage 1989 places an obligation on Ghanaian response authorities to take into account the need for cooperation between various parties concerned in a salvage operation, including public authorities, when considering admittance of damaged vessels to ports.

2.16 Training and Exercises

The Oil Plan, incorporating EPA, state authorities and industry, conducts regular training programs and exercises for personnel likely to be involved in a response to an oil spill in the marine environment. These training programs and exercises are designed to enable Ghana to have sufficient numbers of trained personnel to mount a credible and effective response to an oil spill incident.

Training programs are conducted at three levels, which recognise the overall technical complexity of managing an oil spill response and that the associated knowledge required by personnel varies depending on their level of responsibilities.

The three levels of training conducted are:

Senior Management - Level 3

- the focus is on the requirements of senior government and industry management personnel, including National and Regional appointed committees - responsible for high level decision making;

Middle Management - Level 2

- the focus is on the requirements of middle management personnel, including designated and potential OSCs, their deputies and local committees - responsible for the preparation of contingency and response plans and the management and conduct of effective oil spill response operations and associated logistic, administrative and financial tasks;

Operator - Level 1

- the focus is on the requirements of operational personnel, those undertaking on-site cleanup operations and operating spill response equipment.

Full details of the National Oil Spill Contingency Plan training program, including course content, would be made available to the public by EPA from time to time.

SECTION 3

Response

3.0 RESPONSE

3.1 Measures to be Employed

In the event of an oil spill the following measures should be employed according to the circumstances of the spill and conditions prevailing:

- if possible prevent, control or stop the outflow of oil from the source;
- if coastal or marine resources are not threatened or likely to be threatened, monitor the movement and behaviour of the oil spill;
- if coastal and marine resources are threatened, activate response operations to protect sensitive resources;
- if possible, contain the spread of oil; and
- if, due to weather and sea conditions, a response at sea is not feasible, or the protection of sensitive areas is not feasible, or these have already been affected, determine appropriate cleanup priorities and other response measures.

The importance of human health and safety in any response operation cannot be overemphasized.

3.2 Overall Protection Priorities

Protection priorities to be employed during a response to an oil spill are, in order of descending priority:

- human health and safety;
- habitat and cultural resources;
- rare and/or endangered flora and fauna;
- commercial resources; and
- amenities.

However, in assessing protection priorities, it is necessary to maintain a balanced view of the potential success of particular response strategies.

3.3 Incident Reporting and Response Activation

3.3.1 Initial Reports

Notification of a pollution incident will normally be made from observations by Government agencies, shipping or aircraft, by the public, or by those responsible for the incident. It is important that the information received be reported without delay to enable immediate and appropriate action to be taken. The response procedures that shall be followed are summarised in Figure 6.

The most efficient method of ensuring that reports are dealt with promptly is by reporting through the ports. The ports operate twenty-four (24) hours a day and are equipped with radio facilities, telephone, facsimile and telex lines. The ports will disseminate this information to EPA.
The ports contact details are outlined in Appendix 2.

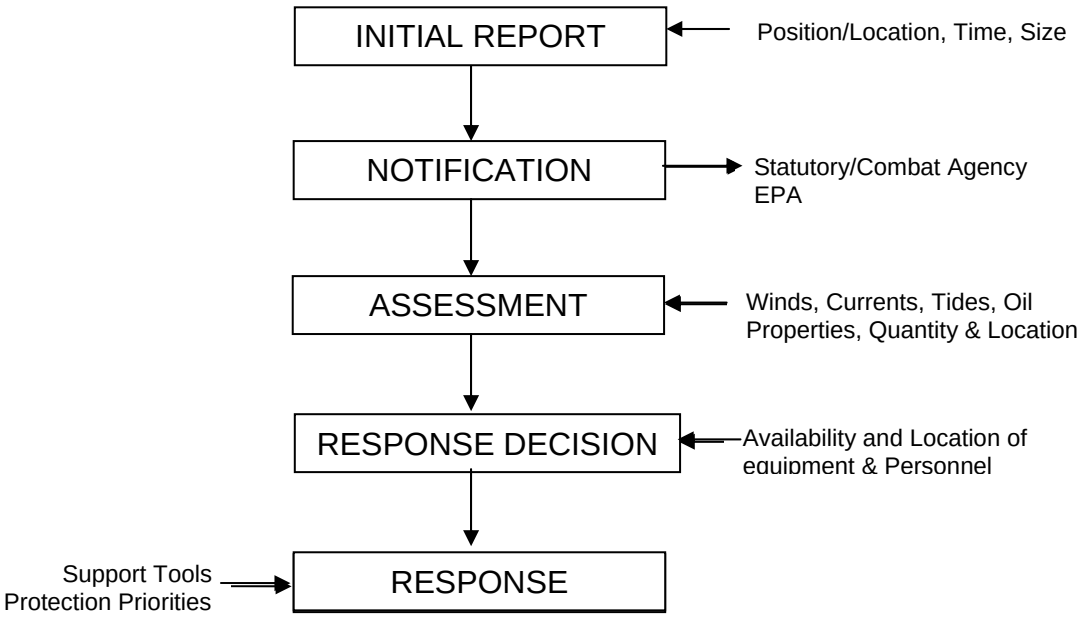

Figure 6: Typical Response Procedure

3.3.2 Initial Action

The agency receiving the report of a pollution incident shall notify the relevant Statutory Agency as defined in the IAA. In circumstances where the notification was not received from EPA, this shall include advice from EPA.

In the event that EPA is the first agency advised of a pollution incident, the relevant Statutory Agency shall be notified. The Statutory Agency shall promptly assess the information contained in any report and make the necessary decisions in relation to appropriate investigations and response actions. This will include jurisdiction and expected Statutory and Combat Agency responsibilities. The Statutory Agency shall advise the relevant Combat Agency of the need for a response.

Following the report of an incident the Combat Agency shall issue a Pollution Report (POLREP) in accordance with part 3.3.4.

3.3.3 Activation

When a report has been received by the Combat Agency, that agency should confirm the incident details. The proximity and possible subsequent movement of an oil spill to sensitive areas will dictate the urgency of the method used to confirm the presence of the pollution.

On confirmation of the presence of oil (see Appendix 4 for the appearance of oil on water), or where a decision has been made to implement a response action, the Combat Agency should mount a response operation in accordance with the appropriate contingency plan arrangements.

This should be done without delay to facilitate any subsequent cost recovery

actions.

3.3.4 Pollution Report (POLREP)

After initial verbal advice has been provided to the Statutory Agency, the Combat Agency should issue a POLREP to relevant agencies. This would best be directed to the EPA who would disseminate the information to relevant agencies based on the incident type and location. A generic POLREP form is shown in Appendix 8, which can be used by agencies.
It should also be noted that the MARPOL 73/78 Convention established the requirement for the ship's Masters to report discharges from their vessels. For reference, a copy of the details that the ship's Master should report is in Appendix 7 (Harmful Substances Report).

3.3.5 Situation Report (SITREP)

During a pollution incident (or potential incident), it is essential that all relevant authorities be kept advised of any significant developments.

The OSC will be responsible for ensuring that periodic Situation Reports (SITREPs) are dispatched to those concerned. SITREPs should contain as much information as possible.
During an incident that involves the risk of marine pollution the Combat Agency shall be responsible for communicating SITREPs to relevant agencies, including A suggested format, including required content, for reporting this information is outlined in Appendix 8.

3.4 Incident Control

Operational control of a pollution incident is the responsibility of the Combat Agency representative nominated as an OSC, and supported by an IMT that performs the tasks of the Planning, Operations, Logistics, and Finance and Administration sections of OSRICS.
The OSC shall establish an Incident Control Centre (ICC) at a location, in close proximity to the incident, affording resources and facilities for the sustained management of the incident. This shall include access to communication facilities, suitable road access and other resources required for the response.

3.5 Response Plans

3.5.1 Strategic Plans

In a major incident it is important that a strategic plan is drawn up which clearly details the aims and objectives of the overall response. In some cases it may be necessary for strategic plans to be developed to cover a number of aspects of the incident. Strategic plans address the broader issues of the response, not short-term operational activities.

3.5.2 Incident Action Plans (IAP)

Short-term operational objectives and activities are the subject of an Incident Action Plan (IAP). The IAP will provide details of the operational activities and objectives to be achieved over a specified, short-term period. Initially this may be for the subsequent few hours only, but once the operation is underway it is likely to address the activities required over each of the following twenty-four hours or longer.

3.6 Response Options

A number of options exist for the treatment of oil that has been released into the environment. All may be effective to a degree according to the conditions prevailing and the sensitivity of the environment under threat. The response options include:

- surveillance;
- control and recovery;
- application of dispersant;
- in-situ burning;
- shoreline cleanup; and
- bioremediation

3.7 Occupational Health and Safety

Response managers should be aware that at all times human life, health, and safety is paramount. The degree of risk associated with cleanup operations will depend on the:

- type of oil spilled;
- size of the spill;
- location of the spill;
- circumstances of the spill; and
- weather conditions.

At all times response managers should be aware of the limitations and safe operating procedures for all equipment used throughout the phases of the cleanup operation. This should, where necessary, include a risk assessment and development of a formal site-specific management plan, including details for induction and briefing procedures.

Fresh crude oil and refined petroleum products are capable of giving off flammable gases. Therefore, fire and explosion remain a real danger to personnel and equipment, particularly when fresh crude oil and certain refined products are situated in confined locations.

3.8 Cultural and Heritage Issues

Important indigenous and non-indigenous heritage values and places exist in many parts of Ghana's coastal areas, including historic heritage sites and places with physical evidence of indigenous use, places of cultural value to indigenous people (e.g.: sacred grooves) and natural resources. The potential impact of response operations on the heritage values of the area needs to be addressed in

planning the operation.

The potential heritage values of an area need to be identified and the likely impacts that result from the activities should be addressed. Specific consideration should be given to access to, and general use and disturbance of areas. The assessment should consider both direct and indirect impacts, cultural protocols and strategies for minimising impacts. Consultation with local indigenous communities should occur as part of the planning process

Information about the heritage values of an area may be limited, or difficult to access. Some heritage registers held by regional agencies are subject to access restrictions. As such, appropriate National and Local Government agencies should be consulted to facilitate contact with indigenous communities and obtain necessary information required by the IMT and response personnel.

3.10 Obtaining Samples for Evidence and Analysis

In the aftermath of a pollution incident, identification of the source of contamination is a vital component in identifying the polluter not only for possible legal action but also for the subsequent allocation of the recovery of response costs. Even where one ship is considered to be clearly the source of the spill it is important to be able to establish that other potential sources have been eliminated. Where a spill has occurred there may be a number of different ships that are potential sources of the spill and they must all be identified and sampled as far as practicable. Samples must be obtained from all possible sources (tanks, bilge etc) onboard each ship to compare with a spill sample. The laboratory will use multiple analysis methods to eliminate or identify the source of the spill.

To ensure that a positive analysis result may be achieved, correct sampling, storage, handling, preparation of the samples from all potential sources is essential. Further details concerning sample collection, storage and handling are outlined in Appendix 6.

3.11 Disposal of Oil and Oily Debris

Cleanup operations can generate substantial quantities of oily debris. Temporary storage, transportation and final disposal methods shall be arranged to comply with government disposal approvals. This will usually be facilitated by the responsible regional Environment Protection Agency office.

Regional and local contingency plans should contain information on the disposal of oily waste. This should include any pre-designated arrangements for disposal sites and approved contractors.

Ideally disposal sites should be identified as close as practical to those areas where oil pollution could most likely occur. Additional information is provided in the National Contingency Plan document Management and Disposal of Oil Spill Debris, available at the EPA.

3.12 Equipment

On completion of an oil pollution response operation, the OSC shall arrange recovery of all equipment and unused materials, and arrange their prompt return

to the resource centre from which they came. In the event of a major incident, a NRT member would normally be available to assist in the coordination of equipment transfers, including returning equipment to its point of origin. The OSC shall advise the HOSR, EPA, of all usage of State-owned National Contingency Plan equipment, including details of any damage or discrepancies. When State-owned National Contingency Plan dispersant stocks are used during an incident, the Combat Agency shall furnish the HOSR, with a full report outlining the quantities used.

The OSC, or delegate, will ensure that all equipment is cleaned after use to the extent available facilities allow, and is returned to the ownership authority by the quickest possible means, having regard to freight costs.

On its return to the resource centre the equipment shall be thoroughly serviced in accordance with equipment maintenance schedules prior to being stored. The Combat Agency shall ensure that all costs incurred in returning equipment to the resource centre, including cleaning and servicing is included in the overall schedule list of costs submitted for reimbursement by the polluter.

3.13 Termination of a Response

Under the terms of the IAA, an incident response will be terminated by the Statutory Agency once the Statutory Agency considers that the effective completion of the response is achieved based on expert Combat Agency advice. Termination arrangements are outlined in the IAA and should be included in regional and local contingency plans.

SECTION 4

RESPONSE SUPPORT

4.0 RESPONSE SUPPORT

4.1 Environmental Sensitivity Atlas (ESA)

The Environmental Sensitivity Atlas identifies marine and foreshore ecosystems and biological resources for the determination of protection priorities and provides information to authorities on response options, for example boom deployment; chemical dispersant use; foreshore cleanup techniques to be employed, and disposal sites for wastes generated.

4.1.1 About ESA

ESA datasets include but are not restricted to: habitats, both coastal and near-shore marine; high definition coastlines; georeferenced format; scanned topographical charts for coastal area of Ghana (1:20 000); biological resources and conservation status; fisheries; coastal and marine wildlife resources; recreational resources; aerial photography and other infrastructure information.

4.1.2 Access to ESA

Access to ESA and tools is via the EPA. EPA has holdings of the data for emergency purposes

4.2 Oil Spill Trajectory Modelling (OSTM)

4.2.1 Weather and Spill Updates

During the response, periodic updates of the prevailing winds and confirmed observations of the movement of the spill should be reported, preferably by facsimile, to EPA for inclusion as necessary in the continuing OSTM predictions. Additionally, EPA should obtain Meteorology forecasts for comparative purposes.

4.3 Automated Data Inquiry for Oil Spills (ADIOS)

The Automated Data Inquiry for Oil Spills (ADIOS) is a computer-based oil spill response tool that was developed by the US National Oceanic and Atmospheric Administration for emergency spill responders and contingency planners. ADIOS integrates a library of approximately one thousand oils with a short-term oil fate and cleanup model, which is designed to estimate the time that spilled oil will remain in the marine environment and the amount of oil remaining. ADIOS calculations combine real-time environmental data based on user inputs, such as wind speed and water temperature, combined with carefully researched information on chemical and physical properties of oils in its oil library. The program provides a prediction of possible ranges in the values of spill properties and oil fate. ADIOS can be accessed through the EPA Duty Officer, who can be contacted via the EPA.

4.4 Marine Oil Spill Equipment System (MOSES)

MOSES is a computer database that lists the type, quantity, location, status and availability of pollution control equipment. The database is designed to contain listings of National Contingency Plan, regional and industry equipment that is available for use in response to a marine oil spill.

4.5 Charter and Hire Arrangements

4.5.1 Charter of Vessels

During an incident there may be the requirement to charter local vessels to assist in response operations. A Vessel Charter Agreement provides an example of an agreement, which may be amended for use by agencies.
It is suggested that a formal agreement be used whenever there is a need for agencies to charter a fishing vessel, or other craft, for use at oil pollution incidents and where the owner agrees to its use for such charter.
Whilst the OSC may need to control the operation of a vessel to suit prevailing conditions and the particular circumstances of the incident, it shall be made clear that THE NAVIGATION AND SAFETY OF THE VESSEL WILL REMAIN THE RESPONSIBILITY OF THE VESSEL'S MASTER AT ALL TIMES.
When an owner is not prepared to accept the suggested agreement, but is prepared to make a vessel available, the charterer should ensure that:

- the vessel complies with all safety and equipment requirements; and
- it is made clear by the charterer to the owner that the controls shall apply at all times. All other aspects of the charter shall be the subject of local negotiation at the time of the incident.

Details of craft availability, including Port craft, should be shown in appropriate regional and local contingency plans.

4.5.2 Hire of Spray Aircraft

EPA shall negotiate with the Oil Spill Response Limited through its oil spill centre in Ghana to have in place a Fixed Wing Aerial Dispersant Capability (FWADC) for the application of oil spill dispersants. Based on the concept of utilising large agricultural aircraft, the FWADC is designed to complement informal dispersant spraying arrangements using helicopters, which are confined to close inshore work.

It is important to note that a decision to activate the FWADC incurs a substantial daily charge. The daily charge is normally in addition to charges for actual flying time. Notwithstanding the absence of a stand-by arrangement, EPA will advise for planning purposes (not an activation), of significant incidents where dispersant application may be considered as a major response option.

Activation of the FWADC is through the EPA HOSR, who can be contacted via the Ports. The EPA HOSR will make an assessment of the requirement and then contact OSRL, who within 30 minutes will advise EPA of the nominated aircraft and estimated arrival time.

It should be noted that only National Contingency Plan approved dispersants are to be used in response to any incident involving dispersant use. Full details of approved dispersant can be obtained from EPA

4.5.3 Surveillance Aircraft

Where the source of an incident is not identified and thus recovery of costs unlikely, or where it is intended to claim reimbursement of costs from EPA under the IAA arrangements, then the EPA HOSR or NOSC, must approve the use of aircraft for surveillance or investigation.

Procedures for the identification and charter of appropriate aircraft should be shown in appropriate regional and local contingency plans.

4.5.4 Hire of Other Equipment

In a cleanup operation the hire of other equipment, including earthmoving equipment, storage, and transport will be arranged under the direction of the OSC as required.

4.6 Armed Forces Assistance

Requests for Armed Forces assistance, including the use of military transport are to be directed to EPA HOSR.
After assessing and approving any requests, the EPA HOSR will seek the assistance of the Armed Forces through NOSC. NOSC will arrange for Armed Forces assistance once all avenues of utilising commercial resources have been exhausted, or where timeframes are such that it is impractical to use commercial resources.

Costs associated with the engagement of Armed Forces resources, will be charged against the incident and recovered from the polluter. These costs may be determined by the Armed Forces in accordance with Government cost recovery directions.

Following approval of a request by the Armed Force, EPA will continue to liaise with GAF regarding transport details.

4.7 Salvage Arrangements

4.7.1 Salvage Involvement

In the event of an incident involving a damaged or disabled ship, it is paramount that the GMA be involved in the response as soon as possible. Salvage activities may need to be arranged to take the vessel in tow, refloat a grounded vessel, or reduce or stop a discharge of oil to minimise environmental damage resulting from the casualty. It is essential that these operations be undertaken as soon as possible.
In accordance with the IAA, GMA has responsibility for safety issues relating to vessels on interstate or foreign voyages and will be responsible for ship operational matters. These functions include alerting and liaising with salvors, taking measures to minimise oil outflow and other salvage activities.
The vessel's Master/Owner will normally appoint a salvor by signing a Lloyds Open Form Agreement. However, in cases where this does not occur, GMA may

use its powers under the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties 1969, to either direct the Master/Owner to engage a salvor or alternatively contract a salvor to undertake necessary work, with costs recoverable from the owner.

4.7.2 Salvage Liaison

During an incident requiring the salvage of a vessel, consideration should be given to the appointment of a Casualty Coordinator (CC). The role of the CC is to enable continuing exchange of information regarding the salvage operation between the OSC, the Salvage Master and Statutory/Combat Agencies. This will enable the Salvage Master to limit briefings to one person, whilst at the same time providing for continuity in information flow. A senior GMA marine surveyor should be available to act as the CC as required.

4.7.3 Independent Salvage Advice

In a major casualty the possibility may arise for the need to have access to independent salvage advice. GMA should identify three suitable companies, which can provide independent advice on the salvage operation, including whether the proposed salvage operations are appropriate. In the event of requiring such advice, GMA will make appropriate arrangements with one of the identified companies.

In incidents involving an intrastate vessel, the Ports may wish to undertake the above salvage arrangements. GMA will provide assistance where required.

4.8 Updating the Plan

Contingency Plans are evolving documents, and as such, require regular updating. It is recommended that all Contingency Plans be reviewed annually to take into account policy changes and experience from incidents and exercises. Regular amendments should be made to reflect changes to contacts, equipment and other details.

Minor amendments to this Plan will be issued by EPA as they become necessary. EPA will review the National Oil Spill Contingency Plan annually.

Information for updating the Plan should be forwarded on a regular basis to:

The Executive Director
Environmental Protection Agency
PO Box 326
Ministries
Accra
Facsimile: (021) 662690

APPENDICES

APPENDIX 1

Inter-Agency Agreement & Administrative Arrangements

Inter-Agency Agreement on the National Contingency Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances

This AGREEMENT is made on the [date to be inserted after the Agreement is signed] BETWEEN The Ghana Government Agencies whose signatures appeared at the end of this Appendix and the Oil Industries ("The Parties")

Definitions

"Agency" means an organization having a responsibility in the oil/chemical contingency plan

"Combat Agency" means the agency having operational responsibility in accordance with the relevant contingency plan to take action to respond to an oil and/or chemical spill in the marine environment.

"Committee" means the National Contingency Plan Management Committee established in accordance with paragraph 3 of this Agreement.

"National Contingency Plan" means the National Contingency Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances.

"Statutory Agency" means the national, regional, local Agency identified in the relevant contingency plan as having statutory authority for oil and noxious pollution matters in their area of jurisdiction.

"Oil Industry" An organization whose activities pose risk of oil pollution

Principle

Since its establishment in 1986, the National Contingency Plan has been characterised by willing and effective cooperation between key players from both government and industry, and has provided both timely and effective response to actual pollution incidents.

Nothing in this agreement lessens the need to maintain this high level of cooperation between all stakeholders in order to provide timely and effective response to actual pollution incidents, including making available equipment and trained personnel as and when needed.

Recitals:

Whereas

A. The Parties have agreed to the implementation of the administrative and funding arrangements under the National Contingency Plan for responding to oil and chemical pollution;

B. The Parties agree that the implementation National Contingency Plan, and the administrative and funding arrangements set out in Schedules 1 and 2 to this Agreement require the establishment and implementation of a

cooperative arrangement to ensure that:

(i) the national approach to preparedness and response to oil and chemical spills under the National Contingency Plan is continued and strengthened, with the active participation of industry groups wherever possible and with due regard to existing national emergency management arrangements;
(ii) the division of responsibility between the Parties is clear in relation to maintaining the national preparedness and response capacity in accordance with the National Contingency Plan and to manage associated funding, equipment, and training programs to support National Contingency Plan activities;
(iii) mechanisms are established to ensure that decision making under the National Contingency Plan is cooperative and that the obligations of the Parties under the National Contingency Plan are met; and
(iv) principles are agreed under which the obligations of the Parties under the National Contingency Plan are to be funded.

C. The Parties note that the Environmental Protection Agency (EPA), established under the *Environmental Protection Agency Act 1994, Act 490,* is the national agency with a primary role in protection of the environment. EPA has statutory authority for pollution matters within the jurisdiction of the Republic of Ghana. One of EPA's primary areas of responsibility is protection of the environment through management of the National Contingency Plan.

D. The Parties have agreed that the elements of the cooperative arrangement are:

(i) the establishment of a Ministerial advisory board known as National Oil Spill Advisory Board as advisory organ to secure the maximum human, technical, scientific, administrative and logistic support for the Environmental Protection Agency with regard to oil pollution situations.
(ii) the establishment of a National Contingency Plan Management Committee to be responsible for strategic management of the National Contingency Plan; the establishment of a National Contingency Plan Operations Group to report to and support the National Contingency Plan management Committee by considering the overall operational aspects of the National Contingency Plan;
(iii) that the Statutory Agency in each region is to be responsible for the coordination of the local administration and operation of the National Contingency Plan;
(iv) continuation of EPA as the managing agency of the National Contingency Plan;
(v) a Memorandum of Understanding between EPA and the Ghanaian Oil Industry; and
(vi) the establishment of principles under which the obligations of the Parties under the National Contingency Plan are to be funded.

NOW IT IS AGREED BY THE PARTIES AS FOLLOWS:

Operation of the Agreement

1. The Agreement will commence on the date it is signed by the Parties.
2. The Parties will take such action as is provided for by this Agreement and as is otherwise required to achieve the objectives set out above by initiating the administrative acts and procedures provided for by this Agreement, in accordance with the roles and responsibilities set out below.

Operation and functions of the Committees and Statutory Agencies

National Contingency Plan Management Committee

3. The Parties will establish a National Contingency Plan Management Committee to provide advice to the National Oil Spill Advisory Board NOSAB on the strategic, policymaking and funding direction for the National Contingency Plan. The functions of the National Contingency Plan Management Committee are to:
   i. provide strategic oversight and direction for the effectiveness and efficiency of the National Contingency Plan, including preparedness and response standards;
   ii. oversee the ongoing effectiveness of the formal arrangements between key stakeholders and EPA as National Contingency Plan manager;
   iii. provide advice to the NOSAB on the collection and distribution of funds for the National Contingency Plan, including contributions from the national, the oil and shipping industry;
   iv. develop and maintain a four-year rolling budget for EPA's National Contingency Plan activities to be submitted for advice each year to the NOSAB;
   v. develop, implement and monitor mechanisms to ensure the roles and responsibilities of the stakeholders are clearly understood by all stakeholders in the National Contingency Plan;
   vi. prepare an annual report to be distributed to all stakeholders on achievement of the National Contingency Plan objectives, activities and operations including financial management;
   vii. provide advice to EPA in developing and maintaining international and regional cooperative arrangements for pollution response and preparedness; and
   viii. perform such other functions as the NOSAB may confer on it from time to time.
4. Membership of the Committee will comprise a senior executive representative (or alternate with equivalent authority) from each of the following Agencies:
   i. EPA (as National Contingency Plan manager)
   ii. Ghana Ports & Harbours Authorities;

iii. Ghana Maritime Authority;
iv. Ghana Navy;
v. Ghana National Petroleum Corporation
vi. Tema Oil Refinery
vii. National Association of Oil Marketing Companies;
viii. National Disaster Management Organisation (NADMO)
ix. Oil Exploration and Production Companies
x. Regional Maritime University

5. The Committee will have an independent chair who is not a representative of the Parties or the stakeholders.
6. Each member Agency will bear the costs and expenses incurred in the course of Committee business.
7. The Committee will hold such meetings at least annually, and will hold additional meetings as necessary for the efficient performance of its functions. EPA shall give notice of meetings and agendas at least one month in advance, unless otherwise agreed by the members. Meetings will not be held unless a majority of members are able to attend.
8. The Parties will encourage their representatives to provide a whole-of-government perspective, and not just the views of their respective agencies.
9. The Committee will make its reports and recommendations to the NOSAB through the EPA.
10. The NOSAB will be entitled to be notified of and to be given information concerning any matter being dealt with by the Committee. The NOSAB will have the right to refer any matter arising out of or in connection with their pollution prevention responsibilities directly to the Committee for consideration.
11. The secretariat for the Committee will be provided by EPA.

National Contingency Plan Operations Group

12. The Parties will establish a National Contingency Plan Operations Group to support the National Contingency Plan Management Committee by considering the overall operational aspects of the National Contingency Plan. The functions of the National Contingency Plan Operations Group are to:

(i) develop and implement programs to:

a) provide training under the National Contingency Plan;

b) coordinate the National Response Team[1] to assist in a response under the National Contingency Plan to an oil or chemical spill in the environment;

c) monitor National Contingency Plan equipment, identify acquisitions to be made by EPA of National

[1] The National Response Team is a group of trained and experienced personnel from various National Contingency Plan stakeholder agencies that is available to provide support across all response disciplines to any National Contingency Plan Combat Agency in the event of a major oil pollution incident.

Contingency Plan equipment and maintenance of EPA-owned National Contingency Plan equipment;

d) ensure equipment allocation, compatibility and preparedness to enable a consistent approach to be taken by each Party for the purposes of paragraph 20 of this agreement;

e) test the effectiveness of contingency plans through conducting incident response exercises;

f) maintain support systems under the National Contingency Plan, including fixed wing aerial dispersant spraying, risk assessment, the Environmental Sensitivity Atlas, and Oil Spill Trajectory Modeling;

g) support the adoption of new technology and evaluate research and development projects for National Contingency Plan funding;

h) address environmental issues such as guidelines to determine extent, and restoration of, damage caused by pollution incidents;

i) raise community awareness about protection of the environment from oil and chemical pollution; and

j) support and give guidance to the implementation of the Oil Spill Response Incident Control System.

(ii) establish and oversight working groups that are necessary for the National Contingency Plan Operations Group to carry out its functions;

(iii) assist regions to establish and maintain effective communication channels with all relevant stakeholders; and

(iv) perform such other functions as the National Contingency Plan Management Committee may confer on it from time to time.

13. Members of the National Contingency Plan Operations Group will have senior operations management responsibilities within their respective agencies or organisations. Parties to this agreement and the following stakeholders in the National Contingency Plan will be represented:

i. Environmental Protection Agency;
ii. Ghana Maritime Authority;
iii. Ghana Ports & Harbours Authority.
iv. Ghana Navy
v. Ghana National Petroleum Corporation
vi. Wildlife Division of Forestry Commission
vii. Ghana Fire Service;
viii. The Association of Oil Marketing companies
ix. The Tema Oil Refinery
x. National Disaster Management Organisation
xi. The Oil Exploration & Production Companies
xii. Fisheries Department
xiii. The Regional Maritime Academy

xiv. Volta River Authority
xv. Ghana Association of Marine Surveyors
xvi. Ghana National Association of Farmers and Fishermen
xvii. Information Services Department
xviii. Environmental NGOs
xix. Oceanography Department of University of Ghana

14. The National Contingency Plan Operations Group will be chaired by EPA (as National Contingency Plan manager).
15. Each member Agency will bear the costs and expenses incurred in the course of National Contingency Plan Operations Group business.
16. The National Contingency Plan Operations Group will hold such meetings as are necessary for the efficient performance of its functions. Meetings will be held twice yearly or more often as the Operations Group decides is appropriate and where possible will be held before meetings of the National Contingency Plan Management Committee. EPA shall give notice of meetings and agendas at least one month in advance, unless otherwise agreed by the members. Meetings will not be held unless a majority of members are able to attend.
17. The National Contingency Plan Operations Group will make its reports and recommendations to the National Contingency Plan Management Committee.
18. The secretariat for the National Contingency Plan Operations Group will be provided by EPA.

Regional Responsibilities

19. A Statutory Agency in each region will be responsible for coordinating the local administration and operation of the National Contingency Plan, in accordance with the National Contingency Plan Administrative Arrangements, appearing in Schedule 1 to this Agreement. This may be done in consultation with the National Committee and with due consideration to the relevant regional emergency management arrangements.
20. The responsibilities of the National Contingency Plan and Statutory Agencies will be:
    (i) administration and operation of the National Contingency Plan in the region, including provision of support to the National Contingency Plan Management Committee and National Contingency Plan Operations Group;
    (ii) developing and implementing contingency plans for combating pollution under the National Contingency Plan;
    (iii) advising and supporting the Combat Agency during the response to an oil or chemical pollution incident;
    (iv) advising EPA in relation to capital equipment, maintenance and training requirements for that region on an annual basis; and
    (v) ensuring all oil and chemical pollution incidents and reports of oil spill sightings whether confirmed or unconfirmed are reported to

EPA.

Funding

21. The Parties agree that the following principles should form the basis under which obligations are funded under the National Contingency Plan:
    (i) Preparedness for marine pollution incidents should be funded on the basis of the principle that the potential polluter pays;
    (ii) Response to marine pollution incidents should be funded on the basis of the principle that the polluter pays; and
    (iii) Agencies responding to and incurring costs in relation to pollution incidents where the polluter is not identified, or costs are not recoverable, will be reimbursed by EPA on the basis of the potential polluter pays, as set out in paragraphs 22 to 29 of Schedule 1 to this Agreement.

22. EPA agrees that, following consultation with the National Contingency Plan Operations Group and relevant stakeholders, they will ensure that:
    (i) each oil/chemical terminal and offshore drilling rig/platform within the jurisdiction of the Republic of Ghana maintains, either directly or indirectly, an appropriate preparedness and response capacity consistent with the level of risk posed by the terminal, offshore drilling rig or offshore platform;
    (ii) each port within the jurisdiction of the Republic of Ghana, including private terminals within ports, maintains, either directly or indirectly, an appropriate preparedness and response capacity consistent with the level of risk within the port;

23. The Parties agree to the specific funding obligations appearing in Schedule 2 to this Agreement.

Review

25. The National Contingency Plan Management Committee will report to the NOSAB on an evaluation of the cooperative arrangements contained within this Agreement within 12 months of its commencement and at regular intervals thereafter as determined by the NOSAB.

26. The NOSAB will decide as soon as practicable after receipt of the report whether this Agreement should continue, be modified or terminated. The Board will make their decision by consensus and, if the decision is to extend, modify or terminate this Agreement, take all necessary steps to give effect to their decision.

27. The NOSAB may at any time review or modify this Agreement and, if they decide by consensus to terminate it, do all that is necessary to terminate it.

28. The National Contingency Plan Management Committee may at any time review or modify the Schedules to this Agreement.

Signatory of Parties

SIGNED by (Ministry of Environment, Science and Technology) Date:

SIGNED by (Environmental Protection Agency) Date:

SIGNED by (Ghana Ports and Harbours Authority) Date:

SIGNED by (Ministry of Interior) Date:

SIGNED by (Ministry of Defence) Date:

SIGNED by (Ghana Maritime Authority) Date:

SIGNED by (Ghana Navy) Date:

SIGNED by (Attorney General's Department) Date:

SIGNED by (National Association of Oil Marketing companies) Date:

SIGNED by (Tema Oil Refinery) Date:

SIGNED by (Wildlife Division of Forestry Commission) Date:

SIGNED by (Ghana Fire Service) Date:

SIGNED by (National Disaster Management Organisation) Date:

SIGNED by (Oil Exploration & Production Companies) Date:

SIGNED by (Fisheries Department) Date:

SIGNED by (Regional Maritime University) Date:

SIGNED by (Volta River Authority) Date:

SIGNED by (Ghana Association of Marine Surveyors) Date:

SIGNED by (Ghana National Association of Farmers and Fishermen) Date:

SIGNED by (Information Services Department) Date:

SIGNED by (Oceanography Department of UG) Date:

SIGNED by (Ghana Shippers Council) Date:

SIGNED by (Customs, Excise & Preventive Service) Date:

SIGNED by (Ghana Immigration Service) Date:

SIGNED by (Rep. of Environmental NGOs) Date:

SCHEDULE 1

Administrative Arrangements

Application

1. These arrangements will apply to action taken when responding to oil and chemical pollution in Ghanaian waters.
2. Arrangements between the national and/or regional authorities with respect to the role of the oil industry and for the mutual use of equipment and expertise are set out in separate agreements.

Division of Responsibility

3. In some cases the Statutory and Combat Agencies will be the same agency.
4. The Statutory Agency responsible for oversighting response action for oil and/or chemical spills other than those from offshore petroleum operations is as follows:
   (i) within the three nautical mile coastal waters and foreshore areas - the regional designated Statutory Agency;
   (ii) outside the three nautical mile coastal waters and in coastal waters - the Environmental Protection Agency (EPA), as the National Statutory Agency, EPA.
5. Statutory Agency responsibility for oversighting response actions to pollution events from offshore petroleum operations lies with the National Statutory Agency,
6. Combat Agency responsibility for responding to oil and/or chemical spills in various jurisdictions can vary between the regions. Generally, the following applies:

   (i) **at oil terminals -** the relevant oil company or terminal operator using industry arrangements as required such as mutual aid arrangements. Should a situation develop where the necessary response is beyond oil company or terminal resources, responsibility for control will transfer to the Statutory Agency, with response assistance from other National Contingency Plan stakeholders as required. Statutory Agencies should enter into predesignated response arrangements with oil terminal operators which clearly specify the agreed division of responsibilities and terms and conditions for transferring control;

   (ii) **at chemical terminals -** the relevant chemical company or terminal operator under industry arrangements. Should a situation develop where the necessary response is beyond chemical company or terminal resources, responsibility for control will transfer to the Statutory Agency, with response assistance from other National Contingency Plan stakeholders as required. Statutory Agencies should enter into predesignated response arrangements with the relevant Chemical Terminal operators which clearly specify the agreed division of responsibilities and terms and conditions for transferring control;

   (iii) **in ports (other than at oil and chemical terminals within a port),** the port operator or responsible authority, as specified in the relevant

contingency plan, with assistance from other National Contingency Plan stakeholders as required; and

(iv) **within the three mile coastal waters -** the responsible regional Statutory Agency with assistance from other National Contingency Plan stakeholders as required.

(v) **beyond the three mile coastal waters -** the National via EPA except in those incidents close to shore when oil or chemicals are likely to impact the shoreline. In these circumstances, the EPA via the Statutory Agency will be the Combat Agency for protecting the coastline while GMA assumes responsibility for ship operational matters, eg containing the spill within the ship, organising salvage, etc.

(vi) **for spills emanating from offshore petroleum operations -** the relevant oil company with assistance, as required, from the Statutory Agency;

7. In those incidents close to National borders it is essential for high-level consultation and cooperation between the two countries to ensure a clear delineation of responsibility for the response.
8. The Combat Agency will as soon as possible undertake preventive and clean up action or may request another agency to act on its behalf.
9. In circumstances where the incident has exceeded or is likely to exceed the capacity of the Combat Agency to respond effectively or the response is not being conducted effectively, the Statutory Agency may assume control of the response.
10. The Statutory Agency is responsible for the institution of legal proceedings and the recovery of clean up costs on behalf of all participating agencies.
11. An oil/chemical spill response will be terminated when the Statutory Agency considers that the effective completion of the response is achieved based on expert Combat Agency advice. The Statutory Agency will be responsible for announcing the termination of a response, after consultation with the Combat Agency. These arrangements are to be specified in all contingency plans.

12. Roles of some key institutions and personnel within the NCP Organization

Ministry of Environment and Science

By Act 490, 1994 the Minister of Environment and Science has been designated as the responsible person for protection of the environment of the Republic of Ghana. Within this framework therefore, the Ministry of Environment and Science shall be responsible to the Government for the following duties:

To ensure

- that EPA as the national authority develops and implement the National Contingency Plan (NCP)
- the oil/chemical Emergency preparedness – everything in place with well-defined roles and equipment ready for use.
- Collection of the best possible information on a given spill, the cause/nature of spill and what hazards it constitutes and present such information to the Government
- Co-operation with all parties concerned with the NCP
- collection of relevant information on international developments on response to oil spill

- co-operation with other parties to the Abidjan Convention and International Organizations like IMO, UNEP, etc.

The National Oil Spill Advisory Board (NOSAB):
The National Oil Spill Advisory Board is established as advisory organ to secure the maximum human, technical, scientific, administrative and logistic support to the Environmental Protection Agency with regard to oil pollution situations. The following Agencies shall appoint one (1) representative each to the Oil Spill Advisory Board:

1. The Ministry of Environment and Science (Chairman)[Φ]
2. The Ministry of Transport
3. The Ministry of Finance & Economic Planning
4. The Ministry of Foreign Affairs
5. The Ministry of Defence
6. The Ministry of Interior
7. The Ministry of Information
8. The Ministry of Energy
9. The Ministry of Justice & Attorney General's Department
10. Ministry of Local Government and Rural Development
11. Environmental Protection Agency,

Within the scope of the NCP, the NOSAB has the following tasks to:

- Advise on general combating strategies and methods
- Advise on the overall strategy for protecting all areas of the Republic of Ghana
- Advise the Minister of the Environment and Science on broad policy issues regarding oil spill response
- Provide technical support to the Environmental Protection Agency in areas outside NCP
- Handle economic and legal questions in relation to a combating operation
- Co-operate with other national authorities, private organizations and enterprises
- Advise on recommendations from the Environmental Protection Agency on purchase and establishing of adequate facilities and equipment
- Advise on yearly programme for training and exercises covering all personnel in the NCP-Organization

The Chairman of the NOSAB shall convene meetings of the Board at a minimum of twice a year. Prior to the Board Meeting, the chairman may issue a draft agenda to be accepted by the meeting. In case of a spill situation, the Chairman may assemble the Board as convenient.

[Φ] The Chairman of the Oil Pollution Advisory Board shall be appointed from the Ministry of Environment and science

The NOSAB shall promote technical, financial, scientific, administrative, logistic support and manpower to the National Oil Spill Plan Executing Body (EPA). The Ministry of Environment and Science shall appoint a Chairman for the NOSAB who shall be the convener of Advisory Board meetings and shall be responsible for its agenda.

Environmental Protection Agency (EPA)

The Environmental Protection Agency (EPA) has been designated as the authority, which on behalf of the Ministry of Environment and Science is responsible for the management of the environment including oil spill preparedness, response and co-operation. Within the scope of the National Contingency Plan, the EPA is responsible to the Ministry of Environment and Science as follows:

- As **National Reporting Centre** or focal point to receive all reports concerning accidents at sea, at inland waterways or on land which have resulted in or may result in oil spill.

- As **National Contact Point** to receive reports on accidents inside the geographical coverage of this plan, which have resulted in or may result in oil spill of the sea in a neighbouring state or a state within the WACAF Co-operation

In its daily operations the Environmental Protection Agency is responsible for preparedness and response covered by the NCP.

On this basis, the EPA's role as managing agency of the National Contingency Plan includes:

i. maintaining the National Oil Spill Contingency Plan and the National Chemical Spill Contingency Plan;
ii. providing on-site oil and/or chemical spill operational, technical, environmental and administrative advice and assistance to Statutory and Combat agencies;
iii. maintaining a listing of National Response Team members to assist Statutory and Combat Agencies to respond to oil spills in the marine environment;
iv. maintaining a national database of trained oil and/or chemical spill response personnel;
v. maintaining a national inventory of oil and chemical spill response equipment;
vi. maintaining uniform standards and testing protocols for oil spill dispersants and other chemical response agents;
vii. maintaining a national database of oil and chemical spill incidents, collating data provided by regional agencies;
viii. providing advice regarding setting of standards for equipment, training and implementation of oil and chemical spill responses;
ix. providing advice and guidelines for contingency planning and audit of response plans;

x. managing the development and delivery of annual and longer term equipment acquisition programs for EPA-owned equipment;
xi. auditing and inspecting response equipment stockpiles and maintenance programs;
xii. coordinating and auditing the National Contingency Plan training program endorsed by the National Contingency Plan Operations Group and delivery of EPA courses;
xiii. reviewing and reporting to National Contingency Plan stakeholders on regional or industry spill responses and exercises;
xiv. managing research and development projects endorsed by the National Contingency Plan Operations Group and the dissemination of information on pollution prevention, improved spill response and planning techniques;
xv. being accountable for the national's responsibilities as outlined in these Arrangements;
xvi. managing revenue collected by EPA for the purposes of the National Contingency Plan and expenditure against a four-year rolling budget developed by the National Contingency Plan Management Committee, and provision of financial statements to the National Contingency Plan Management Committee;
xvii. managing the Environmental Sensitivity Atlas and Oil Spill Trajectory Modelling programs;
xviii. providing the Chair to the National Contingency Plan Operations Group;
xix. represent the interests of National Contingency Plan stakeholders in international fora;
xx. providing secretariat services to the National Contingency Plan Management Committee and he National Contingency Plan Operations Group; and
xxi. administering and enforcing national legislation on oil and chemical pollution.

The following Maritime Operating Agencies also have critical role to play in oil/chemical spills management

Ghana Maritime Authority

The Ghana Maritime Authority (GMA) established under Act 630 of 2002 and charged with the responsibility of monitoring, regulating and coordinating activities in the maritime industry has a key role to play in the NCP.

Daily Operations

In its daily operations the Authority is to ensure the provision of safe, secure and efficient shipping services and the protection of the marine environment from ship source pollution. In this regard the Authority shall ensure that oil vessels operating in Ghanaian waters prepare their Shipboard Marine Pollution Plans (SOPEP) and have the necessary equipment to enable them provide tier 1 response to spills originating from them.

GMA shall assist in developing specific policies on places of refuge, and these should be followed as appropriate

Spill situations
In the event of an incident involving a damaged or disabled ship, GMA shall be responsible for salvage activities, safety issues relating to vessels on interstate or foreign voyages and ship operational matters.

Salvage Liaison
During an incident requiring the salvage of a vessel, GMA shall appoint a Casualty Coordinator (CC).

Ghana Navy
The roles of the Ghana Navy are defined to address the nation's Maritime Strategy which is the creation of that defence posture which will deter and defend any aggression from sea and protect the nation's sea lines of communication and the resources of the sea. The areas of interest to the Ghana Navy are:

- The maintenance of territorial integrity.
- The prevention of criminal and illegal activities.
- Management of marine resources and the protection and preservation of the marine environment.
- Safety of life and property at sea.
- Participation in Peace Support Operations, disaster and humanitarian and aid to civil authorities.

Thus the Ghana Navy provides coastal defence, fishery protection, and internal security on Lake Volta. In 1994 the Navy was re-organized into an Eastern command, with headquarters at Tema, and a Western command, with headquarters at Sekondi. The Ghana Navy is therefore better placed to act as incident controller (On-Scene Commander) in spill situations.

Daily Operations
The Ghana Navy shall provide sufficient communication facilities to allow the rapid transfer of information to the National Reporting Centre and between the National Oil Spill Response Centre.

At the National Reporting Centre within the Navy Operations Room the following communication lines shall be established for reporting and communication in relation to the National Contingency Plan.

Telephone Lines:
Mobil telephones
Fax Lines
Telex Lines
Radio Communication channels in frequencies
Special hand held equipment for communication during spill situations
Email

Other means of communication

Spill Situations

During spill situations the Director of Operations of the Ghana Navy shall act as the On-Scene Commander, who shall be responsible for all the incident control.

Ghana Ports & Harbours Authority (GPHA)

The GPHA is responsible for planning, managing, building and operating Ghana's seaports. The GPHA owns Ghana's two main seaports (Takoradi and Tema) and has the following functions with regard to their operation, maintenance and control:

- regulate the use of ports and of the port facilities;
- provide, maintain, extend and enlarge port facilities as required for the efficient and proper operation of the port;
- maintain and deepen the approaches to, and the navigable waters within and outside the limits of any port;
- maintain lighthouses and beacons and other navigational service and aids as necessary;
- provide facilities for the transport, storage, warehousing, loading, unloading and sorting of goods passing through any port, and operate or provide access to road haulage service providers; and
- provide stevedoring and porterage services.

Daily Operations

The GPHA shall provide sufficient communication facilities to allow the rapid transfer of information to the National Reporting Centre and the National Oil Spill Response Centre.

Responsibilities and Duties of "Key-Personnel"

To ensure a clear definition of responsibilities and tasks and to delegate the necessary power to initiate an effective and adequate response operation without any delay, responsibilities and duties for the following "Key-personnel" have been developed.

1. Head of the National Oil Spill Response Centre within the Environmental Protection Agency
2. Duty Officer at the national Oil Spill Response Centre within the Environmental Protection Agency
3. The National On-Scene Commander (NOSC) (Ghana navy)
4. Duty Officer at the National Reporting Centre within the Ghana Navy

Duties of the Head of National Oil Spill Response Centre

Within the Environmental Protection Agency, the Head of the National Oil Spill Response Centre is responsible to the Executive Director of the Environmental Protection Agency and is the responsible person for:

- All matters dealing with oil spill response planning,
- Maintaining the oil spill contingency organization on a high state of alertness and
- Overall operational response to the accident during a spill situation.

Duties of the Duty Officer at the National Oil Spill Response Centre

The Duty Officer at the National Oil Spill Response Centre is responsible to the Head of the National Oil Spill Response Centre and may without further instructions initiate the following activities in relation to the National Oil Spill Contingency Plan.

- Further investigation and classification of a reported oil pollution
- Further investigation of a reported accident at sea, inland waterways or in relation to oil pipelines
- Decide if a response operation has to be initiated in consultation with the head of the NOSRC as the situation may require.
- Initiate alarm and mobilization procedures in accordance with the NCP, in case of a serious pollution or threat of a serious pollution.
- Evaluate the situation, and if necessary, initiate all means to stop or reduce the outflow
- Initiate response operation or other initiatives which may result in a limitation of the human, ecological and economical consequences of oil spillage
- Inform the Head of the National Oil Spill Response Centre on reported spills or accidents and action taken without delay.
- Take operational charge of a response operation if required.
- Prepare the necessary messages to inform such states as required if the pollution in question constitutes a threat to one or more states.

Responsibilities and duties of the On-Scene Commander

The On-Scene Commander is responsible to the Head of the National Oil Spill Response Centre for the following issues.

- The deployment of the required resources on-scene of the spill.
- The co-ordination of all activities on-scene with regard to the response including the direction and the deployment of needed resources for prevention of pollution, containment clean up and disposal of any pollutants and restoration of the site.
- Providing a focal point of information at the spill site for all parties concerned.
- Preparing cost analysis and a detailed report covering all aspects of the spill.
- Collecting samples and other evidence necessary for claims and compensation.
- Regular transmission of situation reports to the National Oil Spill Response Centre.
- Development of communication plan for actual combating operations.
- Making recommendation to the National Oil Spill Response Centre on when to terminate the operation.
- Ensuring that all equipment is properly cleaned maintained and conserved before returned to stockpiles or owner(s).
- Preparing a final report on the entire operation including recommendations for changes to operational procedures and equipment performance with suggestions for additional equipment and proposals for changes.

Duties of the Duty Officer at the National Reporting Centre/National Contact Point (Navy Headquarters Operations Room)

The Duty Officer at the National Reporting Centre/National Contact Point is responsible to the Head of the National Oil Spill Response Centre for the following matters in relation to the National Oil Spill Response Plan.

- Receive and relay without any delay all reports on accidents at sea, inland waterways or in relation to oil pipelines, storage and transport facilities to the Duty Officer at the National Oil Spill Response Centre
- Receive and relay all reports on observed oil spill within the geographical coverage of the NCP.
- Receive and relay all reports on accidents at sea or observed oil spill in neighbouring countries and other countries within the WACAF Co-operation.
- Establish the best possible communication between the National Oil Spill Response Centre and national or international parties involved in an oil spill.

SCHEDULE 2

Financial Arrangements and Funding

1. The Environmental Protection Agency (EPA) is largely a subverted Agency and receives its annual budgetary support from the Central Government through the Ministry responsible for the Environment. EPA is also mandated by Law (Act 490) to charge fees, which are kept in an Environment Fund.

The National Oil Spill Response Fund

2. A National Oil Spill Response Fund needs to be established. The objectives of the fund are:

   - To provide financial resources for planning and combating a spillage, discharge or dumping of oil
   - To provide financial resources in response to oil spills where the spiller cannot be identified; and
   - To provide for any other contingency arising out of an oil spillage

Sources of Funds

3. The fund shall consist of several sources of contribution and one of them is all donations and contributions received from within or outside Ghana. The following shall comprise the sources of contribution to the Fund:

   a. Levy on petroleum products (price build-up). Suggested amount is GH¢0.10/litre

   b. Levies from the industries, whose activities pose risk of oil/chemical spills, such as oil marketing companies, oil exploration & production companies, offshore oil transfer facilities, shipping companies, oil refineries, etc. The levy shall be applied, on a case-by-case basis, depending on the facility location, type and risk profile.

   c. Contributions from the following identified State Agencies:

      i. Environmental Protection Agency
      ii. Ghana Ports & Harbours Authority
      iii. Tema Oil Refinery
      iv. Volta River Authority
      v. Ghana National Petroleum Corporation
      vi. National Petroleum Authority

Management of Fund

4. The fund shall be managed by a committee made up of representatives of following institutions and chaired by EPA officer not below the rank of a director.

      i. Environmental Protection Agency
      ii. Ghana Ports & Harbours Authority
      iii. Tema Oil Refinery
      iv. Volta River Authority
      v. Ministry of Finance & Economic Planning
      vi. Ghana National Petroleum Corporation

vii. Ministry of Energy
viii. National Petroleum Authority

5. To ensure that the burden of funding remains equitable, the Oil Spill Fund will be reviewed; in consultation with NOSAB as each national risk assessment is completed. If the risk profile of the contributing maritime sectors has changed, then the relative proportion of their contribution to the fund will change to reflect more closely their contr0ibution to the risk.

Budgetary Allocation from the Fund

6. EPA will manage the National Contingency Plan against a four-year rolling budget developed and maintained by the National Contingency Plan Management Committee and submitted for advice each year to the NOSAB. EPA will provide for a range of programs to support National Contingency Plan activities, as set out in paragraphs 7 to 21 below.
7. Each financial year the EPA shall produce a financial plan for expenditure from the Fund. This is referred to the Oil Spill Fund committee and NOSAB for advice and then recommendation for approval to the Minister of Environment Science and Technology. The Ministry of Environment Science and Technology approves the EPA's planned expenditure from the fund and arranges for an audit of the previous year's expenditure.
8. The fund must at all times maintain a minimum balance, in order to ensure that some funds are available to initiate a spill response. If needed, emergency access to more funding will be sought through arrangements in place between the EPA and Ministry of Finance.

Administration of the National Contingency Plan by EPA

9. EPA will meet the administrative costs associated with management of the National Contingency Plan. This includes EPA staffing costs, travel and transport, communications expenses, and depreciation.

Equipment

10. The Government of Ghana through the EPA will purchase equipment for incident response, in accordance with a four year rolling oil spill response capital program developed by the National Contingency Plan Operations Group. This equipment will not include first strike equipment for offshore petroleum operations, terminals and ports.
11. EPA will develop and implement an annual equipment maintenance program and pay reasonable storage costs for equipment held by EPA in central and regional stockpiles.
12. EPA will develop and implement an annual equipment audit program for equipment held by EPA in central and regional stockpiles.
13. EPA will develop and maintain a Marine Oil Spill Equipment System (MOSES) that provides information on equipment held by EPA, regions and industry.

Training

14. EPA will fund and coordinate the EPA Oil Spill Management Courses (Level 2 course) and State Marine Pollution Controller Courses (Level 3 course) to meet the requirements of the NCP.

National Contingency Plan Biennial Exercise

15. EPA will provide funding assistance to facilitate the development and delivery of a major biennial exercise by EPA, region and industry to test response plans, procedures and arrangements. Such assistance will be determined on a case-by-case basis in consultation with the National Contingency Plan Operations Group.

Fixed Wing Aerial Dispersant Capability (FWADC)

16. EPA will enter an agreement with Oil Spill Response Limited (OSRL)to provide and manage the operational delivery of the fixed wing aerial dispersant capability and the administrative functions associated in maintaining the capability.

Dispersants

17. EPA will develop, maintain and fund a rolling program to provide for the purchase and storage of oil spill dispersants for Tier 2 and 3 incidents.

Incident Cost Recovery

18. EPA will replace consumable materials used and reimburse the costs and expenditure incurred by a region or Combat Agency and any assisting agency in the prevention and clean-up of marine pollution from ships, in accordance with Schedule 1 to this Agreement.

Research and Development

19. EPA will fund research and development projects agreed by the National Contingency Plan Operations Group and approved by the National Contingency Plan Management Committee.

Environmental Sensitivity Atlas (ESA)

20. EPA will manage the ESA program and provide annual funding to allow the region to ensure existing data remains current and to add additional data as necessary, as specified in the Environmental Sensitivity Atlas strategy agreed by the National Contingency Plan Operations Group.

Oil Spill Trajectory Model (OSTM)

21. EPA will develop, manage and provide annual funding for an OSTM program.

Regions

22. The Regions will maintain and administer Regional Contingency Plans, in accordance with obligations set out in this agreement, and provide a range of programs to support National Contingency Plan activities, as set out in paragraphs 23 to 28 below.

Equipment

23. Regions will administer an appropriate preparedness and response capacity at oil/ chemical terminals, offshore drilling rigs/platforms and ports within their jurisdiction in accordance with paragraphs 22 to 24 of Schedule 1 to this Agreement. This will include appropriate arrangements for equipment maintenance and audits. Regions will give due regard to principles developed by the National Contingency Plan Operations Group.

24. Regions will provide regular updates of equipment held by the Regions to EPA to ensure that when the Marine Oil Spill Equipment System (MOSES) is developed it will be accurate.

Training

25. Regions will be responsible for the delivery of Equipment Operator Courses (Level 1 Course), Shoreline Cleanup Courses and Oil Spill Administration Courses to meet the requirements of the Regions.

Exercises

26. Regions will provide funding and personnel as appropriate to assist in the development and delivery of a major biennial exercise by EPA, Regions and industry to test response plans, procedures and arrangements. EPA will reimburse the costs of the travel of regional personnel who are involved in the planning and umpiring of a biennial exercise.

27. Regions will arrange, conduct and bear the cost of exercises required by the Statutory Agencies.

The spiller pays Principle

28. Wherever possible the full cost of any spill response and clean-up operation should be sought from the spiller. All efforts will be made to ensure that costs are recovered. Measures employed will include: the early detection of spills; the collection of evidence needed for the successful prosecution of offenders; and the development and maintenance of information systems to ensure that all costs are recorded and accounted for.

29. In carrying out the approval, audit and inspection of Tier 1 sites and associated contingency plans EPA will be provided with the authority to recover these costs either directly from the industry concerned or from the Oil Spill Fund.

APPENDIX 2:

List of Stakeholder Agencies in the National Oil Spill Management

Note: The functions of these institutions are defined in Appendix 4 of the National Oil spill Response Strategy document.

1. Department of Fisheries
2. Meteorological Services Department
3. Customs, Excise & Preventive Service
4. Immigration Department
5. Ministry of Defence
6. Ghana Navy
7. Ghana Air Force
8. Ghana Army
9. Tema Oil Refinery
10. Volta River Authority
11. Ministry of Foreign Affairs
12. Ghana Ports & Harbours Authority
13. The Regional Maritime Academy
14. Ghana National Petroleum Corporation
15. Association of Oil Marketing Companies
16. Department of Fisheries and Oceanography of University of Ghana
17. Ghana Maritime Authority
18. Ministry of Communication and Technology
19. Attorney Generals Department
20. Ministry of Local Government and Rural Development
21. Wildlife Division of Forestry Commission
22. Volta Lake Transport Company
23. Ministry of Energy
24. Energy Commission
25. Ministry of Finance
26. Environmental NGOs
27. Media Houses
28. Ghana Standards Boards
29. Ghana Telecom
30. Ghana National Association of Farmers and Fishermen
31. Ghana Railway Corporation
32. Tema Lube Oil
33. Ministry of Food and Agriculture
34. Council for Scientific and Industrial Research
35. Ghana Police Service
36. National Disaster Management Organisation
37. Ghana National Fire Service
38. National Development Planning Committee
39. National Association of Contractors
40. Ghana Tourist Board
41. Ghana Association of Marine Surveyors

APPENDIX 3

CONTACTS DETAILS

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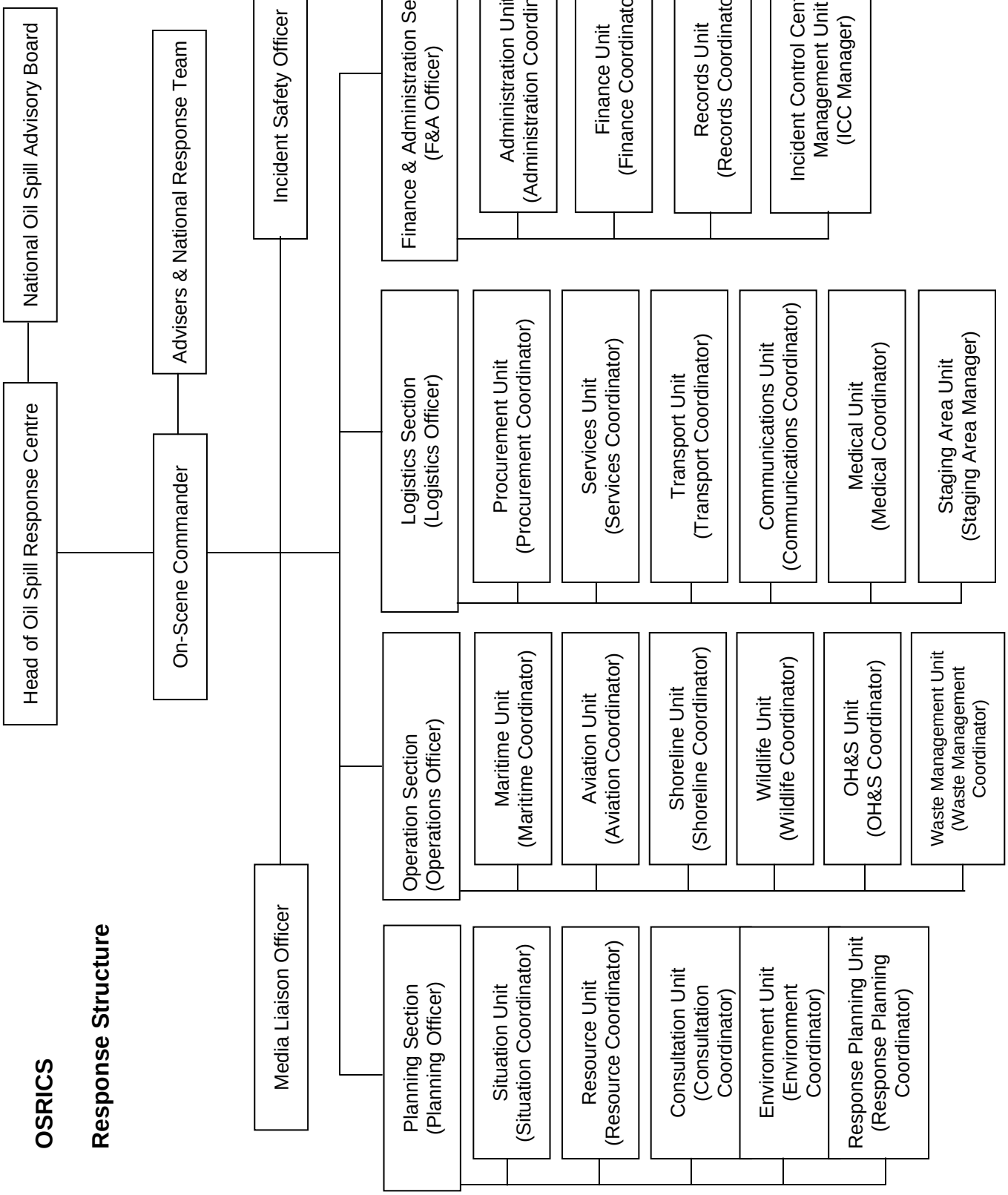
APPENDIX 4

RESPONSE STRUCTURE


OSRICS
Response Structure
National Oil Spill Advisory Board
Head of Oil Spill Response Centre
Advisers & National Response Team
On-Scene Commander
Incident Safety Officer
Media Liaison Officer
Finance & Administration Section (F&A Officer)
Administration Unit (Administration Coordinator)
Finance Unit (Finance Coordinator)
Records Unit (Records Coordinator)
Incident Control Centre Management Unit (ICC Manager)
Logistics Section (Logistics Officer)
Procurement Unit (Procurement Coordinator)
Services Unit (Services Coordinator)
Transport Unit (Transport Coordinator)
Communications Unit (Communications Coordinator)
Medical Unit (Medical Coordinator)
Staging Area Unit (Staging Area Manager)
Operation Section (Operations Officer)
Maritime Unit (Maritime Coordinator)
Aviation Unit (Aviation Coordinator)
Shoreline Unit (Shoreline Coordinator)
Wildlife Unit (Wildlife Coordinator)
OH&S Unit (OH&S Coordinator)
Waste Management Unit (Waste Management Coordinator)
Planning Section (Planning Officer)
Situation Unit (Situation Coordinator)
Resource Unit (Resource Coordinator)
Consultation Unit (Consultation Coordinator)
Environment Unit (Environment Coordinator)
Response Planning Unit (Response Planning Coordinator)

APPENDIX 5

NATIONAL MARITIME PLACES OF REFUGE RISK ASSESSMENT GUIDELINES

MARITIME PLACES OF REFUGE RISK ASSESSMENT GUIDELINES

1 Introduction

"When dealing with ships in distress, the requirement is to find them an area of sheltered water where the situation can be stabilised, the cargo made safe and the salvors and authorities can evaluate what further steps are necessary without the pressure of a crisis hanging over their heads. The concern of port authorities that they should not be exposed to the risks of pollution, fire or explosion is well understood and is not in any way challenged. But equally, this is an issue which will not go away and must be addressed. We cannot continue to permit a situation to unfold in which salvors dealing with a damaged vessel containing a potentially hazardous cargo have nowhere to go."

Secretary-General, International Maritime Organization
(Keynote address: 22nd World Ports Conference of the International Association of Ports and Harbours (IAPH), Montreal, Canada, May 2001)

1.1 Purpose

1.1.1 The National Maritime Place of Refuge Risk Assessment Guidelines (the Guidelines) are intended to assist Ghanaian maritime administrations, ship Masters and the maritime industry in identifying:

- places of refuge in circumstances where an emergency cannot be dealt with at sea; and,
- the appropriate procedures to access a place of refuge.

The Guidelines have been prepared recognizing that there is a clear separation in responsibility between maritime security and maritime safety. These Guidelines are intended to assist both maritime safety for commercial trading ships and to protect the environment.

1.2 Application

1.2.1 The Guidelines apply to any maritime incident giving rise to circumstances where the National government agencies need to consider a request for a place of refuge within internal waters, the territorial sea or the Ghanaian Exclusive Economic Zone.

1.2.2 The Guidelines are complementary to, and should be read in conjunction with, any existing applicable guidelines.

1.2.3 The Guidelines should at all times be applied in a manner consistent with the principles of international law, in particular those relating to the balance of interests between a ship in distress and Ghana's national interest. Thus, these Guidelines:

- are voluntary;
- are flexible to take into account the wide variety of circumstances that might arise;
- allow for case-by-case analysis and application; and,
- seek to enhance a cooperative and consensus approach between all parties.

1.3 Definition of a Place of Refuge and a Maritime Casualty

1.3.1 "Place of refuge" is a new term to maritime and International Maritime Organization (IMO) practices and replaces the previously used terms "port of refuge" or "safe haven".

1.3.2 A place of refuge is a place where a ship in need of assistance can find favourable conditions enabling it to take action to stabilize its condition, protect human life and reduce the hazards to navigation and to the environment.

1.3.3 "Place of refuge" does not appear in any IMO instrument or in the United Nations Convention on the Law of the Sea (UNCLOS). However, the advantage of the term, place of refuge, is that while it may include ports, it is not necessarily confined only to such ports. Additionally, place of refuge is more consistent with a "place of safety" in the Lloyds Open Form.

1.3.4 When a vessel is in a position where:

- the safety of the vessel, its crew and/or passengers are at risk; or,
- it poses a threat to the marine environment or other property,
- such a vessel should seek a place of refuge.

1.3.5 Generally, access to a place of refuge may be sought in circumstances involving a maritime casualty, force majeure or distress, or some other operational, logistical or medical situation.

1.3.6 A "maritime casualty" may arise following a collision of ships, stranding or other incident of navigation, or other occurrence on board a ship or external to it resulting in material damage or imminent threat of material damage to the ship or its cargo.

1.3.7 There may also arise circumstances where a foreign ship undertaking the right of innocent passage through the territorial sea, seeks to stop and anchor in cases of force majeure or distress. This right is explicitly referred to by UNCLOS in the case of navigation in the territorial sea (Article 18(2)), straits used for international navigation (Article 39.1(c)) and in archipelagic waters (Article 54).

1.3.8 Distress could be the result of force majeure or other disaster that endangers the safety of a vessel. Force majeure is understood as an act of a higher force, a force or event beyond reasonable human control, acts of God, events generally uncontrollable by humanity including storms, hurricanes and other natural disasters.

1.3.9 Finally, as part of a vessel's normal operations, there may be occasions when it requires to remain at a place, either offshore or in a port, to effect temporary repairs, to land a sick or injured crew member, to pick up navigational charts, emergency stores, etc.

1.3.10 Any type of ship, including a warship, may invoke the right to a place of refuge provided there is a genuine distress, whatever its cause. It should be noted that if a place of refuge is granted to a warship, most relevant international conventions, in particular those relating to intervention, liability and compensation, do not apply (see also Section 4.3, below).

1.4 Why Provide a Place of Refuge?

1.4.1 Under longstanding maritime tradition, and the practice of good seamanship, a ship's Master faced with a maritime casualty, *force majeure*, or some other operational, logistical or medical situation is expected to seek a place of refuge.

1.4.2 While there may be a natural reluctance for some maritime administrators to accept damaged or disabled ships into their area of responsibility, it is rarely possible to deal satisfactorily and effectively with a marine casualty in open sea conditions. In some

circumstances, the longer a damaged ship is forced to remain at the mercy of the elements in the open sea, the greater the risk of the vessel's condition deteriorating or the sea, weather or environmental situation changing, and thereby becoming a greater potential hazard to Ghana.

1.4.3 A place of refuge should therefore be provided by Ghana with the aim of protecting:

- the safety of the vessel's crew, passengers and salvage crew;
- the safety of human life and health within the immediate vicinity of the distressed vessel;
- the ecological and cultural resources, and the marine, coastal and terrestrial environments;
- economic and socio-economic infrastructure, including sensitive installations, within the coastal zone and ports; and,
- the safety of the vessel and its cargo.

International Law

1.4.4 As a Contracting State to the International Convention on Salvage, 1989 (Salvage 1989), Ghana is obliged under Article 11 of the Convention when considering a request for a place of refuge, to take into account the need for cooperation between salvors, other interested parties and public authorities to ensure the efficient and successful performance of salvage operations. Article 11 of the Salvage Convention states:

> *"A State Party shall, whenever regulating or deciding upon matters relating to salvage operations such as admittance to ports of vessels in distress or the provision of facilities to salvors, take into account the need for co-operation between salvors, other interested parties and public authorities in order to ensure the efficient and successful performance of salvage operations for the purpose of saving life or property in danger as well as preventing damage to the environment in general."*

1.4.5 However, there is at present no international requirement for a country to provide a place of refuge for vessels in distress. Thus, when considering a request for a place of refuge, Ghana, like most other maritime administrations, is faced with the need to balance several competing factors including:

a. the long-established humanitarian right of a ship in distress to seek a place of refuge for the purpose of overcoming the distress and carrying out repairs, etc.
   The right of a ship in distress to seek refuge is an old established and universally accepted humanitarian right under international law. Any type of ship, including warships, may invoke this right, provided there is a genuine distress, whatever its cause. The right is limited by its purpose – to overcome the distress by seeking shelter, carrying out the necessary repairs, etc;
b. the duty of Ghana to render assistance to ships in distress.
   The duty to render assistance to vessels and persons in distress at sea is also a well-established principle of international maritime law [see for example: the International Convention for the Safety of Life at Sea (SOLAS) 1974, Chapter V and the International Convention on Maritime Search and Rescue (SAR) 1979, Chapter 2].
c. the right of Ghana to regulate, and to place conditions on, entry into its ports.
   The right of Ghana to regulate entry into its ports is reflected in Articles 2 and 25(2) of UNCLOS; and,

d. the right of Ghana to protect its coastlines and marine resources from pollution or the threat of pollution.

The right of Ghana to take action to protect its coastline or related interests from pollution or threat of pollution following upon a maritime casualty is also well established in international law (see for e.g. UNCLOS, Articles 194, 195, 198, 199, 211, 221 and 225).

2. Requests for a Place of Refuge

2.1 Who in Ghana has the Authority to Grant a Place of Refuge?

21.1.1. Within Ghana, the Ghana Maritime Authority (GMA), Ghana Ports & Harbours Authority and Ghana Navy have the authority to grant a request for a place of refuge.

2.2 Who Should Make a Request and to Whom?

2.2.1 The most appropriate person to make a place of refuge request is the person in charge of the ship at the time. While this is most likely to be the vessel's Master, it is acknowledged that there is a need to maintain flexibility in light of prevailing circumstances and that a request for a place of refuge could equally come from a vessel's officer, the owner, the operator, the agent or a salvor.

2.2.2 All requests for a place of refuge should be made through GMA.

2.2.3 However, allowance should be made for passing ships or ships visiting Ghana for the first time that may not be familiar with standard reporting requirements in Ghanaian waters. Consequently, a place of refuge request could equally be made to a relevant agency, a port authority/corporation, a harbour master, etc, depending upon the circumstances prevailing at the time.

2.2.4 If a port authority/corporation or harbour master receives a request for a place of refuge they should advise GMA and the relevant Region agency.

2.2.5 When a place of refuge request is made it is important to try to minimize the number of contact points between those interests associated with the vessel and the relevant government agency. The problems associated with multiple points of contact during a maritime incident are well recognized. Accordingly, the prime contact point during an incident should be the point to which contact was first made unless the responsibility for managing an incident has been formally passed to another jurisdiction or responsible agency (see Section 4.1, below)

2.3 Information to be Supplied With a Place of Refuge Request

2.3.1 A vessel requesting a place of refuge should supply all relevant information to assist the relevant National or Region agency reach a decision on whether to grant a request for a place of refuge. Full details of the requisite information are outlined at Attachment A.

3. Deciding Whether to Grant a Request for a Place of Refuge

3.1 Introduction

3.1.1 In Ghanaian waters, places of refuge are determined on a case-by-case basis and are not pre-designated.

3.1.2 This approach is premised on the fact that a place of refuge is not a fixed location but depends on the characteristics of the vessel, the facts of the incident and prevailing environmental conditions and the likely consequences. For example, a place of refuge that is deemed unsafe for a particular vessel in a particular instance may well be held to be safe for the same vessel in different circumstances.

3.1.3 GMA should initially explore the option of continuing to respond to a maritime casualty at sea rather than automatically granting approval to access a place of refuge.

3.1.4 In order to do so, the GMA will need to collect, synthesise and analyse all relevant information so as to allow a comparison between the risks involved if the ship remained at sea and the risks that it would pose to the place of refuge and its environment. Attachment B outlines the information that would be required in this instance.

3.1.5 In circumstances where it is not possible to respond to a maritime casualty at sea the GMA will need to address a range of criteria when assessing a request for a place of refuge.
3.1.6 Attachment C outlines the relevant information that will be needed to assist GMA reach a decision on whether to grant a request for a place of refuge. Where possible, this information should be provided by the ship or its local agent. However, where applicable, specialized information may be sought from other maritime agencies and/or other relevant government organizations.

3.1.7 In assessing a place of refuge request, GMA may request that duly qualified personnel undertake an expert inspection of the ship.

3.2 Decision Making Processes

3.2.1 The reporting and decision-making process following receipt of a place of refuge request is set out below.

3.2.2 The agency receiving a request for a place of refuge shall immediately inform other relevant stakeholders. In most instances, this will involve EPA notifying Region lead agencies in accordance with existing arrangements and contacts under the National Contingency Plan (see section 2.2 of the National Oil Spill Contingency Plan), including relevant port authorities/ corporations if they are likely to be a place of refuge. Where a Region or port authority/corporation receives a direct request for a place of refuge, GMA should be notified without delay.

3.2.3 Responsibility for assessing a request for a place of refuge will generally mirror the division of responsibility for pollution response as set out in the Inter-Agency Agreement on the National Contingency Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances – that is:

- requests for a place of refuge in a port or within the three nautical miles coastal waters will be the responsibility of the relevant Region;
- requests for a place of refuge in a port of an external territory, the coastal waters of an external territory or waters outside the three nautical miles coastal waters of a Region will be the responsibility of GMA;

3.2.4 Assessment of a place of refuge request should be undertaken in accordance with any specific applicable local, regional or Region guidelines or plan for assessing such requests. Where no such guidelines or plan exist, these Guidelines may be used.

3.2.5 The process of assessing requests for places of refuge will in all cases involve consultation between the statutory agency, as outlined above, and any agency which could include a port authority/corporations, and/or other Government agencies with responsibility for areas affected or likely to be affected.

3.2.6 The decision to grant a place of refuge will be made by the nominated official in any applicable Region, local, regional guidelines or plan.

3.2.7 Once a decision on whether to grant or refuse a place of refuge request has been made that decision should be immediately communicated to the person who made the request and GMA if not the lead agency. GMA will inform neighbouring Region agencies of the decision for information.

3.3 Implications of Refusing a Place of Refuge Request

3.3.1 Ghana would appear to be better placed than many maritime nations, in that passing traffic not calling at Ghanaian ports is minimal. .

3.3.2 Consequently, in assessing a place of refuge request, the relevant National or Regional agency needs to be cognizant of the fact that a vessel may have few other options available to it in the likelihood that the place of refuge request is denied.

3.3.3 In refusing a place of refuge request a National or Regional agency should give consideration to alternative arrangements to assist a maritime casualty.

4. Management Issues

4.1 When and How Casualty Coordination is Handed Over Between Jurisdictions

4.1.1 As indicated in Section 2.2, the prime contact point during an incident should be the point to which contact was first made unless the responsibility for coordinating an incident has been formally passed to, and accepted by, another jurisdiction or responsible agency.

4.1.2 During a response to a maritime casualty and/or place of refuge request, there will come a time when coordination of the casualty may need to be passed to another jurisdiction. This may arise as a result of a decision to pass coordination following movement of the casualty and/or the granting of a place of refuge request in another jurisdiction. The decision to pass coordination to

another jurisdiction may also arise due to limitations on staffing, knowledge or skill, pressures from other maritime casualty and/or place of refuge requests, etc.

4.1.3 In order to clarify the transfer and acceptance of coordination between National/Region agencies there is a need for a formal handover process.

4.1.4 Taking coordination of a maritime casualty and/or place of refuge request means that:

- **accountability** for the conduct of the incident rests with the coordinating agency until coordination is transferred to, and accepted by, another agency; and,
- **responsibility** for a particular activity or portion of the incident may be delegated to another competent agency. In this case the responsibility for the proper conduct of that activity or process rests with the agency so delegated. However, the accountability for the incident still remains with the agency that has coordination for the incident.

4.1.5 A suggested *pro forma* for the transfer and acceptance of coordination between National / Regional agencies is at Attachment D.

4.1.6 Once the formal handover is completed, the new coordinating agency assumes responsibility for all aspects of responding to a maritime casualty and/or a place of refuge request including response coordination and planning, resource identification and allocation, preparation and distribution of situation reports, media briefing, etc.

4.2 Powers of Intervention of the National and the Regions in Directing a Casualty to a Place of Refuge

Background

4.2.1 *The powers of intervention were conceived for dealing with a situation where those in control of a polluting or potentially polluting vessel were blatantly not complying with the wishes of the relevant National or Regional agency by, for example, failing to employ competent salvors or by refusing to take a tow or refusing to proceed to a specified place of refuge, or were unable to process with the salvage operations due to unforeseen developments. It was not envisaged that they would be used to intervene in a situation where competent salvors were clearly doing all they could to bring a salvage incident to a successful conclusion.*
(Modified after the UK Maritime Accident Investigation Board Report into the Sea Empress incident as quoted in the Report of Lord Donaldson's Review of Salvage Intervention and Their Command and Control)

4.2.2 International Convention relating to Intervention on the High Seas in cases of Oil Pollution Casualties 1969 (the "Intervention Convention"), as amended by the Protocol of 1973 relating to substances other than oil and, in relation to the territorial sea and internal waters, derive from UNCLOS. The Intervention Convention entered into force internationally in 1975.

4.2.3 It should be noted that the position in internal waters (i.e. ports and harbours) is a matter for national legislation in accordance with Ghana's domestic law.
These powers may differ slightly from relevant national legislations and should be consulted prior to considering such action.

4.2.5 A suggested *pro forma* for the issuing of a directions notice by National / Region agencies is at Attachment E.

Application of the Intervention Convention and Places of Refuge

4.2.6 When an incident occurs and the required intervention powers are contained in national legislation, then that legislation should be used whenever possible.

4.2.7 In an operational context, the relevant National intervention legislation is complementary, and co-operation between GMA and the various agencies will normally achieve the desired outcomes.

4.2.8 In using the relevant National intervention legislation a proactive approach whereby the relevant agency seeks to provide any necessary assistance to assist a Master and/or a salvor to achieve a desired outcome is more likely to be productive rather than using the intervention powers as a measure of last resort after salvage attempts, etc, have failed.

4.2.9 However, should there be disagreement between the National and the relevant Statutory Agency or the Master or the salvor, on the best course of action following a maritime casualty and/or a place of refuge request, the relevant provisions of the national legislation should be followed.

4.3 Liability and Compensation

4.3.1 The provisions of the various liability and compensation conventions developed under the auspices of IMO remain applicable in determining liability for pollution damage under a place of refuge request. The relevant conventions all contain provisions relating to geographical scope of application that would continue to apply if a pollution incident were to occur within a place of refuge.

4.3.2 However, a prudent approach would involve the use of tools such as indemnities and letters of undertaking. Such tools could be used to address costs, liability and compensation associated with the granting of a place of refuge request which could range from deployment of marine pollution response equipment to administrative, environmental, socio-economic and cultural costs as well as operational costs and liabilities incurred within a port if a port is used as a place of refuge. Such tools should be negotiated directly between the relevant National/Regional agency and the vessels' Master, owner or insurer, as appropriate. Indemnities and letters of undertaking may require to be backed by financial bonds or guarantees.

4.3.3 As previously indicated (see Section 1.3.10) a warship seeking a place of refuge is exempt from the normal IMO conventions relating to intervention, liability and compensation. The Ghanaian Navy (GN) is responsible for determining Ghana's response to a maritime casualty and/or a place of refuge request involving either a domestic or foreign warship. Therefore in circumstances where such a vessel requests a place of refuge, the request should be formally made through the Ministry of Defence and/or the Ministry of Foreign Affairs. It would be expected that the GN would liaise closely with National and Regional agencies as well as with port authorities/corporations/and other relevant organizations when port entry is involved and prior to a final decision being made. These Guidelines may then be invoked.

Attachments

Attachment A

Initial Information to be Supplied With a Place of Refuge Request

- A vessel requesting a place of refuge should supply the following information to assist in the decision making process:
- Name and Flag of the vessel
- Ship's identification number (IMO number)
- Type of vessel and cargo classification, (access automated manifest systems such as "Sea Cargo")
- Size (tonnage), length, beam and draft of vessel
- Name and address of the local or Ghanaian agent
- Name(s) of the registered owner(s), the registered bareboat charter(s) and their registered address(es)
- Name of registered Company, its registered address and the address(es) from where it carries out the safety management activities
- Name(s) and contact details of the "Designated Person" nominated on the vessel's ISM Document of Compliance
- Identification details of ship's insurers
- Name(s) and contact details of the local P&I Club representative
- Position of vessel (and how determined, GPS, dead reckoning, best guess)
- Course and speed (steaming, adrift or at anchor)
- Weather and sea conditions
- Type and quantity of bunker fuel on board
- Nature and quantity of hazardous or harmful substances carried
- Cause of damage and the nature and extent of damage
- Details of any casualties on board or in the vicinity of the ship
- Nature of immediate assistance required
- Actual pollution or potential for pollution
- Response actions taken by a vessel (for e.g. whether salvors have been contacted or engaged)
- Details of place of refuge request (area, coordinates, etc)
- Person on ship making request
- Preferred language for communications
- Details of all vessels' satellite communication numbers (for e.g. INMARSAT C / Satphone / mobile / fax, etc, numbers)
- Date and time of request.

Attachment B

Issues to Be Considered in Continuing to Respond to a Maritime Casualty at Sea

Maritime agencies should initially address the option of continuing to respond to a marine casualty at sea. In these situations, the following matters should be considered:

- Seaworthiness of the vessel, in particular buoyancy, stability, availability of means of propulsion and power generation, also is anchoring possible
- Current and tidal conditions at sea
- Prevailing and forecast weather conditions for the time the vessel is expected to remain at sea
- Adequate persons (in number and qualifications) on board to fulfill all functions on board and an assessment of human factors including fatigue. If not, can these personnel be supplied from shore and be placed on board
- Is a salvor at the scene and has a commercial salvage contract been concluded between the relevant parties
- Can the vessel be accessed by helicopter
- Traffic density in the incident area
- Adequate sea room and depth of water available to allow ship to drift
- Availability of sufficient tugs and support vessels and where are they stationed
- Additional safety measures to be taken to ensure the ship can safely remain at sea
- How will all imposed prevention and pre-cautionary measures such as navigation instructions, bridge complement, manning of engine room, number of tugs, etc, be complied with (eg representatives, inspectors or salvors on board)
- Availability of fire fighting, oil and chemical pollution combating equipment and sufficient qualified personnel
- Option to restrict or prohibit access of ships/craft and personnel and to enforce it, if circumstances so require (establishment of sea safety zones)
- Requirement for restrictions regarding the use of the sea area in the vicinity of the vessel and the use of air space above or in the vicinity of the vessel – have these been imposed by the competent authorities and how are they enforced
- Possibility of lightering at sea and availability of appropriate equipment (barges, cranes, cargo gear, etc) and personnel
- Sustainability/availability of an anchorage or berth in a port and any potential environmental or other effects
- Which financial indemnities/bonds have been or have to be requested to cover personal injuries and other damages such as damages to the environment, port channels and installations, costs for combating the incident, costs for entering a port (pilot, tugs, crew, etc), port dues, delays to other vessels/cargoes in the port, leased berth usage, cargo handling, repairs, disposal of any types of wastes, wreck removal, etc. Also is there a need for financial bonds, etc, to cover costs associated with environmental / socio-economic / cultural assessments and
- How and up to which amount have these been secured (e.g. bonds, bank guarantee, letter of indemnity, etc).

Attachment C

Selecting a Place of Refuge

Operational Criteria

The following operational criteria must be considered in selecting a place of refuge:

- What is the state of the vessel – does it urgently require access to the nearest place of refuge or can the vessel endure a longer passage to a place of refuge with either better facilities and resources or one which is of lesser environmental, socio-economic and cultural sensitivity
- What are the risks posed by the vessel in distress to the population, environment and installations, particularly those requiring special protection, at the intended place of refuge and in the vicinity, taking into consideration the "worst case" scenario and the likelihood of it actually occurring, if it is shifted to the intended place of refuge
- In case of dangerous goods on board – the type of goods on board and what affects may result from one of the incidents mentioned above
- Overall risk posed to coastal waters, marine species, coastline or proposed place of refuge
- Estimated distance and transit time to place of refuge
- Adequate sea room and depth of water with relatively unobstructed approach from seaward
- Presence of good holding ground for both immediate anchoring during approach and at place of refuge
- Availability and positioning of suitable tugs or other support vessels during approach
- Availability of helicopters or fixed wing aircraft for rescue or surveillance and/or pollution response function
- Provision of marine pilot during approach
- Prevailing weather conditions during approach
- Shelter from prevailing and forecast weather and swell at place of refuge and forecast weather conditions for the time vessel is expected to remain at place of refuge
- Access to place of refuge by land, sea and air transport modes
- If it is desirable or necessary to bring the vessel into a port, availability of suitable anchorage or berth, risks of entry into port such as potential channel blockage, environmental effects (spills etc,) effect on ongoing port operations such as delays to other vessel movements, berth/facility lease arrangements and consequential cargo impacts of berth use especially if cargo is to be discharged.
- Availability of fire fighting, oil and chemical pollution response equipment and operating personnel
- Availability of reception facilities for harmful and dangerous cargoes
- Compliance with instructed preventative measures (navigational directions, marine surveyor/ salvor aboard to ensure compliance with preventative instructions, tugs in attendance as directed, compulsory pilotage)
- Any requirement under Administration legislation or for commercial/operational reasons to post an adequate bond to cover any risk (pollution, grounding, damage to port facilities, business disruption, etc)
- Restricting or prohibiting unauthorised vessels/vehicles and personnel as required during operation

- Through Ghana Air Force, restriction on use of air space over and in the vicinity of the vessel at the place of refuge, if required
- As required, notification of relevant agencies such as Immigration and Customs
- When practical, and particularly where serious impact to coastal resources may occur, consultation with the community should be undertaken as soon as possible
- Agreement by the Master and/or the owner of the ship to the proposal
- Environmental, Cultural and Socio-economic Criteria
- The requirements listed under must be considered in conjunction with the operational criteria:
- Assessment of environmental risk to ecological, cultural and socio-economic resources, both along the approach to, and at the proposed place of refuge. This may include inter alia assessment of ecological and socio-economic resources include coastline, significant species, sensitive habitats, fisheries, commercial activity and amenities and assessment of risk to culturally significant resources including sites, species, etc
- Analysis of "worst case" scenario, the likelihood of the scenario occurring and the effects on environmental, cultural and socio-economic resources
- Liaison with environmental and cultural groups within the community and
- Concurrence or approvals of statutory agencies.

Attachment D

Pro Forma for Transfer and Acceptance of Coordination for a Maritime Casualty or Place of Refuge Request Between National / Regional Agencies

It is hereby agreed that the [NAME OF NATIONAL AGENCY] transferred coordination for the:

(a) maritime casualty [VESSEL NAME][1]

(b) place of refuge request from the [VESSEL NAME] [1]

to the [NAME OF NATIONAL AGENCY] which accepted coordination on [SPECIFY DATE AND TIME].

Name: Position: [NAME OF NATIONAL AGENCY TRANSFERRING COORDINATION]	Name: Position: [NAME OF NATIONAL AGENCY ACCEPTING COORDINATION]

1 - Strike out which ever is not applicable

Signed by:

Attachment E

Pro Forma for a Directions Notice Issued Under Relevant National Intervention Legislation

NOTICE UNDER THE [Name of Relevant National Intervention Legislation] Act [Year]

[To be printed on relevant National Maritime agency letterhead]

I, **[Insert full name of delegate authorised to issue notice]**, Delegate of the **[Name of relevant National maritime agency]**, pursuant to the provisions of Section **[Insert relevant section number]** of the **[Name of Relevant National Intervention Legislation]** Act **[Year]** hereby require the owners **[Insert full name of owner(s)]**; the Master, **[Name of Master]** of the **[Insert flag state]** flag vessel known as the **[Insert name of vessel]** (the vessel) having Radio Call Sign **[Insert call sign]**, (and if circumstances warrant, the Salvors, **[Insert name of salvor]**) jointly and severally to comply with the following instructions irrespective of signing a Lloyds Open Form or other similar agreement:

[List instructions]:

For example:
1 The **[Insert name of vessel]** be towed from **[Insert name of area or region or location]** to a safe anchorage off **[Insert name of area or region or location]**; or,
2 Prior to departing from the **[Insert name of area or region or location]** anchorage and continuing its voyage the vessel's owner/master shall supply **[Insert name of relevant National Maritime agency]** with a written report from the **[Insert name of Classification Society]** verifying that the vessel's **[Insert nature of problem or incident]** meets the requirements of **[Insert name of Classification Society]** rules.

I further require that you acknowledge this notice and advise me upon receipt of this notice via the **[Insert name of Coastal Radio or Coordination Centre]** facsimile number: **[Insert fax number]** by **[Insert time response required]** of the action you have taken or propose to take to comply with this notice.

Dated this **[Day]** of **[Month] [Year]**

[Signature]

[Name of person authorised to issue Notice]

APPENDIX 6

APPEARANCE OF OIL ON WATER

APPEARANCE OF OIL ON WATER Relation between appearance, thickness and volume

	Oil type	Appearance	Approx thickness(mm)	Approx volume(m^3/km^2)
1 2 3 4	Oil sheen Oil sheen Crude/fuel oil Water-in-oil emulsions ("mousse")	silvery iridescent (colours) black/dark brown Brown/orange	>0.0001 >0.0003 >0.1 >1.0	0.1 0.3 100 1000

Reference: *International Tanker Owners Pollution Federation Limited* Technical Information Paper

Figure 1

Figure 2

Figure 3

Figure 4

APPENDIX 7

HARMFUL SUBSTANCES REPORT FORMAT

HARMFUL SUBSTANCES REPORT FORMAT

(Sections of the ship-reporting format, which are inappropriate, should be omitted from the report)

This report is for use when reporting discharge or potential discharge of oil or noxious liquid substance carried in bulk.

A Ship name, call sign/ship station identity and flag

B Date and time of event (Note: time must be expressed as Universal Coordinated time)

C Position: latitude and longitude; or

D Position: true bearing and distance

E True course

F Speed in knots and tenths of knots

L Route information/intended track

M Radio communications: full names of stations (including INMARSAT)

N Time of next report(Note: Time must be expressed as Universal Coordinated time)

P** 1. Type of oil or the correct technical name of the noxious liquid substances on board

2. UN number or numbers

3. Pollution category (A,B,C or D) for each noxious liquid substance**(Note: In the case of a probable discharge, item P should be included)

Q 1. Condition of ship, as relevant

2. Ability to transfer cargo/ballast/fuel

R 1. Type of oil or the correct technical name of the noxious liquid substance discharged into the sea

Estimate of the movement of the discharge or lost substances giving current conditions, if known

1 UN number or numbers
2 Pollution category (A,B,C, or D) for each noxious liquid substance
3 Names of manufacturers of substances or consignee or consignor
4 An estimate of the quantity of each substance
5 Whether lost substances floated or sank
6 Whether loss is continuing
7 Cause of loss

10. Estimate of the surface area of the spill S Weather conditions (give brief details of weather and sea conditions prevailing) T Name, address, telex and telephone numbers of the ship's owner and representative U Ship size and type

X 1. Action being taken with regard to the discharge and to the movement of the ship

1 Assistance or salvage efforts which have been requested or to which have been provided by others
2 The master of an assisting or salvaging ship should report the particulars of the action undertaken or planned

APPENDIX 8

SAMPLING PROCEDURES

SAMPLING PROCEDURES

Samples of oil/oily mixtures from the marine environment (water and foreshore areas) and all potential sources should be taken with the minimum of delay so that changes in the oil composition due to weathering are kept to a minimum. All samples should be kept in a cool, dark, secure location (i.e. within an insulated container, an ice chest or a refrigerator if available). Marine environment - Every effort should be made to obtain representative samples of the pollutant from the water and foreshore areas or other polluted areas (including oiled wildlife). A number of samples should be taken from various locations within the spill. Note that any drains or outfalls in the area should be eliminated as a potential source of the spill. These samples should be contained in clean glass jars (preferably sterilized glass jars if available) and information about where the samples were taken should be recorded. This information should be provided to the laboratory to assist with the analysis of the samples. Blanks or clean water samples should also be taken upstream/outside the spill area and provided to the laboratory. Ships – Sampling ships should only be undertaken with the assistance of an authorized officer with relevant shipping expertise. Samples from all potential ships that could have been responsible for the spill must be obtained. It is important to be able to eliminate ships as well as identifying the source of the spill. Samples should be taken from all waste oil tanks, bilge and bilge holding tanks, fuel oil tanks and the discharge from the oily water separator for comparison purposes, particularly if prosecution is envisaged. Information on how the sample was obtained should also be recorded and provided to the laboratory (eg from drain tap, valve, dipping into tank etc). Samples should be contained within sterilized or clean glass jars.

Continuity of Samples

To be admissible as evidence, samples taken must be proved conclusively to be in an appropriate person's possession until delivery to the laboratory. This requires that rigid controls be instituted and maintained to establish continuity for the samples from the time of initial sampling.

Delivery of Samples

Where samples are collected for the purpose of prosecution appropriate safeguards need to be ensured during their transport. EPA will identify Failsafe Couriers that can provide transport of samples from the person responsible for its collection and/or custody to the designated analyst, incorporating rigid controls and security.

Analysis of Samples

EPA has arrangements in place whereby analysts will carry out testing of all samples for the purposes of prosecutions.

Further Details

Further details concerning sampling procedures and appointed analysts are available from EPA. The International Maritime Organization publication "IMO Guidelines for Sampling and Identification of Oil Spills" 1998 provides more detailed information on this subject.

APPENDIX 9

POLLUTION SITUATION REPORT (SITREP) FORMAT

MARINE POLLUTION SITUATION REPORT (SITREP)

This is advice from the Combat Agency of the current status of the incident and the response. This form is transmitted to all relevant agencies including:

- *Statutory Agency*
- *Head of Oil Spill Response, EPA*

			Ref. No.
Priority	**Urgent**	**Immediate**	**Standard**
Final SITREP?	**Yes**	**No**	**Next SITREP on:**
Date/Time			
POLREP Reference			
Incident	**Name**		
	Latitude		**Longitude**
Brief Description of Incident and Impact			
Overall Weather conditions			
Summary of Response Actions to Date			
Current Strategies			

CONTINUES ON PAGE 2

SITREP PAGE 2

Summary of Resources Available/Deployed			
Expected Developments			
Other Information			
SITREP Prepared By	**Name**		
	Agency		
	Role		
	Contact	**Telephone**	
		Fax	
		Mobile	
Attachments?	**No of Pages Attached:**		

APPENDIX 10

POLLUTION REPORT (POLREP) FORMAT

Pollution Report (POLREP)

NOTE: Incidents to be reported are outlined on page 3

Incident No.

Date of Incident

/ /

Send completed form to: Environmental Protection Agency
Fax: (021) 662690 Email: support@epaghana.org

CC:

Time of Incident

: AM PM

Location name/ description	
Incident coordinates	

Description of Incident	

POLUUTION SOURCE

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