



**United Nations  
Environment  
Programme**



UNEP(DEPI)/MED WG.384/INF.8  
10 June 2013

Original: ENGLISH

---

---



**MEDITERRANEAN ACTION PLAN**

1st Offshore Protocol Working Group Meeting

Valletta, Malta, 13-14 June 2013

**GUIDELINES TO THE PROTOCOL CONCERNING MARINE POLLUTION  
AND EXPLOITATION OF THE CONTINENTAL SHELF – REGIONAL ORGANIZATION  
FOR THE PROTECTION OF THE MARINE ENVIRONMENT (ROPME), KUWAIT**

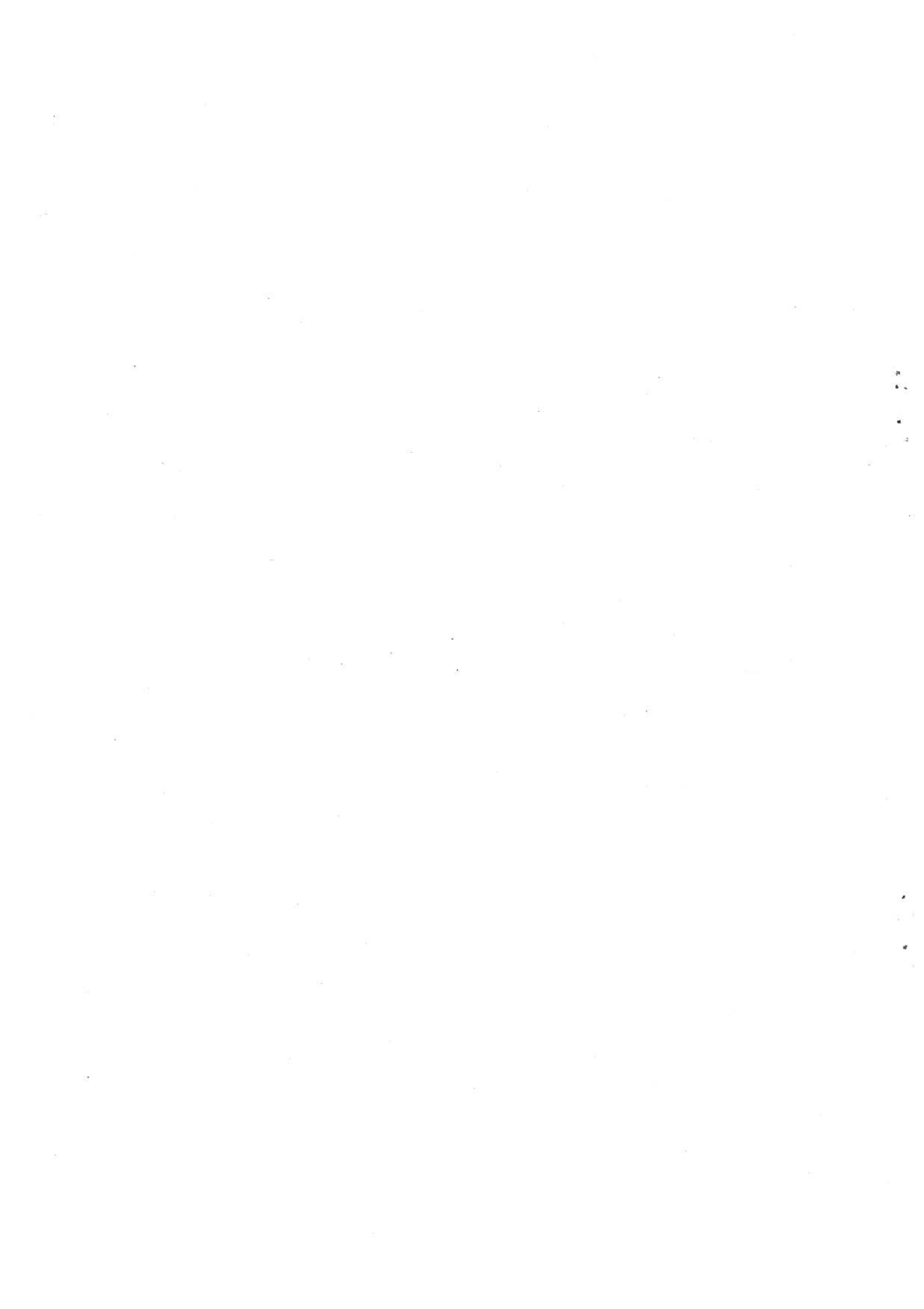




REGIONAL ORGANIZATION  
FOR THE PROTECTION OF  
THE MARINE ENVIRONMENT  
KUWAIT

---

GUIDELINES TO THE PROTOCOL  
CONCERNING MARINE POLLUTION  
RESULTING FROM EXPLORATION  
AND EXPLOITATION OF THE  
CONTINENTAL SHELF



## TABLE OF CONTENTS

	<u>Page Nos.</u>
Guidelines on requirements for the conduct of environmental impact surveys and assessments and the production of environmental impact statements	1 - 29
Guidelines on the use and storage of chemicals in offshore operations	30 - 50
Guidelines on the conduct of seismic operations	51 - 57
Guidelines on the voluntary regulation of the disposal of drill cuttings on the sea bed	58 - 62



**GUIDELINES ON REQUIREMENTS FOR  
THE CONDUCT OF ENVIRONMENTAL  
IMPACT SURVEYS AND ASSESSMENTS  
AND THE PRODUCTION OF  
ENVIRONMENTAL IMPACT STATEMENTS**





GUIDELINES ON REQUIREMENTS FOR THE CONDUCT OF ENVIRONMENTAL  
IMPACT SURVEYS AND ASSESSMENTS AND THE PRODUCTION OF  
ENVIRONMENTAL IMPACT STATEMENTS

INTRODUCTORY NOTE

1. The Protocol concerning Marine Pollution resulting from Exploration and Exploitation of the Continental Shelf provides in Article III that:

"Each Contracting State shall ensure that in the Protocol Area under its jurisdiction any offshore operation shall be conducted under a licence, which may be granted subject to such conditions for the protection of the marine environment and coastal areas as the Competent State Authority sees fit to impose. The Competent State Authority shall require the operator to comply with relevant laws and regulations issued under the authority of the State, and shall have the power to take such measures as are necessary to enforce compliance therewith."

Furthermore, Article IV 1(a) of the Protocol provides that:

"Each Contracting State shall take measures to ensure the following:

- (a) Before licensing any offshore operation which could cause significant risks of pollution in the Protocol Area or any adjacent coastal area, the Competent State Authority shall call for submission of an assessment of the potential environmental effects thereof. No such operation shall commence until a statement of those effects has been submitted, and no licence shall be granted until the Competent State Authority is satisfied that the operation will entail no unacceptable risk of such damage in the Protocol Area or any adjacent coastal area."

The Competent State Authority of the Contracting State is to have regard to Article IV, 1 (b), in deciding to call for an environmental impact statement and in determining its scope.

## 2. Definitions

The following is a list of definitions of words used in the text.

"Environmental Impact Assessment Office" means the office, department or technical unit which oversees the Environmental Impact Assessment (EIA) process. It may be an independent office or may be subordinate to, or subject to directives given by the Competent State Authority.

"Protocol" means Protocol concerning Marine Pollution resulting from Exploration and Exploitation of the Continental Shelf, signed in Kuwait on 29 March, 1989.

"Significant" means in relation to an adverse effect of such severity that the Competent State Authority would consider it reasonable for the Person threatened to take action to prevent it.

"Environmental Impact Assessment" is a decision making-tool involving:

- Assessment of the effects of a proposed action on the environment;
- Comparing various alternatives by which a desired objective may be realized and seeking to identify the one which represents the best combination of economic and environmental costs and benefits;
- Prediction of changes in environmental quality which would result from the proposed action;
- Weighing out the environmental effects on a common basis with economic costs and benefits.

"Person" means any natural person, corporation, association, partnership, trustee, guardian, executor, administrator and a judiciary or representative of any kind.

## PART A : FUNCTIONS OF THE AUTHORITIES

### 1. Competent State Authority:

The functions of that Authority relating to environmental impact assessment should include the following:

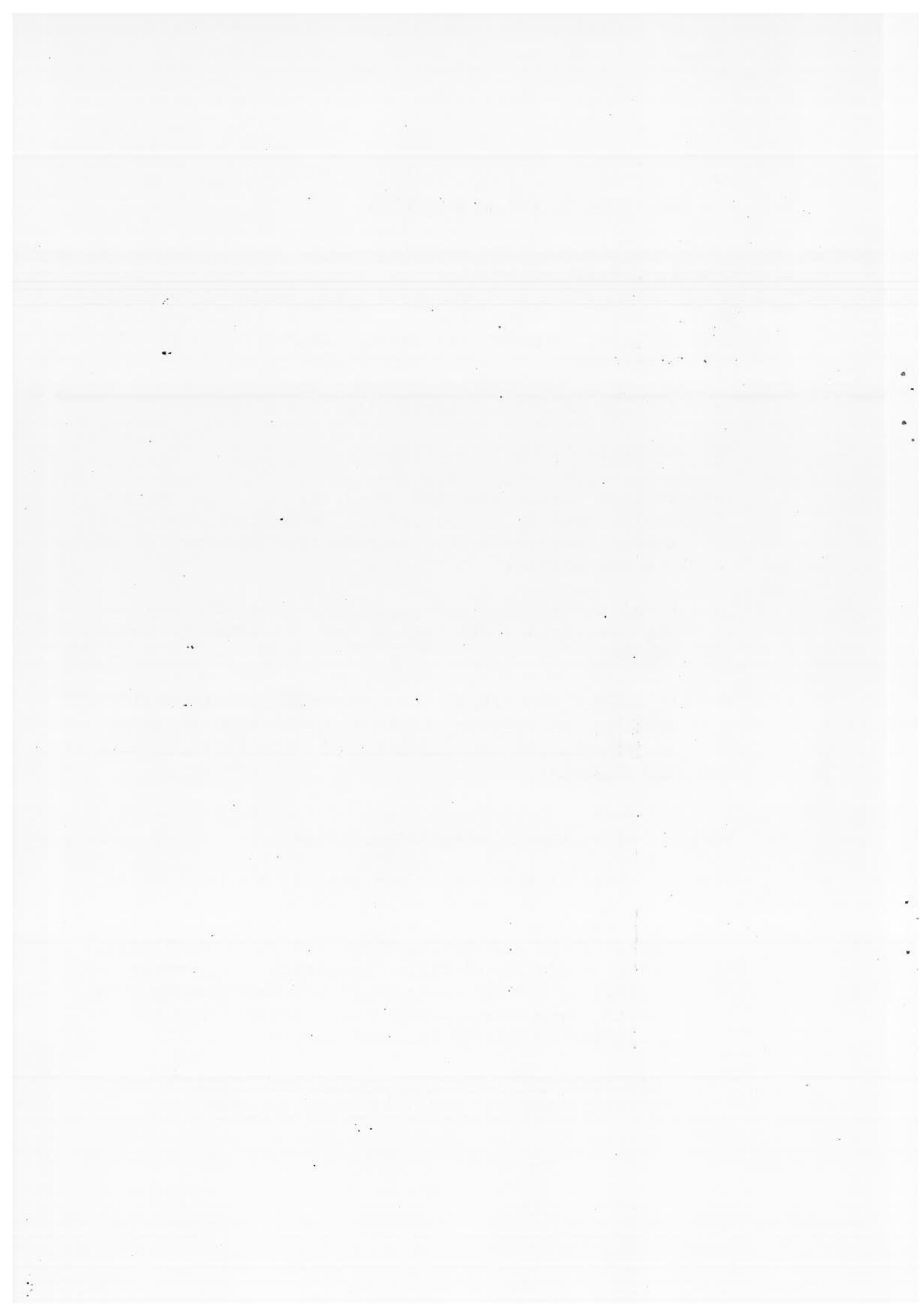
- (a) Receipt of initial application for a licence.
- (b) Referral to the EIA Office.
- (c) Calling for an independent survey of the marine environment to be carried out and an environmental impact statement to be submitted as required by the EIA Office.
- (d) Final decision on the grant of a licence, and on any conditions to which the licence is to be subject.
- (e) Prepare a summary of the potential environmental effects, as referred to in an environmental impact statement, in accordance with Article IV 1(c) of the Protocol.

### 2. Environmental Impact Assessment Office

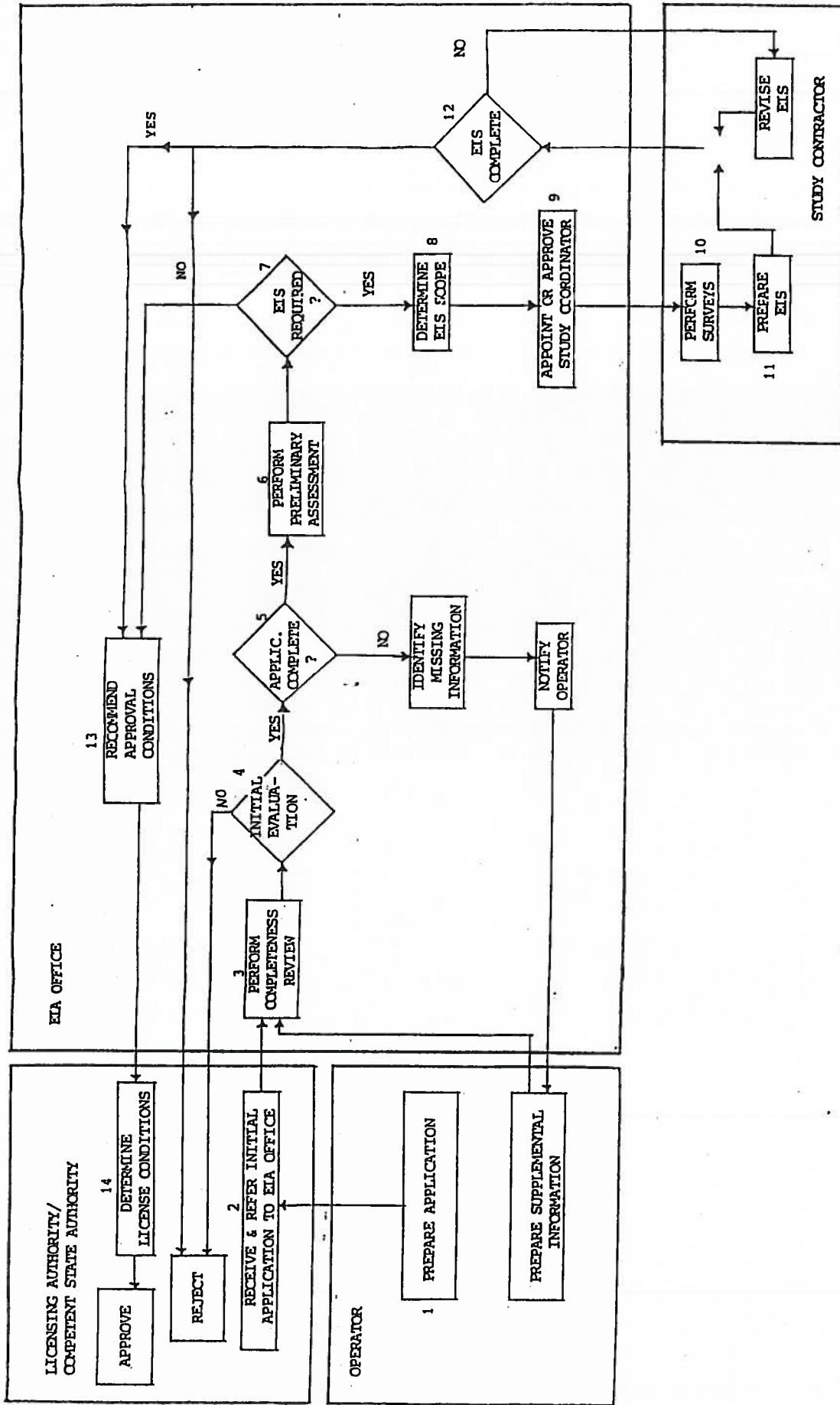
The functions of the EIA Office should be as follows:

- (a) To ensure that the application for a licence referred to it by the Competent State Authority, contains all the details necessary to determine whether or not an assessment will be required. To obtain from the applicant any further information which may be needed for that purpose.

(See Flow Chart for licensing and Environmental Impact Assessment (EIA) Process, on next page).



# FLOW CHART FOR LICENSING AND EIA PROCESS





- (b) To review or carry out any preliminary assessment necessary to determine whether or not an environmental impact assessment must be made and an Environmental Impact Statement (EIS) submitted, and to make that determination or to make a recommendation thereon to the Licensing Authority.
- (c) To recommend calling a survey of the Marine Environment and the aquatic life therein whereon it does not call for an environmental impact assessment.
- (d) To determine the scope of any assessment that must be made, on the basis of the initial application or the preliminary assessment.
- (e) To recommend or approve the appointment of the person or persons to carry out the assessment or survey and agree to the terms of reference. The EIA office may also publish a list of approved bodies/contractors capable of carrying out the assessments.
- (f) To examine the draft EIS, and to require any further work to be done as necessary.
- (g) To approve the Environmental Impact Statement when complete and satisfactory.
- (h) To send to the Competent State Authority the EIS referred to it together with its recommendations concerning approval, refusing or conditions.

Note : The Competent State Authority is to ensure that applicants are informed as soon as possible about environmentally sensitive areas.

PART B : PROCEDURE

1. The Application

1.1 The following information is required in the initial application:

- (a) Name of operator or proposed operator; and name, address and telephone number of person to contact.
- (b) Type of operation proposed, with full details.
- (c) Date proposed for commencement of operations.
- (d) Estimate of period of operations.
- (e) Types and number of equipment proposed for preventing and controlling pollution during construction and operations.
- (f) Description of the measures envisaged to prevent and reduce and where possible offset any significant adverse effects on the environment.

1.2 The EIA Office should require any additional information as it may need for its preliminary assessment.

1.3 No application need be submitted for any of the following:

- (a) Offshore operations for which sanction had been given and contracts entered into force before the Protocol became binding upon the Contracting State.
- (b) Offshore operations for which a licence has already been granted.



2. Decision on whether or not to Require an Environmental Impact Assessment

The decision on whether or not to require an environmental impact assessment to be made, and a statement thereon to be submitted, should lie with the EIA Office. For that purpose, the offshore operations are divided as follows:

Class I

Operations for which an EIA and EIS will normally be required at the discretion of the EIA Office. None of them, however, will require a survey and assessment if it falls within the scope of an existing licence. Such operations include but are not limited to:

- (a) Construction of a permanently manned offshore structure;
- (b) Development of an offshore producing oil field;
- (c) Installation of major offshore pipelines;
- (d) Construction of large production platforms;
- (e) Construction of any offshore oils storage facility;
- (f) Construction of any tanker loading facility;
- (g) Any significant dredging project; and
- (h) Exploratory drilling in new areas.

Class II

Operations for which an environmental impact assessment and survey will not normally be required:

- (a) All work of maintenance and repair whether or not it falls within the scope of an existing licence such as, corrosion protection of pipelines, except

where new substances are to be used, or new types of sacrificial anodes are to be fitted, desludging of gas and oil separating plant and well work-overs.

- (b) Any other operation which does not involve a discharge of waste into the marine environment, or a risk of such discharge.

As an aide to the EIA Office in determining whether or not to require an EIA, the criteria described in Part C has been developed.

### 3. Preliminary Environmental Impact Assessment

3.1 Preliminary environmental impact assessments will need to be made for two purposes:

- (a) To decide whether or not to require an impact assessment and statement, taking into account the presumptions for Class I and Class II operations.
- (b) To determine the scope of any marine survey and environmental impact assessment which must be carried out.

3.2 The preliminary assessment will normally involve the following:

- (a) Examination of known data on existing environmental conditions in areas which could be affected.

Examination of the known hydrological, oceanographic and meteorological conditions, as relevant, of those areas.

Examination of the known ecology of those areas.

- (b) Examination of the literature and records on the potential environmental impact of that type of operation.

- (c) Any further field work which may be necessary for a properly informed decision.

Such further field work may have to be done before a decision can be reached with any confidence. It may be done by the staff of the EIA Office, other persons or institutions under contract with the Office. In any event, the cost of conducting the preliminary assessment may be charged to the applicant.

- (d) Consultation with the operator on measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the marine environment.

3.3 The factors to be taken into account in reaching a decision whether or not to require an impact assessment and statement could be as follows:

- (a) Whether or not the operation, with all its cumulative effects from commencement to completion, and the rate of environmental recovery after completion, will cause any significant pollution of the marine environment or adjacent coastal areas, or will cause any significant interference with lawful fishing or other lawful uses of the sea.

Full weight should be given to any permanent or long term effects which could be suffered by established commercial interests, or local traditional activities.

- (b) The probable mitigating effects of any environmental control practices offered by the applicant or available to him.
- (c) The availability of alternative sites or alternative methods of operation.

3.4 The procedure to be followed, and the criteria to be applied, are set out on Part C, section 1 below. There is further guidance on assessing the effects on plants and animals in Annex 2.

#### 4. Terms of Reference for the Assessment

4.1 If the EIA Office recommends that an assessment will be required, it will need to draft the terms of reference. The principal purpose of doing so will be to determine the scope of the survey and assessment.

4.2 Those terms will always require the consideration of the following: except that where any item is unnecessary considering the objectives of the survey as set out in (k) below, it may be struck out by the Office.

(a) Name of the Operator.

(b) Specification of the project. This will include:

- i) a description of the work to be done, and the procedure by which it will be done;
- ii) types of plant and equipment to be used, with sizes and capacities where relevant;
- iii) substances to be discharged, or which may be released into the marine environment;
- iv) any alternative kinds of procedures, plant, equipment or substances which may be used;
- v) kinds of pre-discharge treatment to be used, and a description of any other anti-pollution procedures and equipment;
- vi) any blasting, trenching or drilling which may be necessary;
- vii) duration of the project.

(c) Geographical boundaries of the area in which operations are to be conducted. Locations of any plant or equipment which will be in continuous or regular use. Alternative locations.

(d) Facilities for product storage.

- (e) Proposals for the transport of the product to shore, including any alternative arrangements.
- (f) Frequencies and routes of any regular vessel movements.
- (g) Need for any routine inspection and maintenance, and any foreseeable work of repair or replacement, which could have an effect on the marine environment or cause interference with lawful fishing, navigation, or any other lawful use of the sea.
- (h) Types of training given to the persons working on the proposed operations.
- (i) Any planned or foreseeable extension of the project work, e.g. drilling of satellite wells, provision of offshore storage or loading facilities.
- (j) Plans for removal of any plant or equipment, and any reclamation, restoration or clearing of the site after cessation of operations.
- (k) Objectives of the survey.

4.3 The terms may then require that the survey covers, as appropriate, any or all of the following (Further guidance on (a) and (g) is given in Annex 2 to this guidelines):

- (a) Description of the existing ecological state of the area which might be affected by the project. The description required may be limited to specified orders, families or species of fauna or flora, or to specified kinds of habitat.
- (b) Assessment of the foreseeable direct and indirect short-term and long-term effects that the operations might have on:
  - i) the fauna and flora of the area, or any specified range of fauna or flora;

- ii) habitats, or any particular type of habitat, in the area;
  - iii) the ecological balance of the area.
- (c) Assessment of any effects on water quality, taking into account the uses to which the water might be put, e.g. desalination.
  - (d) Particular attention may be directed to any rare or endangered species, to any organisms on which others are dependent, e.g. plankton, or to any spawning or breeding grounds.
  - (e) Effects on any particular environmental features which may merit attention, e.g. effects of sedimentation.
  - (f) Assessment of any effects the operations might have on other legitimate uses of the sea, effects on commercial fisheries, need for the rerouting of maritime traffic, increased hazards to navigation.
  - (g) Assessment of any other socio-economic effects the changes noted might have, e.g. on marine sporting activities or tourist attractions.
  - (h) Description of proposed methods to eliminate or reduce any of the adverse effects noted above. Description of alternative methods of operating which might be used.
  - (i) Contingency measures which may have to be taken in an emergency.

4.4 The terms may also require any or all of the following:

- (a) Obligation to consider alternatives:
  - i) alternative locations for plant or equipment. The criteria for assessing the impact proposed activities on the marine flora and fauna is presented in Annex 2;
  - ii) alternative substances which may be used, e.g. alternative chemicals or drilling fluids;

- iii) alternative production procedures;
- iv) alternative methods of transport of the product to shore;
- v) alternative kinds of plant or equipment which might be used;
- vi) alternative means of environmental protection.

The alternatives may or may not be specified by the EIA Office.

- (b) Description of any new techniques which might significantly affect the marine environment or uses of the sea.
  - (c) Consultation with particular persons or organizations specified by the EIA Office.
- 4.5 The terms of reference will thus delineate the scope of the survey to be conducted, and the assessments to be made. This part of the Guidelines, however, simply indicates the matters which may be included in the survey and subsequent statement.

## 5. Environmental Impact Statement

- 5.1 The statement should be in a language which can be understood by a non-scientist.
- 5.2 The statement should be as short as reasonably possible, consistent with complete coverage of all matters referred to in the terms of reference. Other documents may be incorporated by reference.

Where there is relevant information which cannot be obtained without unreasonable expense and effort, this should be noted.

- 5.3 Each statement should contain an accurate summary of the findings. The summary should not normally be more than 12 pages long.

The summary should include the following:

- (a) Name of applicant.
- (b) Brief specification of the project, with reference to all parts of the operation capable of generating pollution, and the polluting substances involved.
- (c) Boundaries of the area in which the operations are to be conducted, and any alternative site considered.
- (d) Brief description of the ecology of the area which might be affected, with references to any sensitive areas, and any rare or endangered species of plant or animal.
- (e) Assessments of any potential adverse effects on the environment, and any potential commercial and socio-economic effects, whether direct or indirect. This should be a major part of the summary.
- (f) Measures proposed to limit adverse effects.
- (g) Any alternatives considered under 4.4 above.
- (h) Place and times at which the full statement can be seen.

5.4 Attention is drawn to Article IV 1 (c) of the Protocol.

6. Persons or Body Chosen to Carry Out the Environmental Impact Assessment and to Write the Statement

- 6.1 The persons or body chosen to carry out the survey and write the statement should be approved by the EIA Office.

The EIA Office may prepare a list of qualified persons and bodies for conducting the survey and writing the statement for selection.

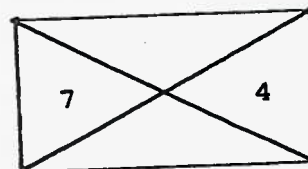
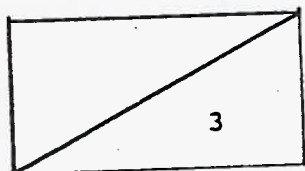


## PART C : CRITERIA

1. Criteria on whether or not to require an Environmental Impact Assessment
  - 1.1 The first step to be taken by the Competent State Authority in the procedure set out in Part B, is a recommendation by the EIA Office on whether or not to require the submission of an environmental impact statement. In making that recommendation, it is of first importance for the Office to take into account every possibility of significant adverse environmental impact. As an aid, a chart which can be used in that process is set out in Annex 1.
  - 1.2 The chart shows in the left hand vertical column the components of any project for which a licence may be sought, and along the top row the possible direct and indirect effects which may have to be taken into account. The lists are not necessarily exhaustive, and new items may be added in the light of new applications and further experience in environmental and consequential effects.
  - 1.3 Before using the chart, the EIA office is advised to check the licence application to ensure that it covers:
    - (a) all parts of the project, including ancillary and associated developments, and work to be done in establishing the project, e.g. transport services, or disturbance of the sea-bed, or pre-commissioning work on a pipeline.
    - (b) foreseeable future extensions of the project, and associated developments.

All those matters should be taken into account in the initial assessment, otherwise there may be piecemeal approvals for developments with cumulative effects, which would not have been approved if presented as a whole.

1.4 All operations listed in the vertical column which fall within the scope of the application should first be underlined or otherwise indicated. Each should then be checked against the effects listed at the top of the chart, and the possibility of an adverse effect indicated by a diagonal line from top right to bottom left of the rectangle made by the intersection of the appropriate row and column. (A diagonal line from top left to bottom right may be used at a later stage for beneficial effects). Within the rectangle may be placed a number as a reference to a footnote on the potential effects, e.g.



1.5 On the basis of the information thus indicated, a decision is to be made. The decision should be to call for an environmental impact assessment if the completed chart shows that there is A CHANCE, REAL AS DISTINCT FROM THEORETICAL, THAT THE POSSIBLE CONSEQUENCES of carrying out the project would include any of the following:

- (a) Significant adverse effect on any established:
  - i) commercial interest;
  - ii) scientific interest;
  - iii) recreational activity;
  - iv) social or cultural activity.
- (b) Extinction or significant impairment of any species of plant or animal.
- (c) Significant effect on any submarine area designated and maintained by a public authority as a marine park or otherwise protected area.
- (d) Significant geophysical or ecological effect on any area of the sea-bed or coastal terrain.

- (e) Significant adverse effect on any amenity.
- (f) Significant adverse effect on public health.
- (g) Significant increase in the cost of maintaining any existing public service, or the creation of a need for a new public service.
- (h) Significant, but only temporary, development of any coastal area, ("boom - bust" effect).
- (i) Any other adverse effect of such significance that the EIA Office considers that a call for an environmental impact assessment is justified.
- (j) Benefits expected to the local environment from the operation.

1.6 When all entries are made on the chart, it will contain more information than will be needed for the decision whether or not to call for an impact assessment.

- (a) However, the EIA Office should take into consideration that an adverse effect on an area such as a fish breeding ground may affect fish stocks elsewhere.
- (b) There may be additional information, particularly in footnotes to the chart, which are not needed for making the decision, but which may be useful in preparing the terms of reference for any assessment required (See 2).

1.7 In deciding whether or not there is likely to be a significant adverse effect on marine organisms, particular attention should be given to the effect from the following substances and classes of substances:

- Biocides
- Oxygen scavengers
- Corrosion inhibitors
- Discharges of suspended solids.
- Demulsifiers
- Dispersants

2. Criteria for Terms of Reference for an Environmental Impact Assessment

- 2.1 The items which should, and may be, included in the terms of reference are listed in B 4.2 and 4.3 above. If the recommendation of the EIA Office is to require an impact assessment, what must be included in that assessment should be determined in accordance with the preliminary findings indicated on the completed chart.
- 2.2 In assessing the probable effects of the project, the criteria set out in Annex II should be applied by the assessor, except where he can show that particular circumstances justify the use of different criteria.
- 2.3 The criteria shown in Annex II for assessing the effects on plants and animals are not necessarily complete. It must be noted that toxicity can be expressed only in relation to particular species, and may even be different for sub-species found in other waters, or for the same animals in different circumstances, e.g. colder waters.

As experience and knowledge progresses on the use of chemicals in offshore operations, more data will become available. Annex 2 can therefore be updated intermittently in conjunction with the Guidelines on the Use of Chemicals in Offshore Operations, which are also issued by the Organization.

The same applies in principle to other criteria. As experience and knowledge increases, Annex 2 will be revised. It will therefore be necessary to ensure that the most recent edition of it is used.

- 2.4 The persons conducting the survey should be required to produce a report which would at least reveal any significant impacts beyond the jurisdiction of the licensing State, and the extent of impacts in terms of the following:

- (a) Adverse effect on any commercial interest in terms of:
  - i) estimate of the losses to be suffered;
  - ii) estimate of the period of time for which the commercial enterprise would not be viable.
- (b) Adverse effect on any scientific interest, in terms an estimate of the period of time when scientific progress would be inhibited.
- (c) Adverse effect on any recreational activity, in terms of an estimate of the numbers of persons who would be denied that activity, and the period of time during which it would be denied to them.
- (d) Adverse effect on any social or cultural activity, in terms of an estimate of the number of people who would be affected, and the period of time for which they would be affected.
- (e) Extinction of any species of plant or animal.
- (f) Adverse effect on any submarine area designated and maintained by a public authority as a marine park or otherwise protected area, in terms of the extent to which:
  - i) habitat would be affected;
  - ii) plants or animals living in the area would be affected including any inducement of animals to leave the area;
  - iii) further development of the park or protected area would be inhibited, and an estimate of the period of time of that effect.
- (g) Alteration of any area of sea-bed or coastal terrain to the extent that it would be classified differently in geophysical or ecological terms. An estimate of the duration of such change.
- (h) Adverse effect on local amenity by reason of:
  - i) visual intrusion;
  - ii) noise or vibrations;
  - iii) discharge to water or the atmosphere.

- (i) Adverse effect on public health in terms of extent and severity.
- (j) Estimate of any additional cost in maintaining a public service.
- (k) Temporary development of a coastal area in terms of:
  - i) increase in population of nationals in the area;
  - ii) estimate of period during which the increased population of nationals will be maintained;
  - iii) estimate of the extent of any sites of industrial dereliction remaining after completion of the project and cessation of all operations thereunder.
- (l) Assessment in appropriate terms of any other significant adverse effect.
- (m) Benefits expected to the local environment from the operation.

ANNEX 1

MATRIX

Left Hand Column

Explosives used:  
in seismic operations;  
in laying pipelines.

Drilling of:  
exploratory well;  
appraisal well;  
production well;  
secondary recovery well;  
diversion of existing  
well.

Disposal of:  
drill cuttings;  
waste drilling fluids;  
oily waste waters:  
production water;  
displacement water;  
offshore processing  
drainage;  
machinery space  
drainage;  
oily sludges from  
separators.

Other disposals:  
sewage;  
garbage;

Use of chemicals which may  
enter the marine environment.

Use of sacrificial anodes:  
of anti-corrosion  
coatings;  
of impressed current  
system;  
of electrical shockers for  
cooling water intake.

Pipeline:  
laying;  
pre-commissioning work;  
maintenance.

Installation of:  
production platform;  
gas and oil separation  
platform;  
control platform for  
satellite wells;  
subsea completion.

Suspended well head:  
suspension of operations;  
presence of well head;  
presence of marker buoy.

Mooring and loading points:  
installation of new  
loading buoy;  
presence of loading buoy;  
accident due to maritime  
perils;  
oil spillages.

Other offshore storage  
facilities:  
submarine storage tanks;  
floating storage vessels.

Well work-over - the risks  
involved.

Works of maintenance, repair  
and replacement.



Onshore developments:  
loading berths;  
tank farms;  
LPG storage vessels;  
gas/oil separators;  
pumping stations;  
construction and  
maintenance yards.

Other operations.

Top Row

Direct Effects

Consequential Effects

National income.

Employment.

Development of expertise:  
scientific knowledge;  
technical knowledge.

Effects on installations of:  
geological faults;  
seismic activity;  
taunamic generation;  
erosion;  
sedimentation;  
seafloor settling after  
withdrawal of  
groundwaters.

Modification of sea bed and  
coastal terrain:  
surface cover;  
reefs;  
corals;  
lagoons;  
mangroves;  
tidal flats;  
salt marshes.

Risks of fire, explosion and leakages from:

- oil storage tanks;
- LPG storage vessels.

Ballast water discharges from tankers transporting the product to shore.

Effects on water:

- temperature;
- salinity;
- pH;
- suspended solids;
- dissolved oxygen;
- oil content;
- faecal coliform;
- movement of water;
- frequency of interchange;
- other forms of water pollution;
- radio active substances discharge.

Accumulation of discharged substances:

- oils;
- faecal coliform;
- other substances.

Effects on:

- desalination of water;
- benthic organisms;
- demersal fish;
- pelagic fish;
- migratory aquatic species;
- dugongs;
- turtles, including breeding sites;
- other macro species;
- plankton;

composition of the  
aquatic community with  
particular reference to  
critical habitats;  
submerged plant species;  
coastal terrestrial  
species, e.g. dune  
species;  
slat marshes;  
food chains;  
mangroves.

Commercial fishing, including  
the exploitations of shell  
fisheries.

Sport fishing:  
clamming and crabbing;  
coastal fishing;  
deep sea fishing.

Water sports:  
swimming;  
boating;  
water skiing;  
wind surfing;  
scuba diving;  
other water sports.

Effects on:

habitats, including  
beneficial  
effects and formation of  
new habitats;  
spawning and breeding  
grounds;  
nursery areas;  
marine parks;  
historic sites, including  
sites of wrecks;  
recreation areas.

Effects on aquatic species:  
benthic species;  
demersal fish;  
pelagic fish;  
migratory species;  
dugongs, seabirds and  
turtles including  
breedings sites;  
other macro species;  
plankton;  
composition of aquatic  
communities.

Aesthetic effects:  
overall visual amenity;  
coastal amenity;  
submarine amenity.

Effects of emissions to the  
atmosphere:  
hydrocarbons;  
nitrogen oxides;  
sulphur oxides;  
carbon monoxide;  
losses from "floating  
roof" tanks.

NOTE : Some effects may be noted under more than one heading. "Double counting" of such effects must be avoided. This can best be done by cross reference in footnotes.

## ANNEX 2

### CRITERIA FOR ASSESSING THE EFFECTS ON FLORA AND FAUNA

#### 1. Carrying out the Initial Survey and making the Assessment

Paragraph B 4.3 (a) of these guidelines requires the person carrying out the survey to describe the existing ecological state of the area which might be affected by the project. That will be followed by an assessment of the possible effects on the biota of the area. Some guidance is given on the possible extent of the survey, and making of that assessment below.

#### 2. Marine Life

2.1 For the purpose of assessing the possible effects on marine life, the survey should include, so far as they may relate to matters within the terms of reference:

- (a) the abundance and distribution of benthic, demersal and pelagic species.
- (b) identification of organisms of commercial and scientific interests.
- (c) presence of breeding grounds and other sensitive habitats.
- (d) seasonal variations in distribution and numbers.
- (e) the normal chemical and physical characteristics of the water and other elements of their environment.
- (f) seasonal changes in physical and chemical characteristics of sea water.

2.2 The surveyor should give details of any discharges likely to be made into the environment. They should include assessments of the total weight or volume of

the discharge, as appropriate, assessment of the dispersion and final concentrations in the waters of the area. Where a discharge contains suspended solids, particle size and the species which may be affected, are important factors to be considered. Special and separate attention should be given to sensitive areas.

- 2.3 Assessment should then be made of the potential effects on the biota of the area. Special attention should be given to species which are rare or particularly sensitive, and to the need for more detailed information on their ecology and sensitivity to particular substances than for others. Any possible effects to the reproductive capacity of organisms should also be considered.

If there are commercial fisheries, including shell fisheries, within the area, an estimate should be made of any likely loss of yield or income.

For marine parks the estimate should be in terms of species and numbers affected. For areas of high amenity, there should be an explanation of the features or characteristics affected, and if possible an estimate of any likely fall in the number of visitors and any consequent financial loss.

- 2.4 The assessments should be made on the basis of toxicity tests, which should be carried out, if feasible, on local species and varieties. Such test will normally be 96 hour  $LC_{50}$  tests. For some discharges, however, where the toxic constituent is a highly persistent substance present in very small quantities, e.g. mercury, longer term tests will be needed, where 96 hour  $LC_{50}$  tests on certain substances have been carried out by an authority recognized by the EIA Office, the results may be used towards the assessment of the potential toxic effects of such substances.

- 2.5 Where toxic substances are likely to get into the tissues of any particular species, and especially where they are likely to get into the food chain, the possible effects on all marine organisms and humans should be assessed.

- 2.6 Separate consideration should be given to possible effects within the jurisdiction of other States.
- 2.7 Discretion will have to be used in requiring some of the above tests to be carried out. Account will have to be taken of the time and expense involved, and the probable value of the results.

Local academic and research institutes could be involved in the research, and in the long term a greater body of knowledge of the local biota and its responses to pollution built up.

It must be emphasized, however, that it would be unfair to impose on a particular applicant the delay and cost involved if the main purpose was to build up knowledge for future occasions. The applicant must be asked to bear no more in cost and delay than is strictly necessary to assess the impact of his proposed project.

### 3. Birds

- 3.1 In assessing the possible effects on bird life, the following must be considered:
  - (a) The possibility of migratory routes through the area.
  - (b) Food and food chains.
  - (c) The possibility of interference with roosting, e.g. on marshes, dunes and floating vegetation.
  - (d) Reproductive capacity:
    - behaviour changes;
    - viability of eggs;
    - toxin loading in eggs as well as in young and adults.
- 3.2 For these purposes, the person carrying out the survey should be required to consult one or more local expert ornithologists.





**GUIDELINES ON THE USE AND  
STORAGE OF CHEMICALS IN  
OFFSHORE OPERATIONS**

GUIDELINES ON THE USE AND STORAGE OF CHEMICALS  
IN OFFSHORE OPERATIONS

1. Purposes of the Guidelines

1.1 The Protocol concerning Marine Pollution resulting from Exploration and Exploitation of the Continental Shelf, at Article XI, provides that:

"Each Contracting State shall take all appropriate measures to ensure, the following:

- (a) Each operator of an offshore installation shall prepare, and submit for approval to the Competent State Authority, a "Chemical Use Plan". Application for amendments to the Plan may be submitted subsequently and approved. If at any time he wishes to use a chemical outside the scope of his approved Plan, and that chemical may escape into the marine environment, he shall notify the Competent State Authority; except that in case of emergency to prevent the risk of injury to person or extensive damage to property, the notification need not be given prior to the use of the chemical.
- (b) The Competent State Authority has a power to prohibit, limit or regulate the use of a chemical or product and to impose conditions on its storage and its use, for the purpose of protecting the marine environment. In exercising that power, the Authority shall have regard to any Guidelines issued by the Organization."

1.2 These guidelines are issued pursuant to paragraph (b) of that Article, and relate to the use of those powers.

The chemical use plan is an instrument used in the prohibition, limitation or regulation of the use and storage of chemicals. Its contents and its application are therefore considered to be properly within the scope of these guidelines.

1.3 A secondary and associated service the Organization may eventually be able to provide, will be to inform the operators of chemical products and their characteristics, and to assist them so that they are better able to choose an acceptable chemical at the outset. Operators may consider obtaining such information from a data base which is to be developed by ROPME or by E & P Forum in consultation with ROPME (Annex 1).

1.4 Once the Protocol is put into effect the Operator should be allowed a period of three months for submission of applications for approval. Until approval there should be no constraint under Article XI on a continuation of their existing chemical uses, but for additional uses a provisional permit should be needed.

## 2. Interpretation

2.1 For the purpose of these guidelines:

"Approved list of Chemicals" means a list of chemicals to be published by the Organization, each being a chemical which may be used, provided it is used in accordance with an approved chemical use plan and is to be used in a quantity not greater than that specified in the list for that chemical.

"Discharge" includes but is not limited to any planned intentional release, spilling, leaking, pumping, pouring, emptying or dumping.

"Notifiable chemical" means any chemical to be used in offshore operations, except

- (a) Chemicals listed in Para 2.2 which are exempt from notification; and
- (b) Chemicals included in the approved list of chemicals if to be used in greater quantities than specified in the list.

"Notifiable product" means any product which contains a notifiable chemical other than a trace amount that has no significant impact on the environment.

"Significant" means in relation to an adverse effect, of such severity that the Competent State Authority would consider it reasonable for the person threatened to take action to prevent it.

2.2 The following chemicals are "exempt from notification", which means that an operator need not include them in his chemical use plan, nor need he notify the Competent State Authority of his intention to use such chemical solely by reason of an obligation imposed pursuant to Article XI 1 (a) of the Protocol:

- (a) All forms of oil and oily mixtures, including oil bearing sludges and oily wastes, any refined products and drilling fluids the discharge of which is controlled under any other Article of the Protocol.
- (b) Subject to specified maximum quantities, and to deposit or discharge in such areas as may be specified by the Competent State Authority:
  - i) inorganic acids and alkalis used in mud formulations for pH modification, provided they appear in a list of chemicals approved for this purpose, compiled by the Organization with the help of Competent State Authorities, to be known as the "approved (pH modification) list";
  - ii) Natural, modified natural and synthetic anionic and non-ionic polymers which contain no added biocides and which have been specially developed for water based drilling fluids;
  - iii) any other substance acknowledged by the Competent State Authority as having no significant adverse effect on the marine environment;
  - iv) lost circulation materials;
  - v) sodium and calcium chloride brine solution for completion fluids.

(c) Any chemical used in offshore operations, of which there is no known possibility that it might escape into the marine environment so long as proper storage and use facilities are in operation.

(d) All items listed in 6.1, not already listed above.

### 3. Chemical Use Plan

#### 3.1 The Obligation

3.1.1 The Competent State Authority should take appropriate steps to ensure the following.

a) Before an operator stores offshore or uses in offshore operations any chemical, subject to specified exceptions, he shall submit to the Competent State Authority a chemical use plan.

b) No operator shall store offshore or use in offshore operations any notifiable chemical unless:

i) it falls within the chemical use plan submitted by him and approved by the Competent State Authority, and is stored or used in accordance with the terms of the approved plan; or

ii) its storage or use, including purpose and manner of use and quantity to be used, has been approved by the Competent State Authority.

3.1.2 The Competent State Authority should be empowered to approve a revision of a chemical use plan on the application of the operator at any time.

3.1.3 The operator should be required to update his plan at least once every two years.

### 3.2 Application for Approval

3.2.1 The application should be required to show the following on his application for approval:

- a) Name of any chemical product to be used.
- b) Name of supplier.
- c) whether the product is a gas, liquid, solid or a mixture, and their relative characteristics such as:
  - i) specific gravity;
  - ii) proportion of suspended solids to liquid (mg/litre);
  - iii) if in liquid state, whether miscible in seawater;
  - iv) Constituents which are soluble in seawater, stating solubility in mg/litre;
  - v) Flash point.
- d) Chemical name, formula or generic type of active ingredients and if applicable of any solvent, in so far as this information is available. To the extent that such information is not available, the chemical hazard data sheets prepared by the manufacturer should be obtained and submitted instead.
- e) Details of any toxicity tests on any of the chemicals named and their results, as available from the supplier, manufacturer, or other sources.

The production of the results of toxicity tests should be compulsory. The minimum required should normally be the results of a 96 hour  $LC_{50}$  test on brown shrimp (Crangon crangon). Where there are sensitive areas, or endangered species, the requirement should be more strict, e.g. tests on specified species.

- f) If the chemical product is to be discharged into the marine environment:
  - i) rate of degradation in the sea, if known;
  - ii) intended place or places of discharge;
  - iii) estimated rate of discharge, in terms of volume or weight per day and per year;
  - iv) quantity intended to be discharged on any occasion, i.e. during any particular operation, whether the discharge from that operation is continuous or intermittent;
  - v) local conditions which are likely to affect dispersal of the chemical.
  
- g) If the plan is to cover storage of chemicals or products offshore:
  - i) the chemicals or products to be stored, and whether or not they are to be stored in concentrated form;
  - ii) quantities in which they are to be stored;
  - iii) details of the storage vessels;
  - iv) details of any system of automatic alarm in the event of a leak, and any arrangements for preventing the leaked substance from reaching the marine environment;
  - v) details of any precautions to be taken when the chemical is to be transferred to or from the vessel.

3.2.2 In any application for revision of the chemical use plan, the operator should be required to give the following information:

- a) Any new information, or change of information, which would have been needed for full disclosure on a first application.
  
- b) Any new circumstances which might justify the revision.

- c) Any other new circumstances of which the operator is aware, which might affect the consequence of the discharge in a way adverse to the marine environment, or the interest of any person in it.

### 3.3 Powers of Approval

3.3.1 The Competent State Authority should be given the following powers, which it may exercise on receipt on an application:

- a) To require from the operator further information falling within the scope of paragraph 3.3.1., or further and better particulars of information already given.
- b) To grant approval of the chemical use plan as submitted.
- c) To refuse to grant approval.
- d) To return the plan with an invitation to resubmit in amended form. Without prejudice to its power to refuse approval, the Competent State Authority may indicate amendments which it may consider acceptable.
- e) To attach to the approval such conditions relating to the protection of the marine environment as it thinks fit. Without prejudice to the generality of that power, conditions may relate to:
  - point of discharge
  - time of discharge
  - manner of discharge
  - maximum quantity to be discharged in any specified period.

### 3.4 Procedure

3.4.1 The applicant to submit the proposed plan and application for approval, as required under 3.2.



3.4.2 The Competent State Authority to either:

- a) approve the Plan; or
- b) notify the applicant of any recommended modification.

This procedure may be repeated until the Competent State Authority is satisfied with the Plan.

On receipt of any recommended modifications, the applicant should have the right to a meeting with a representative of the Competent State Authority to discuss the recommendations.

4. Factors to be taken into account when considering approval

4.1 Chemical Constituents whose use should not be approved, save in Special circumstances.

The storage or use of chemical products relying on any of the following as active constituents should be approved only in special circumstances. Any storage or use of chemicals based on the following should be avoided:

- (a) Mercury, cadmium, cyanide, chloro-phenols, polychlorinated biphenyls and terphenyls and other persistent organo-halogens, organo-tins and other organo-metallic compounds.
- (b) Any of the following likely to be discharged in concentrations of over 50 ppm:  
arsenic, lead, copper, zinc, beryllium, nickel, vanadium, chromium.
- (c) Any radioactive substances.
- (d) Dioxin.

## 4.2 Toxicity

4.2.1 Where possible, precise details of the toxicity of chemicals should be obtained. They will normally be in terms of 96 hour  $LC_{50}$ , although in some circumstances a shorter period may be more appropriate.

4.2.2 Even a 96 hour time scale, however, will not necessarily reveal sufficient of long term effects. A low level discharge of a persistent chemical which tends to accumulate in plant or animal tissues can have effects discernible only after long exposure. For those suspected of such persistences, it would be prudent to have carried out laboratory assessments over longer periods.

Where there are animal breeding grounds, effects on fecundity, and on the survival and growth of young should be considered.

4.2.3 The tests will show effects on particular species. In many cases they will be valid, even though conducted in another region. Care must be taken, however, to allow for possible differences in closely related organisms. Species from the ROPME Sea Area, even though classed taxonomically as belonging to the same species, in their local environment may react to the chemicals differently. Separate tests may therefore be advisable, made in controlled conditions on local species and sub-species suitable for bioassay tests. The results of those tests would be useful additions to the data bank referred to in 4.2.4 below.

4.2.4 The initial source of the data will normally be the manufacturer of the product. It may be advisable to inform manufacturers of the need for toxicity data on any of their products to be used in the Region. Any data provided on

specific chemicals by a manufacturer, however, may need to be checked by the Competent State Authority using competent and independent scientists, preference being given to local institutions.

For that purpose, the Organization may encourage the development of expertise of marine toxicity in local bodies such as universities and research institutes. It would be useful also for it to maintain an up to date list of bodies elsewhere which are both competent and willing to do such work.

It would be helpful if State parties transmitted to the Organization all toxicity data on local species which they obtained. A data bank useful to all parties could then be compiled and kept available for reference.

It would be useful also if the data bank could recommend the highest concentration of any chemical or group of chemicals which should be permitted in any specified area or type of area, e.g. coral reefs, salt flats.

4.2.5 The procedure outlined above will be satisfactory for long term purposes, but not necessarily for an operator waiting for a decision. For practical purposes, at least two courses of action should be available.

a) Provisional permits may be issued until reliable toxicity data are available.

b) The procedure outlined in the note to 6.2 may be used.

#### 4.3 Rate of Degradation

4.3.1 The rate of degradation in the waters of the Protocol Area, taking into account the significant differences in temperature and

salinity which can be found in various areas and at various depths, will always be an essential factor in assessing the affects of toxic constituents. A check should also be made on the substances into which they degrade.

- 4.3.2 The comments on the sources of data and the safeguard of independent checks made in 5.2.4 above, apply to data on degradability also.

#### 4.4 Points of Discharge and Patterns of Dispersal and Concentration

- 4.4.1 All points of discharge to be covered by the approval should be known. Times of discharge may also be relevant.

The extent of dispersion, any resultant dilution, and the possible transport of pollutants to other areas under the local current regime, should all be taken into account.

Such information may be available from research carried out locally or from Data bank established from data, culled from various sources, e.g. environmental impact statements, monitoring carried out by operators, pollution incidents.

The possibility of an accumulation of chemicals in seabed silts and in plant and animal tissues should also be examined.

- 4.4.2 The provision of adequate data on the above, however, must be regarded as a long-term prospect. For practical purposes a decision must be made at an early date. If there are severe doubts about the effects of a discharge, a provisional permit may be issued.

#### 4.5 Place and Manner of Storage

Special precautions will always be needed if any chemical is to be stored in concentrated form. The quantity to be stored in any one place will always be relevant. Consideration may be given to the continued use of existing storage vessels and containers for the remainder of their working lives, with additional safeguards as may be considered necessary.

#### 4.6 Sensitive Areas

As required by Article V 1 of the Protocol, regard must be had to the need for protecting sites of special ecological and cultural interest.

The sensitivity of the areas which may be reached by the chemicals, and both direct and consequential damage which might be suffered should always be considered, e.g. reduction in fish catches due to damage to fish breeding grounds.

#### 4.7 Cumulative and Synergistic Effects

The possibility of cumulative or synergistic effects with discharges from other operations, whether conducted by the same operator or not, should always be considered.

### 5. Provisional Permits

- 5.1 In cases in which it could take some time to obtain all the data necessary to reach a decision, consideration should be given to the grant of provisional approval of a chemical use plan. That would permit offshore storage or use of chemicals within the terms of the plan, subject to such limitations as the Competent State Authority thought fit, until the Plan was rejected or replaced by a fully approved Plan.

5.2 No such provisional approval should be granted for a chemical which could be used in such quantities that it might affect an area of special ecological or cultural interest. Otherwise, the decision on provisional approval would be a matter for the discretion of the Competent State Authority, taking into account the:

- apparent toxicity of the chemical;
- possible degree of damage to the marine environment;
- possibility of irreversible or long term damage;
- benefits which immediate use would bring to the operator;
- estimated length of delay before final decision, and possible effect of that delay on the operator.

5.3 Provisional approval should not be granted unless there is at least prima facie evidence that the chemicals in question, and their related compounds, will have no significant adverse effect on the marine environment,

when used in the conditions and with the limitations under consideration, except where there are compelling reasons to support their use, e.g. the proposed use itself constitutes a safety precaution.

6. Chemicals for which, subject to notification, approval is deemed to have been granted

6.1 There are some chemicals which the Competent State Authority may consider can normally be discharged into the marine environment within its jurisdiction without significant environmental damage, provided certain quantitative limits are not exceeded. They may be included in a list of chemicals for the use or storage of which approval is deemed to have been given provided:

- a) the Competent State Authority is notified at least 21 days before the offshore storage or use of the chemical;

- b) the maximum quantity to be stored or used is given.

The list may include such substances as:

- sand and gravel;
- solids which have no significant reactions in the marine environment, including clays, bentonite, barytes and calcium carbonate, sodium and calcium chloride brine;
- phosphate-based inorganic dispersants;
- starch and cellulose formulations containing no biocides, synthetic or modified anionic and non-ionic polymers which contain no added biocides and which have been specially developed for water based drilling fluids.

- 6.2 If, within that 21 days, the Competent State Authority decides that there should be no approval, that deemed consent should be withdrawn, or made subject to such conditions as the Competent State Authority thinks appropriate.

This may be done where the Competent State Authority has evidence that significant damage could be caused, or where it is aware of the storage or use of the same chemical within the vicinity which makes the aggregate quantity unacceptable. The same may be apply when there is a different chemical to be stored or used within the vicinity, which could lead to a damaging reaction between the two.

## 7. Criteria for approval

- 7.1 The Competent State Authority will need to have all the information necessary for reaching an informed decision on whether or not to grant approval.

Much of that information, including toxicity and rates of degradation will have been given by the operator in his initial application. Much else will also have already been given if an environmental impact statement

has been submitted. If any further information is needed, the operator should be required to obtain it, provided it could be obtained without substantial cost or delay.

7.2 The range of information needed to make a reasonable adequate assessment of the potential damage of any escape or discharge may include details of:

- (a) the nature of the chemicals to be used, the chemical name, formula or generic type of the active ingredients and if applicable of any solvent in the product, and the state or form in which they are present there.
- (b) their toxicities, their rates of degradation in the marine environment, and the natures and corresponding characteristics of the chemicals into which they will degrade.
- (c) total quantities of the chemicals in question reaching the marine environment.
- (d) dispersal patterns and final concentrations in the environment.
- (e) general chemical and physical properties of the water, and general state of the environment, before the discharge begins.
- (f) the abundance and distribution of benthic, demersal and pelagic species.
- (g) seasonal variations in numbers and distribution.
- (h) organisms of commercial and scientific interest.
- (i) in assessing the effects on habitat, the Competent State Authority should consider the likely consequent effects on any plants and animals dependent on that habitat.



- 7.3 The Competent State Authority should consider refusing approval for any product which, on release into the environment as planned, would cause:
- (a) the extinction of any species of plant or animal.
  - (b) significant adverse effect on any submarine area designated and maintained as a marine park or other kind of protected area.
  - (c) significant adverse effect on any area of commercial or scientific interest.
  - (d) significant adverse effect on public health.
  - (e) any significant adverse effect within the jurisdiction of another Contracting State.

There need not be an outright refusal, however, if limitations on quantities or use, or if conditions, can provide satisfactory safeguards.

#### 8. Storage of Chemicals Offshore

If any notifiable chemical or notifiable product is to be stored offshore, the Competent State Authority should take appropriate steps to ensure that the following precautions are taken:

- (a) Maximum quantity for any one storage place should be laid down. The quantity:
  - i) in the case of a chemical for which approval may be deemed to have been given under section 6 of the Guidelines on the Use of Chemicals in Offshore Operations, should be no higher than the maximum for deemed approval;
  - ii) in the case of any other chemical, should be fixed in accordance with:
    - concentration in which the chemical or product is to be stored;
    - toxicity and rate of degradation;

- sensitivity of any area which could be affected by an escape; ..
  - possibility of transfrontier pollution.
- (b) Every container has an overflow outlet, and there is provision for any overflow to be retained automatically on the installation.
- (c) In the case of a highly toxic concentration, a double shelled container is used, and there is provision for an audible warning to be given automatically if there is a leak from the inner shell. A maximum storage time for such chemicals of three months is recommended. Regular inspection of storage vessels to prevent spillage/contamination through leakage resulting from corrosion is also recommended.
- (d) In cases other than those falling within (c) above, all liquids leaked from the container will automatically be held on the installation.

Case must be taken to avoid conflict with precautions to be taken for the health and safety of workmen. If conflict is unavoidable, paramount consideration must be given to public health, including the health and safety of workmen.

The need for operators to store chemicals in such a way as to maintain their qualities must be taken into account. Such considerations must not be permitted to prejudice the protection of public health or the safety of workmen.

ANNEX 1

PROPOSED MINIMUM DATA SET\*

Part I Supplier Data

---

Trade name of product:

---

Contact person : Position in company:  
Telephone no. : Address :  
Telex No. : Emergency Telephone No.:  
Telefax No. : (24 hours)  
Name and Address of supplier :  
Country of manufacturer/formulation :

Part II Chemical Composition Data

1.2@ Application

---

1.3@ Composition            single compound/mixture  
                                  solution/suspension/emulsion  
chemical (or generic) composition

Active ingredients  
Solvent

\* As presented by E & P Forum based on SHOC Questionnaire entries.

@ Numbers refer to entries in E & P Forum SHOC Questionnaire Report.

7.10 regulatory requirements

Indicate if the product contains any compounds regulated under Paris Convention Annex A

metals	Yes/No
organohalogens	Yes/No
organophosphorus compounds	Yes/No
organotin compounds	Yes/No
others listed	Yes/No

If yes :

<u>Item</u>	<u>Concentration</u>	<u>Trace*</u> <u>YES/NO</u>	<u>Intentional</u> <u>Additive</u> <u>YES/NO</u>
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

\* Trace containment defines as less than 0.1% less than 1000 ppm.

PART III

1.2 physical form and appearance                      solid/liquid/gas

odour  
colour

1.4 Physical properties

density (kg/m <sup>3</sup> )			
boiling point/range (°C)			
soluble in water	YES/NO	soluble in oil	YES/NO

---

solubility in water (kg/m<sup>3</sup>)  
pH (of saturated solution in water)  
vapour pressure (mbar)  
flash point (°C)

---

- 7.2.3 bioaccumulation/potential  
(composite products data on  
components are preferred)

n-octanol/water partition coefficient

Part IV Toxicological Data

(based on existing literature/existing test data/  
e.g. previously approved products/new experimental  
data/experience).

6.2 experimental animal data

6.2.1 acute toxicity

inhalation	LC <sub>50</sub> , rat
percutaneous	LD <sub>50</sub> , rat
oral	LD <sub>50</sub> , rat
other species	highly toxic/toxic/slightly toxic/non-toxic

6.2.2 skin irritation  
method  
rating

corrosive/severe irritant/  
irritant/slightly irritant

6.2.3 eye irritation  
method  
rating

corrosive/irritant/  
slightly irritant

---

7.2 Environmental data

7.2.1 acute toxicity -

- a) fish \*
- b) invertebrates \*

growth inhibition -

- a) algae
  - b) microorganisms
- 

7.2.2 biodegradability

(For composite products data on components are preferred)

give % biodegradation, time and method used

This submission is accompanied by (must have one)

SHOC Document	Yes/No
MSDS	Yes/No

\* If  $LC_{50}$  for one species is  $>1000$  mg/l and material is biodegradable and does not contain priority pollutants above trace quantities, no other acute toxicity or growth inhibition data required.

**GUIDELINES ON THE CONDUCT OF  
SEISMIC OPERATIONS**

## GUIDELINES ON THE CONDUCT OF SEISMIC OPERATIONS

### 1. Introductory Note

- 1.1 The Protocol concerning Marine Pollution resulting from Exploration and Exploitation of the Continental Shelf, at Article XI 2, provides that:

"Each Contracting State shall take appropriate measures to ensure that seismic operations in the Protocol Area shall take into account the Guidelines issued by the Organization".

These Guidelines are issued for the purpose of this provision.

- 1.2 In these Guidelines the word "operator" includes not only the person conducting offshore operations as a whole, but also any contractor who may be carrying out seismic operations for him, except where a distinction is expressly made between the two.

### 2. Seismic Operations Plan

- 2.1 The Competent State Authority is to ensure that the operator has from the outset planned to carry out his operations in a manner which will not create unnecessary danger of injury to persons, or damage to property, or to the environment and its fauna and flora.
- 2.2 Contracting States should take steps to ensure that before commencing seismic operations, an operator shall have submitted to the competent State Authority a "seismic operations plan", and have received approval in writing for that plan. Any departure therefrom should be approved.



- 2.3 Since there are recent developments in seismic technology involving non-explosives sources of seismic exploration (e.g. air guns using compressed air and water guns) which can be used as a substitute to explosives in deep water environments and which require less precautions to be taken, the Competent State Authority should not approve a seismic operation Plan involving the use of explosives if one of the alternative techniques would be as effective.
- 2.4 Before approving any Plan, the Competent State Authority should check on:
- (a) sensitive areas which might be affected;
  - (b) the possibility of:
    - i) interference with the breeding cycles of any marine animals, including fish and shellfish;
    - ii) presence of any migratory species which might be affected including sea birds;
    - iii) commercial fishing which might be affected or interrupted;
    - iv) sporting and amenity activities which might be affected, e.g. yachting, scuba diving.
- 2.5 The Plan should include express and adequate provision to meet all the requirements and precautions set out below.
- 2.6 The Competent State Authority should have powers of inspection, supervision and enforcement sufficient to secure compliance with the Plan.
3. Liaison with Fishing and Other Interests
- 3.1 The Competent State Authority should take the necessary measures to ensure that adequate liaison is established between the operator and fisheries authorities as well as other concerned authorities regarding seismic operations.

### 3.2 Procedure for Notice of Survey

3.2.1 An operator should be required to give at least 40 days notice to Competent State Authority, to conduct a seismic survey. The notice should give:

- a) the date or dates of the proposed survey.
- b) the route to be taken by the survey vessel.

3.2.2 It should then be the duty of the Competent State Authority to inform forthwith:

- a) every other Government department, authority and agency, and every public authority, whose work or responsibility could be affected.
- b) any other persons or bodies, such as research institutes, whose work or equipment could be affected, and who have requested that such notices be sent to them.

### 3.3 Other Provisions

3.3.1 The State should identify the positions of static fishing gear and advise the operator.

3.3.2 Operator should be required to liaise with yacht clubs and tourist organizations to avoid interference with their activities.

3.3.3 Operators should be required to:

- a) avoid damage, including disturbance which may have long term effects, to or in sensitive areas.
- b) avoid disturbance of fish and shrimp breeding grounds during the breeding season and during the early stages of development.
- c) avoid any damaging disturbance of colonies of birds and marine animals.

d) avoid damage to any undersea cables and pipelines.

3.3.4 If damage is done to any fishing gear by a survey vessel, the operator should be required to compensate the owner of the gear if:

a) the fishing gear was static, and its position was marked by buoys; or

b) the survey was carried out without due notice, or on different days from those published.

#### 4. Equipment and Manning of Vessels

4.1 A vessel using explosives for seismic survey should be equipped with radar, and sidescan sonar and fish-finding sonar. Immediately prior to and throughout the period when explosives are used, the radar and sonar equipment should be in continuous operation.

4.2 During the period when explosives are used, all survey vessels should fly the applicable flag signal of the International Code of Signals, published by the International Maritime Organization.

4.3 Throughout any voyage on which explosives may be used within two kilometers of any commercial or sport fishing area, the vessel should carry a fishery expert with a knowledge of the area. He shall have a purely advisory function. The expert shall keep a log recording the times and positions of all detonations, which shall be kept available for inspection by the operator and the Competent State Authority.

#### 5. The Explosives

5.1 Each explosive charge should be fitted with a safety device which renders the charge harmless if it remains in water for more than two hours.

5.2 Each charge should be indelibly marked with letters or a symbol which will identify the operator.

5.3 The explosives should be kept in an appropriately safe and secure place, in accordance with any requirements laid down by the Competent State Authority.

One qualified person, experienced in the use of those types of explosives and equipment, should have sole charge of the explosives store.

He should be empowered to delegate his responsibility only to some other qualified and similarly appropriately experienced person.

The person appointed to have sole charge should be required to keep an up to date inventory of all explosives, detonators and fuses.

## 6. The Use of the Explosives

6.1. The Competent State Authority, after approval of the seismic operations plan, should have the right to inspect the operator's equipment and explosive materials, and to supervise operations.

6.2 The use of explosives should at all times be under the direct supervision of a person qualified to use them, trained and experienced in the kind of work undertaken.

6.3 The seismic operations plan should include terms which seek to ensure the following:

(a) Explosives are used only when and where, in the opinion of the Competent State Authority, the use of such methods is necessary.

(b) Explosives are not used in such place or manner as to create a risk of significant damage in any specified sensitive area, e.g.

fish and shrimp breeding grounds;

established commercial or sport fishing grounds;

mangroves;  
coral reefs.

- (c) Explosives are not used in such place or manner as to cause risk of damage or injury to:
  - vessels engaged in fishing;
  - floating or stationary fishing gear;
  - shoals of fish.
  
- (d) Explosives are not used in such place or manner as to cause risk of damage to underwater installations, including:
  - subsea completions;
  - pipelines;
  - cables.
  
- (e) Explosives are not used:
  - i) within two kilometers of a place where diving operations are in progress, or within such greater distance as the Competent State Authority may specify, after taking into account the type of explosive to be used and the size of the proposed charge;
  - ii) within eight kilometers of a place where diving operations are in progress, unless at least 72 hours notice had been given of:
    - the type and size of charge to be used;
    - the time of proposed detonation;
    - any other pertinent information.
  
- (f) Explosives are not used within two kilometers of the boundary of another Contracting State's Continental Shelf jurisdiction, except by agreement with the relevant and Competent State Authority of that State.
  
- (g) In all circumstances, explosives of a type likely to cause the least damage to marine life are used.
  
- (h) Explosive charges used are no larger than is necessary for the purpose in mind.

- (i) Explosive charges are always detonated as close to the surface of the sea as is feasible in the circumstances, taking into account the purpose of the operation.
- (j) The operator keeps a log of all explosives used, including:
  - i) type of explosive and weight of charge used;
  - ii) time of detonation;
  - iii) any unintended effects observed;
  - iv) any misfires, and action taken as a result.

6.4 The department of government responsible for defence should be contacted before explosives are used at sea, particularly concerning:

- (a) the possible presence in the area of exploration of any unexploded mines, shells or other military or naval explosives.
- (b) restrictions which may be imposed for the security of defence works, installations and equipment.
- (c) naval exercises, including the use of firing ranges, in the area.

GUIDELINES ON THE VOLUNTARY  
REGULATION OF THE DISPOSAL  
OF DRILL CUTTINGS ON THE  
SEA BED

GUIDELINES ON THE VOLUNTARY REGULATION OF THE  
DISPOSAL OF DRILL CUTTINGS ON THE SEA BED

1. Introductory Note

1.1 The Protocol concerning Marine Pollution resulting from Exploration and Exploitation of the Continental Shelf, at Article IX 4 provides that each Contracting State shall pass measures to ensure that:

"(a) Oil-based drilling fluids shall not be used in drilling operations in those parts of the Protocol Area within its jurisdiction except with the express sanction of the Competent State Authority. Such sanction shall not be given unless the Authority is satisfied that the use of such fluid is justified because of exceptional circumstances. If such fluid is used, the drill cuttings shall be effectively treated to minimize their oil content before being appropriately disposed off. Any wash waters shall not be discharged at any place from which they may be carried to mix with the same drill cuttings. The discharge point for the cuttings shall, as appropriate, be well below the surface of the water.

(b) No oil-based drilling fluid shall be discharged to any parts of the Protocol Area within its jurisdiction.

(c) Water-based drilling muds discharged from offshore operations must not contain persistent systemic toxins which may continue to pose an environmental threat after the initial drilling fluid discharge."

1.2 There is no further obligation in the Protocol on the control of the deposit of drill cuttings with a view to protecting the marine environment.



However in view of the fact that :

- (a) further research is needed, and is continuing, it would be premature at this stage to create any specific obligations concerning the deposit of drill cuttings;
- (b) in some circumstances damage to the environment can be done by the deposit of drill cuttings, it would be prudent to ask the Contracting States to accept a voluntary scheme of control based on what is presently known.

These Guidelines have been produced to form the basis of that voluntary scheme.

- 1.3 Under this scheme, each Contracting State is asked to take steps to see that these Guidelines are observed by operators within its jurisdiction, in the disposal of their drill cuttings. Those steps may be the issue of regulations, administrative measures, or such other means as the State considers appropriate.

## 2. Sensitive Areas

- 2.1 As a necessary pre-requisite, Contracting States are asked to delineate areas which are particularly sensitive to pollution, e.g.. coral reefs, fish breeding grounds, or areas in which the damage may be particularly grave, e.g. major fishing areas, areas of desalination plant intakes, and designate them as "sensitive areas".

They are further asked to delineate around each sensitive area a "safety zone".

- 2.2 An operator who wishes to deposit drill cuttings within a sensitive area or safety zone should be required to give the Competent State Authority at least 21 days notice of his intention to do so.

### 3. Guidance on Disposal according to Type

#### 3.1 All Drill Cuttings:

3.1.1 Contracting States should seek to ensure that no drill cuttings are deposited on the sea bed in a sensitive area except in accordance with an approval granted by the Competent State Authority.

3.1.2 No discharge of drill cuttings to the sea bed should be approved at a place from which particles may settle in significant quantities on any designated sensitive area.

In estimating a safe distance between such an area and a proposed point of release, regard should be taken of:

- a) the height above the sea bed at which the release may be permitted;
- b) the size and character of any particles which may be released in large quantities;
- c) the local current regime.

#### 3.2 Cuttings from Drilling in which only Water Based Drilling Fluids have been used:

No fluid should be regarded as water based drilling fluid if any kind of oil forms more than 10 per cent of the liquid phase of the drilling fluid. Upon discharging drill cuttings resulting from water-based drilling muds due regard should be made to the provisions of Article IX 4 (c).

#### 3.3 Cuttings from Drilling in which Diesel Oil Based Drilling Fluid has been used:

3.3.1 A drilling fluid should be regarded as falling within this category if diesel oil forms at least 25 per cent of the liquid phase of the fluid.

- 3.3.2 Drill cuttings from drilling during which diesel oil based drilling fluid has been used shall not be deposited on the sea bed in the Protocol Area without the express approval of the Competent State Authority.
- 3.3.3 Approval for the deposit of the cuttings should not be given except when the Competent State Authority is satisfied that exceptional circumstances justify the deposit.
- 3.3.4 The Organization should periodically review the available technology for cleaning drill cuttings, and set standards of treatment. The Competent State Authority should have power to ensure that those standards are met by the operator when he treats the cuttings in accordance with Article IX 4 (a) of the Protocol.
- 3.3.5 In any event, the deposit of drill cuttings should not be permitted within such distance as may be specified in the approval from any designated sensitive area. The calculation of that distance should take into account the sensitivity of the area and the local current regime. The distance could be up to 2,000 meters in the case of multi-well platforms.
- 3.4 Cuttings from Drilling when an Alternative Oil Based Drilling Fluid is Used:
- 3.4.1 An Alternative Oil Based Drilling Fluid (Low Toxicity Oil) is the one in which the liquid phase contains over 40 per cent of low aromatic content mineral oil or other alternative low toxicity oils.
- 3.4.2 No drill cuttings produced when alternative oil based drilling fluid has been used shall be deposited on the sea bed in the Protocol Area without the express approval of the Competent State Authority.

When applying for approval, an operator should be required to submit details of toxicity tests on that fluid.

- 3.4.3 In the absence of such information, or any other reliable information on the toxicity of the fluid, the application should be treated as if the fluid were diesel oil based, as described above.
- 3.4.4 Paragraphs 3.3.4 shall apply to drill cuttings from drilling in which alternative oil based drilling fluid has been used, as they do when diesel oil based fluid has been used.
- 3.4.5 No discharge of cuttings to the sea bed from drilling when using an alternative oil based fluid should be permitted by the Competent State Authority within such distance from a sensitive area as may be specified in the grant of approval. The calculation of that distance should take into account the known toxicity of the fluid, the sensitivity of the area, and the local current regime.



