INTERNATIONAL MARITIME ORGANIZATION

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TWENTY-SIXTH CONSULTATIVE MEETING OF CONTRACTING PARTIES TO THE CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER 1972
1 – 5 November 2004
Agenda item 15

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REPORT OF THE TWENTY-SIXTH CONSULTATIVE MEETING

Table of Contents

EXECUTIVE SUMMARY

0.1 Contracting Parties to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention) met from 1 to 5 November 2004 at IMO Headquarters, London, for their 26th Consultative Meeting.

0.2 The main results of the Meeting are described below:

.1 The Meeting examined the reports of several countries on their preparations to join the 1996 Protocol to the London Convention, or London Protocol. With a current membership of 21 of the required 26 parties, the Protocol may enter into force in 2005 and, the first Meeting of Contracting Parties to the Protocol would need to be convened.

.2 In preparation for this entry into force, the Meeting reviewed an initial text for compliance procedures and mechanisms under the Protocol. It referred the resulting text and associated materials for further review to the first meeting under the Protocol, or the 27th Consultative Meeting, whichever occurs first. The Meeting also reviewed the draft procedures and criteria for determining and addressing emergency situations under the Protocol in light of advice from the Scientific Group and comments received intersessionally.

.3 The Meeting approved the "Short-term and long-term strategy to improve reporting under the London Convention", and the main elements include: (1) the development of an electronic form for parties to report their dumping activities; (2) the Chairman to write to Government Ministers of all Contracting Parties that had not reported in the last five years urging them to fulfill this requirement of the Convention; (3) non-reporting countries to be listed at all future meetings; and (4) renewed Secretariat efforts to obtain information on dumping activities reported directly to relevant regional conventions and mechanisms.

.4 New "Guidelines for the sampling and analysis of dredged material intended for disposal at sea" were approved, resulting from the amalgamation of two guidelines completed earlier. It was agreed that these Guidelines should be prepared as an IMO publication and added to the London Convention Web-site in such a way that it would stimulate rather than hinder the sale of the publication.

.5 The Meeting considered the challenge of stabilizing greenhouse gas concentrations in the atmosphere and recognized that CO_2 capture and storage in geological structures might offer important possibilities for making fossil fuel use more compatible with climate change mitigation policies. In this context, the Meeting agreed that the issue of CO_2 sequestration should be included in its work programme and to initially focus on sequestration of CO_2 in geological structures. Several activities were planned for the intersessional period to examine the legal, scientific and technical issues involved so that the next Meeting could review the progress and give guidance on what further work should be done to establish a clear position.

.6 Most permits for dumping of organic materials of natural origin that have been notified to IMO, involve cases of spoilt cargo on board ships. The Meeting continued its review of the 1997 advice on spoilt cargo management on the understanding that the primary focus of this advice should be the maritime community. Based on estimates concerning the quantities of cartons and plastic wrappings that may be dumped together with spoilt banana cargoes, the Meeting agreed that IMO and MEPC should be contacted with the aim of promoting good waste management practices. Parties should also enquire within their administrations as to the scale and seriousness of this issue as well as possible solutions, including options to avoid unregulated dumping of spoilt cargoes.

.7 The Meeting examined the scope of the exemption under Article III of the Convention that "dumping" does not include normal operations of vessels. This was in response to concerns of the Scientific Group, regarding the broad interpretation of the "cargo-associated wastes" which ships could discharge under MARPOL 73/78, Annex V (garbage). It was agreed that: (1) there were grounds for concern but further investigation was required to substantiate this concern; (2) MEPC should be asked to help clarify the boundaries between MARPOL 73/78 and the London Convention and Protocol, as well as to assist domestic regulatory and enforcement agencies in the discharge of their responsibilities; and (3) Parties to the Convention, being also parties to MARPOL 73/78, should identify examples or cases which they regarded as "dumping", instead of normal operations of vessels, and submit these in 2005 both to MEPC and the Scientific Group.

.8 The Meeting discussed the outcome of the IMO/UNEP/NEPAD Workshop on Marine Pollution Prevention and Environmental Management in Ports in Eastern Africa, which was held in Mombasa, Kenya, in April 2004. It supported the recommendations for follow-up activities and noted that the Workshop served as a good platform to promote and raise political awareness and support to advance the work of the London Convention and Protocol in the region.

.9 All four London Convention Workshops held since 1998 were aimed at broad-based participation from the region in which each Workshop was held. The Meeting discussed whether a different approach should be applied in the future and, for instance, could be aimed at countries in the same stage of economic and industrial development. It was agreed that a new workshop approach should offer a suite of approaches that must be tailored to the different kinds of situations which exist. The Scientific Group was requested to undertake this work in preparing for the 2006 Workshop.

.10 The Meeting reviewed the progress in the Russian Federation with its handling of low-level liquid radioactive wastes. It appreciated the continuation of the Russian moratorium on dumping of radioactive wastes and noted that Russia aimed to withdraw its objections to the 1993 amendments in Resolution LC.51(16) when the National Management Plan to address outstanding waste management issues would be completed in 2005. The Russian Federation was urged to do all it could to accelerate procedures for the acceptance of the ban on dumping of radioactive material by 2005 or earlier.

.11 The Meeting discussed several outreach activities to raise the profile of the London Protocol and, in particular, opportunities for lead-countries to promote this message at suitable meetings, as well as action to ensure that references to the London Convention and its achievements in UN publications were up-to-date and correct. The Meeting stressed the importance of promoting membership to the Protocol through the many related regional conventions and agreements.

.12 The Meeting reviewed a preliminary overview of field monitoring reports submitted by parties in the period 1996-2003. This could be seen as a first step towards a substantive contribution to the "GMA-process", and in response to the 2002 WSSD Plan of Implementation. The Meeting noted that field monitoring activities were clearly under-reported and urged parties to submit such reports in 2005 to the Scientific Group as a matter of priority.

.13 The Meeting reviewed the wide range of possible partnership arrangements with other organizations (in addition to IMO and IAEA) with a particular emphasis on monitoring of the marine environment; coastal management; and technical co-operation and assistance. The Meeting noted the progress with, and opportunities for, collaborative arrangements and therefore requested the Bureau to conclude the draft collaborative arrangements with UNEP and IOI as a first priority. This should be followed by arrangements with IOC, ECPP and, possibly FAO.

.14 The Meeting approved a new structure for the Long-term Programme for the Convention which described, in a more clear and transparent fashion, the work to be carried out under the Convention for the period 2005 to 2007. The immediate priority of the Programme was to promote the effective implementation of the Convention and the early entry into force of the Protocol.

.15 Finally, it was agreed that the 28th session of the Scientific Group be held from 23 to 27 May 2005, and the 27th Consultative Meeting from 24 to 28 October 2005. A one-day seminar to bring together experts in CO_2 sequestration technology and members of the Scientific Group and hosted by the Government of the United Kingdom is tentatively planned for Friday, 20 May 2005.

1 INTRODUCTION

1.1 The 26th Consultative Meeting of Contracting Parties to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, 1972 (London Convention 1972), convened in accordance with Article XIV(3)(a) of the Convention, was held at IMO Headquarters, London, from 1 – 5 November 2004, under the chairmanship of Mr. J. Karau (Canada). Mr. V. Escobar Paredes (Spain) was First Vice-Chairman and Mr. M. S. Hosseini (Iran) Second Vice-Chairman of the Meeting.

1.2 The Meeting was attended by delegations from the following 34 Contracting Parties to the London Convention 1972:

ARGENTINA
AUSTRALIA
BELGIUM
BRAZIL
CANADA
CHILE
CHINA
CYPRUS
DEMOCRATIC REPUBLIC OF THE CONGO
DENMARK
EGYPT
FINLAND
FRANCE
GERMANY
GREECE
IRAN, ISLAMIC REPUBLIC OF
ITALY
JAPAN
MOROCCO
NETHERLANDS
NIGERIA
NORWAY
PANAMA
PERU
PHILIPPINES
POLAND
REPUBLIC OF KOREA
RUSSIAN FEDERATION
SOUTH AFRICA
SPAIN
SWEDEN
UNITED KINGDOM
UNITED STATES
VANUATU

1.3 A representative from the following Associate Member of IMO attended the Meeting:

HONG KONG, CHINA

1.4 Observers from the following 12 States that are not Contracting Parties to the London Convention 1972 attended the Meeting:

BAHAMAS
BANGLADESH
COLOMBIA
ECUADOR
INDONESIA
LEBANON
LIBERIA
MARSHALL ISLANDS
SINGAPORE
TURKEY
URUGUAY
VENEZUELA

1.5 A representative from the INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA) attended the Meeting.

1.6 Observers from the following two intergovernmental organizations attended the Meeting:

ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT/ INTERNATIONAL ENERGY AGENCY (OECD/IEA)
ENVIRONMENTAL CRIME PREVENTION PROGRAMME (ECPP)

1.7 Observers from the following seven international non-governmental organizations also attended the Meeting:

INTERNATIONAL NAVIGATION ASSOCIATION (PIANC)
INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS (IAPH)
FRIENDS OF THE EARTH INTERNATIONAL (FOEI)
THE WORLD CONSERVATION UNION (IUCN)
GREENPEACE INTERNATIONAL
INTERNATIONAL OCEAN INSTITUTE (IOI)
WORLD ORGANIZATION OF DREDGING ASSOCIATIONS (WODA)

Opening of the Meeting

1.8 In opening the proceedings, the Chairman welcomed all participants to the 26th Consultative Meeting.

Address of welcome

1.9 The Secretary-General of IMO, Mr. E. E. Mitropoulos, informed the Meeting that the recent accession of St Kitts and Nevis to the London Protocol brought the total of Contracting States to 21 of the required minimum of 26. Therefore, it would be possible, given the right conditions, for the London Protocol to enter into force in 2005 and he urged all Governments concerned to take the necessary steps to ratify or accede to the Protocol without further delay to achieve that goal.

1.10 He emphasized the importance of making progress during this session with the review of draft compliance procedures and mechanisms under Article 11 of the London Protocol, as well as the emergency procedures and criteria under its Article 8, as compliance was the cornerstone of implementing international agreements. Progress on these activities would also encourage those States that had not yet ratified or acceded to the Protocol, to do so.

1.11 Mr. Mitropoulos recalled that, in 2002, the World Summit on Sustainable Development (WSSD) set the world community the challenge of stimulating development, and thereby alleviating poverty, while at the same time adhering to the goal of the United Nations Framework Convention on Climate Change (UNFCCC) to stabilize greenhouse gas concentrations in the atmosphere. This was a formidable challenge, as stabilization of CO_2 concentrations in the atmosphere, at any level, may eventually require the near-elimination of CO_2 emissions. In this context it had been suggested that CO_2 capture and storage in geological formations might offer important possibilities for making further use of fossil fuels more compatible with climate change mitigation policies.

1.12 The London Protocol, as currently written, prohibited the disposal of CO_2 at sea and its storage in the seabed and the subsoil thereof. For the discussion at this Meeting on how the issue of CO_2 capture and storage under the London Convention and Protocol might be considered, Mr. Mitropoulos suggested that an in-depth, but at the same time pragmatic, analysis of how the

Protocol, as a global instrument, could contribute to this issue from the perspective of protecting the marine environment and thereby influence the wider debate on climate change mitigation policies. Many scientific, technical, legal and policy questions related to CO_2 mitigation were still unanswered but a clear signal from the Consultative Meeting and, in the future, from the Meeting of Contracting Parties to the Protocol would contribute to resolving some of these questions. As a result the London Protocol would be put "on the map" as a relevant and responsive international agreement.

1.13 Mr. Mitropoulos informed the Meeting that three weeks ago the Marine Environment Protection Committee (MEPC) reviewed a status report on the development of the regular process, under the United Nations, for global reporting and assessment of the state of the marine environment, in short the "GMA-process". While the Committee welcomed the initiative, in principle, and was supportive of its aims and goals, it considered that it was too early to give any firm views on the GMA-process itself, as many issues on the scope of the GMA-process, its modalities, timing and funding arrangements were yet to be resolved. Notwithstanding this, the Committee noted that the GMA-process could play an important role in bringing marine science to bear effectively on policy makers, improve inter-agency co-operation within the United Nations system on marine issues and help capacity-building efforts in developing countries. The Committee concluded that IMO had an important part to play in improving ocean management and, therefore, the Organization should call for a dialogue on the GMA-process working towards a common position on the modalities of establishing the GMA, including its scope and role *vis-à-vis* GESAMP. As the Committee and the Consultative Meeting were like-minded on this issue, Mr. Mitropoulos encouraged the Meeting to continue its preparations for a substantive contribution from the London Convention to the GMA-process.

1.14 Mr. Mitropoulos drew attention to the planned restructuring this week of the current "Updated Long-term Programme for the London Convention 1972 and the Promotion of the 1996 Protocol thereto (2003-2005)". A successful completion of this restructuring exercise would serve in demonstrating to the IMO Council the will of this Meeting to be efficient and effective, thus aiding the Council in its decisions as it embarked on the preparation of the IMO budget for the biennium 2006 to 2007. He recalled in this regard that the first Long-term Programme of 2001 had positively influenced the Council's decision for supporting London Convention activities in the biennium 2002 – 2003.

1.15 Mr. Mitropoulos informed the Meeting that when MEPC recently reviewed the Strategic Vision for the New GESAMP "Science for Sustainable Oceans" and the institutional arrangements for the New GESAMP, it had reiterated the position that GESAMP's work was very important and useful for IMO, in particular its role as an independent and impartial science adviser. However, the Committee did not formulate a conclusive opinion on the new strategic vision and direction for GESAMP since it needed more information and clarification on several issues. These included more transparent budget appropriations such as how an estimated shortfall of $400,000 annually could be covered beyond the current funding by the Sponsoring Agencies including IMO; and what plans there were in the event that such additional funding could not be secured. The Committee was not, therefore, in a position to recommend that the IMO Council provides additional funding for the new GESAMP while these questions remained unanswered. He invited the Meeting for its views on the New GESAMP.

Chairman's remarks

1.16 The Chairman thanked Mr. Mitropoulos for his welcome, his overview of the challenges for this Meeting and his endorsement of compliance as a cornerstone of implementing international agreements. He also thanked IMO for the continuous support it had given to the activities under the London Convention and for IMO's very positive contribution to governance of the oceans.

Adoption of the Agenda

1.17 The agenda for the Meeting (LC 26/1) as adopted, is shown in annex 1 to this report. It includes under each respective agenda item a list of documents prepared for consideration. The Meeting also agreed on a timetable for its work, as amended (LC 26/1/1, annex 2).

Participation of intergovernmental organizations and international non-governmental organizations

1.18 The Secretariat informed the Meeting that no new applications for observership status had been received in the intersessional period.

1.19 The Meeting agreed to invite United Nations organizations and inter-governmental organizations to the 27th Consultative Meeting and to intersessional meetings of its subsidiary bodies, as follows:

UNITED NATIONS
REGIONAL SEAS CONVENTIONS UNDER THE UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)
INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT (WORLD BANK)
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD)
EUROPEAN COMMISSION (EC)
INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES)
OSPAR COMMISSION
HELSINKI COMMISSION
PERMANENT COMMISSION FOR THE SOUTH PACIFIC (CPPS)
SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMME (SPREP)
ENVIRONMENTAL CRIME PREVENTION PROGRAMME (ECPP)

1.20 The Meeting at the conclusion of its session decided that the following international non-governmental organizations should be invited to the 27th Consultative Meeting and to intersessional meetings of its subsidiary bodies:

INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS (IAPH)
EUROPEAN CHEMICAL INDUSTRY COUNCIL (CEFIC)
GREENPEACE INTERNATIONAL
THE WORLD CONSERVATION UNION (IUCN)
INTERNATIONAL NAVIGATION ASSOCIATION (PIANC)
INTERNATIONAL ASSOCIATION OF OIL & GAS PRODUCERS (OGP)
ADVISORY COMMITTEE ON PROTECTION OF THE SEA (ACOPS)
WORLD ORGANIZATION OF DREDGING ASSOCIATIONS (WODA)
INTERNATIONAL OCEAN INSTITUTE (IOI)

2 STATUS OF THE LONDON CONVENTION 1972 AND OF THE 1996 PROTOCOL THERETO

The London Convention 1972 (London Convention)

2.1 The Consultative Meeting noted the report by the Secretary-General (LC 26/2) on the status of the London Convention 1972 and that to date eighty Governments had ratified or acceded to the Convention.

2.2 The Consultative Meeting also noted that the 1993 amendments to the Annexes to the Convention, regarding the prohibition of disposal at sea of radioactive wastes and other radioactive matter (resolution LC.51(16)), were not yet in force for the Russian Federation which, on 18 February 1994, had submitted a declaration of non-acceptance of these amendments. (See also chapter 8 of this report.)

2.3 The delegation of Argentina requested the Secretariat, prior to the conclusion of this Meeting, to publish and circulate the following corrections to the English and French versions of document LC 26/2, as follows:

.1 Annex 1, page 4 of the English version: In the declaration in which the United Kingdom seeks to extend ratification of the London Convention to the Malvinas, the expression *"Falkland Islands and Dependencies"* should be replaced by *"Falkland Islands (Malvinas) and Dependencies";*

.2 Annex 1, page 3 of the French version: In the same declaration the expression *"Iles Falkland et dépendances"* should be replaced by *"Iles Falkland (Malvinas) et dépendances"*; and

.3 In all versions of the document, immediately after the reference to the existence of a dispute concerning sovereignty over the Islas Malvinas, it should be added that *"the Government of Argentina has rejected this territorial extension"*. In August 1995, communications to this effect were addressed to the Governments of Mexico, Russian Federation, United Kingdom and the United States in their capacity as depositaries of the London Convention.

2.4 Having studied the English, French and Spanish language versions of document LC 26/2, the delegation of the United Kingdom made the observation that the wording referred to by the Argentinean delegation is, in all three language versions, exactly the same as that used in last year's document on the status of ratifications (document LC 25/2). The Secretariat had correctly followed the established practice of the Consultative Meeting on these matters. The delegation was, however, discussing this matter bilaterally with the Argentinean delegation and the Secretariat with the aim of finding a mutually acceptable solution.

The 1996 Protocol to the London Convention 1972 (London Protocol)

2.5 The Meeting welcomed the news that since the 25th Consultative Meeting, Egypt, France and St Kitts and Nevis had acceded to the London Protocol.

2.6 The Meeting noted that the following twenty-one States had ratified or acceded to the London Protocol: Angola, Australia, Canada, Denmark, Egypt, France, Georgia, Germany, Iceland, Ireland, New Zealand, Norway, South Africa, Spain, St. Kitts and Nevis, Sweden, Switzerland, Tonga, Trinidad and Tobago, United Kingdom and Vanuatu. Four of these States (Angola, Georgia, St. Kitts and Nevis, Trinidad and Tobago) were not Contracting Parties to the London Convention. The Meeting also noted that eighteen Contracting Parties to the Convention were signatories to the London Protocol (LC 26/2/1).

2.7 The Meeting further noted that the pace of new ratifications/accessions had been slow in recent years:

six in 2000,
three in 2001,
none in 2002,
two in 2003, and
to date three in 2004.

2.8 The Meeting acknowledged that planning activities in anticipation of the entry into force of the London Protocol would benefit from more up-to-date and reliable information from Contracting Parties and non-Contracting Parties regarding their intentions to ratify or accede to it (LC 26/2/2).

2.9 The delegations from Belgium, Brazil, China, Democratic Republic of the Congo, Finland, Greece, Iran, Italy, Japan, Netherlands, Nigeria, Republic of Korea, Russian Federation and the United States reported on their progress towards accession to, or ratification of, the London Protocol.

2.10 Several delegations estimated completion of this process during 2005, while others noted that accession to, or ratification of, the London Protocol was under consideration, but that no time estimate could be given.

2.11 In view of the above prognosis, the Consultative Meeting noted that entry into force of the London Protocol would be possible in 2005. If this were to become a reality, the first Meeting of Contracting Parties to the London Protocol might be convened as soon as possible.

3 PREPARATION FOR THE ENTRY INTO FORCE OF THE 1996 PROTOCOL

3.1 The Chairman recalled that the 24th Consultative Meeting had identified the timely need to prepare for the entry into force of the London Protocol and, in particular, to carry out activities or tasks as listed in the Long-term Programme (LC 24/17, annex 5, paragraph 5.2).

Development of compliance procedures and mechanisms under the Protocol

3.2 It was recalled that the 25th Consultative Meeting gave much attention to the identification of key elements to be included in the compliance procedures and mechanisms under Article 11 of the London Protocol, and in particular the roles and functions of the bodies associated with compliance matters, as shown in its report (LC 25/16, annex 2). It was further recalled that a Compliance Correspondence Group was established at that Meeting, under the co-leadership of the Netherlands and the United States, to develop an initial text including options for the compliance procedures and mechanisms under Article 11 of the London Protocol for consideration at this session.

3.3 The delegation of the United States, in its capacity as co-chair, introduced the report by the Compliance Correspondence Group (LC 26/3) and the associated document LC 26/3/1. It highlighted that the draft text of the London Protocol Compliance Procedures and Mechanisms, contained in annex 1 of document LC 26/3, reflected an 'initial text' of key elements for review by this Meeting and offered a building block for further development of the Article 11 procedures and mechanisms.

3.4 Key elements included institutional models, that is, an open-ended or limited membership compliance body; whether it should be established on a standing basis or as needed from time to time (*ad hoc*); and, the nature and roles of the various entities such as the Scientific Group, the compliance body and the Meeting of Contracting Parities to the Protocol.

3.5 The delegation of the United States, in seeking to have a fuller exchange of ideas on key framework issues on what the compliance procedures could look like, stressed that these should be open-ended, and as indicated in Article 11 of the Protocol, facilitative and transparent, collaborative, not to be adjudicatory and with cases to be dealt with preferably during a Meeting of Contracting Parties.

3.6 Some delegations, while agreeing that the procedures and mechanisms to assess compliance should be facilitative, transparent, collaborative and non-adjudicative, were of the view that the mechanism foreseen in Article 11 of the Protocol could best be achieved through a compliance group that was established as a standing body with a regionally-balanced and limited membership.

3.7 The Meeting expressed its appreciation for the work of the Compliance Correspondence Group and agreed that a pragmatic, simple, cost effective and co-operative approach to promoting compliance issues should be key features of procedures and mechanisms pursuant to Article 11. The compliance procedures and mechanisms should provide the Meeting of Contracting Parties with the best advice possible. The Meeting noted further that there was a divergence of views on a range of specifics including the institutional models for the compliance body, and role and nature of the various entities noted in document LC 26/3.

3.8 As a result, the Consultative Meeting agreed to reconvene the *ad hoc* Working Group on Reporting and Compliance and tasked it with the following terms of reference:

.1 identify the pros and cons of the institutional models proposed in document LC 26/3/1, that is, an open-ended *vs* limited membership compliance body; and whether it should be established on a standing basis or as needed from time to time (*ad hoc*);

.2 review the 'initial text' and if possible resolve text in square brackets; and

.3 submit a report to plenary on Thursday 4 November 2004.

Report of the *ad hoc* Working Group on Reporting and Compliance

3.9 The *ad hoc* Working Group on Reporting and Compliance met from 1 to 3 November 2004 under the chairmanship of Ms. Anne Daniel (Canada). Representatives from the following 16 Contracting Parties attended: Australia, Brazil, Canada, China, France, Germany, Iran, Italy, Japan, Netherlands, Nigeria, Republic of Korea, South Africa, Spain, United States and the United Kingdom. Observers from Liberia and the IAPH also attended (LC 26/WP.3).

Pros and cons of proposed institutional models

3.10 The Working Group, having noted the discussion in plenary, addressed the two institutional models: an open-ended or limited membership compliance body and established on either a standing or *ad hoc* basis. In preparing a listing of the pros and cons of the two models, the Working Group noted that the listing reflected views expressed by the plenary and members of the Working Group, but does not represent agreed conclusions. The listing is contained in annex 2 to this report.

3.11 The Working Group further agreed that no conclusions could be drawn at this time on which model would be the most appropriate.

3.12 The Working Group also discussed, but did not attempt to reach agreement on other institutional matters, including whether or not members of the compliance body must be government representatives.

Revised 'initial text'

3.13 The Working Group noted the discussion in plenary and the report of the Compliance Correspondence Group (LC 26/3 and LC 26/3/1) to further consider the draft 'initial text'.

3.14 The amended version of the initial text for compliance procedures and mechanisms is attached at annex 3 to this report and reflects discussions on the paragraphs 1.1 to 2.2.7; the chapeau of 5.1 and Section 6 of annex 2 contained in document LC 26/3. It was noted that the entire text was still subject to further discussion and change. Annex 4 to this report, entitled "Examples of elements that should serve as 'food for thought' for on-going discussions", was not discussed but is attached for future reference.

Action by the Consultative Meeting

3.15 The Consultative Meeting:

.1 approved in general the report of the *ad hoc* Working Group;

.2 agreed to refer the amended initial text for compliance procedures and mechanisms, and the associated materials for further review, to the first Meeting of Contracting Parties to the Protocol, or the 27th Consultative Meeting, whichever occurs first; and

.3 thanked Ms. Daniel and the members of the *ad hoc* Working Group for the excellent work done at this session.

Development of draft procedures and criteria for emergency situations

3.16 It was recalled that the 25th Consultative Meeting developed and approved as "work in progress" the "Draft Procedures and Criteria for Determining and Addressing Emergency Situations as referred to in Articles 8 and 18.1.6 of the 1996 Protocol", and had requested the Scientific Group to carry out a general review of these procedures and criteria and to report back to this Meeting.

3.17 It was further recalled that the Meeting had also agreed that the Draft Procedures and Criteria be reviewed intersessionally by all Contracting Parties and by the IMO Maritime Safety Committee, particularly with respect to risks to safety.

3.18 The Chairman of the Scientific Group (Mr Craig Vogt, United States), highlighted the following outcomes of the review of the draft procedures and criteria by the Scientific Group:

.1 the new section on action to implement Article 8.1 made the advice more comprehensive by showing what you need to do in *force majeure* cases[1];

.2 the "risk to other legitimate uses of the sea" had been added under the "risk to safety" in paragraph 4.1.1.3; and

.3 a reference to the Generic Guidelines had been included in paragraph 4.1.2, as well as mentioning "alternatives to disposal to be considered as a first priority".

3.19 The Secretariat informed the Meeting that Vanuatu and IAPH had provided intersessional comments concerning these draft procedures and criteria (LC 26/3/2).

3.20 Vanuatu concurred with the conclusion that there might be emergency situations that involve materials listed in Annex 1 to the London Protocol where a full and thorough waste assessment in accordance with Annex 2 to the Protocol may not be possible due to the urgency of a particular situation. It also offered an editorial comment to make the text more practicable.

3.21 The observer from IAPH questioned the logic of some of the steps in the flow chart shown in the draft procedure (LC/SG 27/15, annex 6) and suggested this might be resolved through an additional decision point.

3.22 The Secretariat further informed the Meeting that due to time constraints experienced at the seventy-eighth session of the IMO Maritime Safety Committee, the risks to safety in the draft procedures and criteria for emergency situations would now be considered at the seventy-ninth session of the Committee in December 2004.

3.23 As a result, the Meeting agreed to reconvene the Drafting Group on Emergency Procedures and tasked it to review the comments received on the draft procedures and criteria, which had been distributed for review after the 25th Consultative Meeting in 2003 (LC 25/16, annex 3).

Report of the Drafting Group on Emergency Procedures

3.24 The Drafting Group on Emergency Procedures met on Wednesday, 3 November 2004 under the chairmanship of Mrs. Suzanne Schwartz (United States) and was attended by representatives from Australia, France, Netherlands, United Kingdom, the United States and the observer from IAPH.

3.25 The Drafting Group reviewed the comments received from the Scientific Group, Vanuatu and IAPH and made some modifications to the draft procedures and criteria LC 26/WP.1).

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1 An annex with examples of questions for the administration responsible for dumping operations to put to the master in cases of *force majeure* was proposed by the Scientific Group but had not yet been developed.

Action by the Consultative Meeting

3.26 The Consultative Meeting:

.1 approved the revised text of the draft procedures and criteria and also agreed to include additional descriptive information in paragraph 2.3 to better identify the information to be reported, in *force majeure* situations, as suggested by Canada;

.2 instructed the Secretariat to submit the revised text to the IMO Maritime Safety Committee for consideration at its seventy-ninth session in December 2004; and

.3 agreed to review the text at its 27th session.

3.27 The Secretariat was also instructed to edit the text to ensure that the use of the terms "Secretariat" and "Organization" was consistent throughout the document.

3.28 The resulting "Draft Procedures and Criteria for Determining and Addressing Emergency Situations as referred to in Articles 8 and 18.1.6 of the 1996 Protocol", as revised, are shown in annex 5 to this report.

Draft budget for administration of the London Protocol in 2005

3.29 The Secretariat provided a budget estimate totalling £265,500 for administering the London Protocol in 2005. This figure was extrapolated from the appropriation in the IMO budget for 2004 and comprises the costs for personnel, meetings, office accommodation and general operation.

3.30 The Meeting took note of the budget estimate and confirmed that the costs for the administration of the Protocol would be shared for as long as both the London Convention and the Protocol would be in force. When the Protocol had fully replaced the Convention, all costs would be allocated to the Protocol.

4 COMPLIANCE ISSUES

Reporting procedure of observed dumping incidents

4.1 It was recalled that the "Reporting Procedure of observed dumping incidents which may be in violation of international ocean dumping treaties" was developed by the Consultative Meeting in the 2001-2002 period and that, in this connection, it was also agreed that the Secretariat should file the Incident Information Forms it received and present a compilation of them to each Consultative Meeting for appropriate consideration (LC 24/17, paragraphs 3.8 to 3.13 and annex 3).

4.2 The Secretariat informed the Meeting that the Reporting Procedure had been duly distributed on 1 August 2003 (LC.2/Circ.430) to national focal points for the London Convention and to MEPC national focal points inviting them to bring it to the attention of relevant administrations, institutions, enforcement agencies, networks of mariners, associations of pilots and airline pilots, etc., and that the Incident Information Forms were also made available on the London Convention Web-site. In spite of these efforts, no Information Reports had been received by the Secretariat (LC 26/4).

4.3 The Meeting highlighted a number of potential reasons for the lack of reporting, including:

.1 lack of awareness among national authorities and other relevant stakeholders of the existence of the reporting procedure, given that it was still quite new;

.2 confusion as to whether the reporting procedure falls under the London Convention or the London Protocol, which was not yet in force;

.3 language barriers that prevent reporting given that the forms were currently available on the Web-site only in English; and

.4 the need for a more user-friendly interface to facilitate web-based reporting.

4.4 In conclusion, the Meeting took note of the information provided on the matter and:

.1 requested the Secretariat to include the French and Spanish versions of the Incident Information Forms on the London Convention Web-site;

.2 noted the offer of assistance by the United States to assist the Secretariat in enhancing the London Convention Web-site in order to facilitate web-based submission of reports; and

.3 urged Contracting Parties to continue to promote the London Convention in their respective countries, drawing particular attention to the need for reporting of observed dumping incidents and to undertake, where possible, the translation of Incident Reporting Forms into their respective working languages, where applicable, to facilitate the submission of reports by national authorities.

The Short-term and Long-term Strategy to improve reporting under the London Convention

4.5 The Meeting was informed that the Scientific Group had developed the "Short-term and Long-term Strategy to improve reporting under the London Convention 1972", as shown in the Scientific Group's report (LC/SG 27/15, annex 7). The strategy included a number of specific recommendations of how the quality and level of reporting might be improved.

4.6 The Secretariat informed the Meeting of its initial efforts undertaken, subject to approval by the Meeting, towards implementation of the recommendations made by the Scientific Group, notably the development of an electronic reporting format with the assistance of the Belgian delegation and of a draft letter from the Chairman to the Ministers of Transport or Environment of Contracting Parties that have not reported.

4.7 Taking into account the work carried out by the Scientific Group and the Secretariat to date, the Meeting:

.1 approved the "Short-term and Long-term Strategy to improve reporting under the London Convention 1972", as amended, and as shown at annex 6 to this report;

.2 noted the work being undertaken by the Secretariat in collaboration with the Belgian delegation in developing an electronic form and urged the Secretariat to ensure a consistent and harmonized approach with other reporting systems (such as that developed under the OSPAR Convention, among others) to avoid duplication in reporting; and

.3 instructed the Secretariat to:

.1 finalize and circulate a letter from the Chairman to the appropriate Ministers of Contracting Parties that had not reported in the last five years, explaining the importance of reporting under the Convention, highlighting that reporting was a treaty obligation and inviting the Contracting Parties to indicate any problems they may be having in reporting. This letter should also be sent to the secretariats of relevant regional conventions irrespective of whether these agreements included provisions on dumping;

.2 develop a list, each year, of countries that had not reported for the past 5 years, and distribute this list to the next Consultative Meeting; and

.3 regularly contact the Secretariats of UNEP Regional Seas Programmes and other regional conventions and mechanisms to obtain any available reports or information on dumping.

4.8 The Secretariat informed the Meeting that, as a complementary action to the letter from the Chairman, it would continue to contact embassies in London and/or national focal points, as appropriate, of all Contracting Parties that did not report.

Compliance with the reporting requirements under Article VI(4) of the Convention

4.9 The Meeting noted the information presented by the Secretariat regarding the status of compliance with the reporting requirements under Article VI(4) of the London Convention (LC 26/INF.4). The Meeting was also informed that further notifications had been received, after issuance of the status report, as follows:

.1 Australia for its activities in the period 2001 to 2003;
.2 Denmark for its activities in the period 1997 to 2002;
.3 Poland for its activities in the period 1998 to 2003; and
.4 Germany, Monaco, New Zealand, Norway, Saint Vincent & the Grenadines and the United States for 2003.

4.10 The Meeting acknowledged that lack of reporting continued to present a challenge that should be addressed through promotion and outreach activities.

4.11 The Meeting instructed the Secretariat to present a first draft of compilation reports covering 2001 and 2002 for consideration by the 28th meeting of the Scientific Group in May 2005.

4.12 All Contracting Parties whose reports were still outstanding for the years 2001 and 2002 were urged to submit these as soon as possible, and **not later than 1 February 2005**.

5 CONSIDERATION OF THE REPORT OF THE SCIENTIFIC GROUP

5.1 The Chairman of the Scientific Group, Mr. Craig Vogt (United States), provided an overview of the main outcome of the 27th meeting of the Scientific Group, which was held from 3 to 7 May 2004 in Mombasa, Kenya following the IMO/UNEP/NEPAD Workshop on Marine Pollution Prevention and Environmental Management in Ports in Eastern Africa held from 26 to 30 April 2004. The Chairman drew the attention of the Meeting to the actions to be considered as shown in document LC 26/5. In conjunction with the Scientific Group presentation, the delegation from Canada provided an overview of the "Guidelines for the sampling and analysis of dredged material for disposal at sea" (see LC 26/5, paragraph 3.1).

Action by the Consultative Meeting

5.2 The Meeting adopted the Guidelines for the sampling and analysis of dredged material and revised the title as "Guidelines for the sampling and analysis of dredged material *intended* for disposal at sea". The text of these Guidelines is shown in annex 7 to this report.

5.3 The Meeting further noted the Scientific Group's wish to publish the aforementioned Guidelines and that it had requested the Secretariat to explore options for publication, including the preparation of a CD-ROM version in combination with printing a limited number of hard copies, the price to be charged, as well as a review by a technical editor prior to publication.

5.4 The Secretariat informed the Meeting that these options were (1) digital printing; (2) offset printing at a price of £15.00 per copy; and (3) CD-ROM also at £15.00 per copy inclusive of packaging and posting.

5.5 Having considered the three options, and after consultation with the IMO Publishing Service, the Meeting agreed that the aforementioned Guidelines should be prepared as an IMO publication, and at the same time, added to the London Convention Web-site as a read-only, non-printable and non-downloadable file.

5.6 The Meeting endorsed the use of the overview report on national action levels for dredged materials developed by the Contracting Parties to the OSPAR Convention as the basis for an inventory of action levels for analysis as identified under the programme of the Working Group on Guidance for the Development of Action Lists and Action Levels (LC/SG 27/15, paragraph 2.14).

5.7 The Meeting endorsed the Group's intention to consider the potential for common approaches to the development of Action Levels in the future, and approved the Terms of Reference of the Working Group on Guidance for the development of Action Lists and Action Levels and related organizational arrangements (LC/SG 27/15, paragraphs 2.14 and 2.18).

5.8 The Meeting noted the progress report of the Working Group on Spoilt Cargoes entitled: "Points for consideration when amending the draft advice on management of spoilt cargoes". The revised guidance is scheduled for adoption by the 27th Consultative Meeting in 2005 and subsequent dissemination to the maritime community. (See also chapter 6 of this report.)

5.9 The Meeting endorsed the Group's appeal to Contracting Parties to submit documents on their experiences gained with practical implementation of the "Specific Guidelines" on the application of biological assessment techniques, risk assessment procedures in waste management and the development of alternative waste management options, for consideration by the Scientific Group at its 28th session (LC/SG 27/15, paragraphs 2.53 to 2.66).

5.10 The Meeting noted that PIANC would make the following submissions to future sessions of the Scientific Group: 2005 – "Report on risk-based approaches for dredged material management" and "General biological assessment techniques for dredged materials management"; and 2006 – "Beneficial use of dredged material, approaches and constraints" and "Dredge management practices and methodologies to minimize environmental impact".

5.11 The Meeting also noted the information provided by the United Kingdom on their placement activities, Italy's report on the inspection of a ship wreck in the Mediterranean Sea and information that the United States is developing guidelines for the cleaning of decommissioned vessels (LC/SG 27/15, paragraphs 6.4 to 6.8).

5.12 The Meeting noted that the Scientific Group reviewed a number of monitoring reports/activities as reflected in its report (LC/SG 27/15, paragraphs 7.2 to 7.18).

5.13 The Meeting further noted the discussion in the Group on the progress with the global reporting and assessment of the state of the marine environment (GMA-process), including options to make a substantive contribution to this process once it is formally established (See also chapter 10 of this report.)

5.14 The Meeting requested Contracting Parties to prepare submissions to further the work of the Scientific Group at its 28th session, as follows:

- .1 documents on the technical and scientific aspects of "placement" and artificial reefs;
- .2 reports on beneficial use and habitat remediation and enhancement;
- .3 monitoring and assessment;
- .4 reports on other relevant subjects; and
- .5 announcements concerning activities, symposia, guidelines, manuals, etc., relevant to the work of the Scientific Group.

5.15 The Meeting observed that the discussions on "Science Day" were beneficial and reaffirmed that this activity should continue at future sessions of the Scientific Group. The Chairman of the Scientific Group confirmed that the topic for Science Day 2005 would be "placement activities", and encouraged Contracting Parties to report to the Group on their activities relating to the topic (LC/SG 27/15, chapter 10).

5.16 The Meeting noted the marine environmental issues faced by Somalia, particularly the suspected dumping of toxic and hazardous materials as reported by the observer from Somalia at the 27th session of the Scientific Group (LC/SG 27/15, paragraphs 4.13 to 4.19).

5.17 In the ensuing discussion, the Secretariat informed the Meeting that UNEP would deploy a fact-finding mission to Somalia and would investigate other activities under the Nairobi Convention and other fora.

5.18 The Meeting agreed that follow-up by the London Convention to the Somalia situation would benefit from the fact-finding mission and co-ordination with UNEP and the Nairobi Convention Secretariat.

5.19 The Meeting adopted the report of the 27th session of the Scientific Group.

5.20 The Meeting noted with appreciation that the Scientific Group unanimously re-elected Mr. Craig Vogt (United States) as Chairman, and Mr. Chris Vivian (United Kingdom) and Mr. Gi-Hoon Hong (Republic of Korea) as Vice-Chairmen for the intersessional period and for the 28th Meeting of the Scientific Group.

How can the London Convention and Protocol accommodate the needs of developing countries?

5.21 In presenting document LC 26/5/1, the Chairman of the Scientific Group, Mr. Craig Vogt (United States), informed the Meeting that at the IMO/UNEP/NEPAD Workshop on Marine Pollution Prevention and Environmental Management in Ports in Eastern Africa held in April 2004 in Mombasa, Kenya, participating developing countries had explicitly stated that, given their concerns about their capacity to implement the Waste Assessment Guidelines, they had the perception that the London Convention and Protocol were for developed countries.

5.22 Mr. Vogt indicated that the perception that the frameworks of the London Convention and the Protocol were not suitable for developing countries should be seen in the context of several challenges that may reflect potential barriers to implementation of the Convention and the adaptation of the Protocol, such as:

.1 absence of national legislation for the prevention of disposal at sea;
.2 lack of infrastructure;
.3 lack of waste management strategies incorporating and integrating health and environmental concerns, public perceptions, financial costs and technological constraints;
.4 lack of compliance;
.5 insufficient funding;
.6 lack of qualified personnel;
.7 need for capacity building; and
.8 lack of enforcement and prosecution.

5.23 Under the London Convention and the Protocol, mechanisms such as technical co-operation and assistance, including a transitional period of five years to meet specified provisions of the Protocol prior to its entry into force or within five years after entry into force, can effectively assist countries in implementing the Convention or joining the Protocol. Possible next steps listed in document LC 26/5/1 addressed the challenges faced by developing countries.

5.24 In the ensuing discussion, the Meeting noted that a number of delegations concurred with the analysis of the Chairman of the Scientific Group recognized that although the issues were tied in with the broader question of economics and lack of capacity with no immediate fixed solutions, they could be useful reminders on what can and cannot be done. The Meeting, therefore, agreed to insert these steps into the next version of the Long-term Programme (See also chapters 9 and 12 of this report.)

6 INTERPRETATION OF THE LONDON CONVENTION 1972

Interpretation of "industrial waste"

6.1 The Meeting recalled that pursuant to paragraph 11 of Annex I to the London Convention, sea disposal of industrial waste had been prohibited since 1 January 1996. At its last five sessions, the Consultative Meeting had considered the issue of policy interpretations of the definition of "industrial waste", and conditions under which materials exempted from that definition as listed in Annex I, paragraphs 11(a) to (f) of the Convention, would be eligible for disposal at sea. No consensus had yet been reached regarding guidance on this key definition under the Convention. Japan had submitted several documents to the Consultative Meeting and the Scientific Group concerning disposal of bauxite residues as well as its conduct of a related Environmental Impact Assessment (2002 - 2004).

6.2 The 24th Consultative Meeting had requested the Scientific Group to review:

.1 the criteria for exemptions to the definition of "industrial waste" and for allocation of wastes on the reverse list; and

.2 the adequacy of the Specific Guidelines for Assessment of Inert, Inorganic Geological Material (LC 24/17, paragraph 8.12).

6.3 The 25th Consultative Meeting had endorsed the Group's intention to develop "pre-screening" criteria to assess both inert, inorganic geological material and organic material of natural origin.

6.4 The Meeting noted the progress of the Scientific Group in developing Pre-screening Criteria for Inert, Inorganic Geological Material and endorsed its recommendation to continue this review during the 28th session of the Group in May 2005.

6.5 The Meeting requested the Scientific Group to report its recommendations on this issue to the 27th Consultative Meeting.

6.6 The Meeting also endorsed the Group's conclusion that "pre-screening criteria" would not be necessary for the "Specific Guidelines for Assessment of Organic Material of Natural Origin", as well as the inclusion of the following reference to genetically modified materials in Chapter 4 (Chemical, Physical and Biological Properties), paragraph 4.1, of these Guidelines:

> "If the organic material being proposed for disposal at sea contains genetically modified material, this factor should be considered in evaluating its chemical, physical and biological properties".

Exemption for "normal operations" by vessels under Article III of the Convention

6.7 The Meeting examined the scope of the exemption for normal operations by vessels under Article III(1)(b)(i) of the Convention and noted that the Scientific Group, at its 27th session, had expressed concern with regard to the broad interpretation of the "cargo-associated wastes", which could be discharged by ships under MARPOL 73/78, Annex V (garbage). To address this concern, the Group had agreed on the following action:

.1 as the magnitude of the problem was not yet known, the Secretariat was requested to contact its counterpart in IMO dealing with implementation of MARPOL 73/78 and investigate what was known about the types and volumes of cargo-associated wastes being discharged, the reporting and control mechanisms, and the action taken by MEPC in this regard during recent years (including the amendments in March 2004 by MEPC 51 to the Garbage Record Book) with a view to preparing a submission to this Consultative Meeting;

.2 from the London Protocol perspective the reverse list should be taken as a point of departure and compared with what was discharged as cargo-associated wastes under MARPOL 73/78, Annex V; and

.3 the Consultative Meeting should, in an effort to reduce or eliminate the discharge of cargo-associated wastes at sea:

 .1 reconsider what constituted discharges permitted under the exemption for normal operation of a ship under Article III(1)(b)(i) of the Convention; and

 .2 develop a plan of action for bringing this matter to the attention of MEPC with the aim of finding a solution for this issue (LC/SG 27/15, paragraph 9.13).

6.8 In introducing its document LC 26/6/2, the delegation of Canada proposed to focus on the exemption for normal operations of vessels under Article III(1)(b)(i) of the London Convention as a whole, rather than solely cargo-associated wastes. The delegation raised the question whether the blanket exemption of normal operations continues to reflect modern capabilities for waste management and pollution prevention. Given the progress over the last few decades, would it remain appropriate for the Convention to maintain a general exclusion for normal operations, or was it time that closer harmonization with the standards set by MARPOL 73/78 be undertaken? As activity on the high seas increased and the level of concern over cumulative damage from what was traditionally seen as incidental pollution also increased, the Convention, with refined exclusions, could provide a stronger support to MARPOL 73/78 and better meet its objective. Clarity on the scope of the exemption for all normal operations of vessels would also improve the understanding of what the public should report under the 2002 "Reporting procedure of observed dumping incidents which may be in violation of international ocean dumping treaties (London Convention and Protocol)" (LC 24/17, annex 3) (See also chapter 4 of this report).

6.9 The Secretariat had prepared document LC 26/11/1 on co-operation with MEPC on the proper management of vessel generated wastes at the request of the Scientific Group (LC/SG 27/15, paragraph 9.13). It reported on the contact between the Secretariat and its counterpart in IMO dealing with the MARPOL 73/78 Convention. It provided an overview of the regulations under MARPOL 73/78, Annex V, concerning the discharge at sea of cargo-associated wastes, the incentives to minimize these wastes, the reporting, compliance and enforcement requirements, and the recent action taken by the MEPC to improve the recording arrangements of the actual discharges of garbage. The document focused on a description from the regulatory and administrative perspective, but it should be noted that there had been little feedback on how the MARPOL 73/78 provisions were interpreted in practice.

6.10 The Meeting agreed that:

.1 the focus of attention should be the exemption for normal operations of vessels under Article III(1)(b)(i) of the London Convention as a whole;

.2 there were grounds for concern, but that more investigation was required to substantiate this concern;

.3 MEPC should be approached with the aim to facilitate collaborative efforts to clarify the boundaries between MARPOL 73/78 and the London Convention and Protocol, as well as to assist domestic regulatory and enforcement agencies in the implementation of their responsibilities; and

.4 Contracting Parties to the London Convention, being Parties to MARPOL 73/78, should identify examples or cases which they regarded as "dumping" instead of normal operations of vessels and submit these both to MEPC 53 (July 2005) and the 28th meeting of the Scientific Group (May 2005).

Guidance on "placement of matter for a purpose other than the mere disposal thereof"

6.11 It was recalled that the Consultative Meeting, at its last four sessions, had not reached agreement on guidance concerning "placement of matter for a purpose other than the mere disposal thereof" (Article III(1)(b)(ii) of the Convention) or on the issue as to whether the London Convention covers "placement" activities. However, the Meeting had developed the following elements of policy guidance:

.1 placement should not be used as an excuse for disposal at sea of waste materials;
.2 placement should not be contrary to the aims of the Convention;
.3 information of the placement activities by Contracting Parties should be provided to the Secretariat, as available; and
.4 materials used for "placement" activities should be assessed in accordance with the relevant waste-specific guidelines.

6.12 The 24th Consultative Meeting had agreed to continue using this policy guidance and that voluntary reporting by Contracting Parties on "placement" activities should focus on instances where waste materials were used.

6.13 To possibly help strengthen the existing advice on "placement", the 25th Consultative Meeting requested the Scientific Group to consider, at its 27th session, technical and scientific information related to artificial reef development and placement activities in view of specific concerns that placement should not be contrary to the aims of the Convention, or the assessment tools in the Specific Guidelines. In addition, the Meeting suggested the evaluation of possible beneficial uses such as the potential enhancement of ecological communities and biodiversity.

6.14 The Meeting noted that no documents had been submitted to enable the Scientific Group to conduct this review but that it had received information provided by the United Kingdom on their placement activities, Italy's report on the inspection of a ship wreck in the Mediterranean Sea and information from the United States on the development of guidelines for the cleaning of decommissioned vessels.

6.15 The Meeting agreed that, in light of the recommendation of the Chairman of the Scientific Group to focus on "placement activities" during "Science Day 2005", this item should be kept on the agenda for the 27th Consultative Meeting. If no substantive submissions were made to that session, the item would be deleted for the 28th Consultative Meeting.

Position of wrecks of sunken vessels under Article III of the Convention

6.16 It was recalled that the interpretation of Article III with respect to wrecks of sunken vessels had been raised in relation to the partial removal of the cargo from the wreck of the chemical tanker MV **Ievoli Sun** and had been brought to the attention of the 23rd Consultative Meeting in 2001. Some delegations took the position that wrecks fixed on the seabed, which can no longer be regarded as vessels (or aircraft), would not fall under the scope of Article III and that the Convention was not relevant to discharges from wrecks. Other delegations had questioned this conclusion and stated that further clarification was required.

6.17 The 24th Consultative Meeting had continued the discussion on this issue and agreed that sound environmental management of wrecks and cargoes was a common concern. In order to arrive at an informed decision, the Secretariat was requested to prepare together with the IMO Legal Office an overview of the environmental management issues relevant to the London Convention and Protocol. The Meeting would also consider further reports on this issue, as submitted by Contracting Parties. As no submissions had been submitted to the 25th Consultative Meeting, further consideration was postponed.

6.18 The Secretariat introduced an overview of the key provisions of the Draft IMO Wreck Removal Convention (DWRC)[2] (LC 26/6). Under the DWRC, coastal States at risk would be entitled to require the registered owner to remove a wreck posing a danger to navigation or hazard to the marine environment and, in its Article 7, listed 15 criteria, which could be used for determining whether a wreck posed a hazard.

6.19 Under the DWRC wrecks were the result of maritime casualties whereas dumping of a vessel under the London Convention/Protocol was a planned and controlled activity. The criteria developed in the "Specific Guidelines for Assessment of Vessels", completed in 2001, had been designed to consider all options to prevent pollution and, if dumping was the chosen option it would follow the requirements of the Convention and Protocol. It was concluded that the main components of these Guidelines, as found in Chapter 4 (Waste Characterization: chemical/physical properties) and Chapter 6 (Dump-site selection), might be turned around and applied to support a determination of "hazard" under Article 7 of the DWRC.

6.20 The Meeting took note of this document and thanked the Secretariat for preparing it.

6.21 As no substantive documents had been submitted by Contracting Parties that could be used for an informed decision to clarify whether or not wrecks of sunken vessels fall under the scope of Article III of the Convention, the Meeting agreed to delete this item from the future agenda. It was however recognized that the item could be reintroduced if supporting documentation was provided.

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[2] The completion of the DWRC was further delayed at the eighty-ninth session of the IMO Legal Committee (25-29 October 2004), so that a diplomatic conference to consider and adopt it, might not be held before 2006.

Handling of a vessel sunk off the Netherlands coast

6.22 The delegation of the Netherlands provided background information regarding the handling of the wreck of the MV **Assi Euro Link** (LC 26/INF.2). This document was prepared in response to a request of Greenpeace International at the 27th meeting of the Scientific Group and contained background information on the decisions in the Netherlands regarding the wreck of the MV **Assi Euro Link**; a brief explanation of the Netherlands policy on wreck removal; and the lessons learned from the maritime accident that resulted in the sinking of this vessel.

6.23 Fifteen months after the incident in January 2003 which led to the sinking of the MV **Assi Euro Link***,* the wreck had been allowed to sink a number of metres in the seabed so as to eliminate any hazard to navigation. Extensive efforts had been made to remove the remaining oil in the ship and the risk to the environment was thus minimized. The wreck did not contain any cargo except for the normal inventory of a ship. For each new wreck in the Netherlands' EEZ a separate evaluation is made whether it should be removed. The aim is to remove as many wrecks as possible. In the case of the MV **Assi Euro Link**, especially in view of the high cost involved with removal, the Netherlands Government had chosen a different solution to address the hazard to navigation while minimizing environmental harm.

6.24 The DWRC was aimed at improving intervention powers in waters beyond the territorial sea, as well as the right of direct access to the insurers for costs related to wreck removal operations. For these reasons the delegation of the Netherlands wished to see the DWRC to be completed and entered into force as soon as possible. This view was supported by Germany and Vanuatu.

6.25 Since the aims of the DWRC and the London Convention and its Protocol converged in this regard, the Meeting encouraged IMO to make every effort to conclude the negotiations on the DWRC as soon as possible.

Recovery of oil from the wreck of the oil tanker MV Prestige off the coast of Spain

6.26 The delegation of Spain informed the Meeting about the recent and successful completion of operations to remove the cargo oil from the wreck of the oil tanker MV **Prestige**. The MV **Prestige** broke in two pieces in heavy seas and sank on 19 November 2002 to a depth of 4000 metres, 150 miles off the coast of Galicia, Spain, while carrying 77,000 tonnes of heavy fuel oil. As a result, major oil slicks emerged polluting the coasts of Portugal, Spain and France.

6.27 In early 2003, leaks from the vessel were stopped using a mini submarine. Recovery of the remaining oil in the wreck was carried out in three phases, as follows:

.1 a measurement of the quantities of fuel oil was conducted in the summer of 2003 using ROVs. Sealing operations of the leaks were carried out, as necessary;

.2 the remaining oil was recovered using specially constructed "shuttle bags". In this way 13,600 tonnes of oil were recovered in the period of May to September 2004, representing 95% of the total estimated quantity of oil in the wreck; and

.3 a bioremediation technique was used to neutralize the potential danger to the marine environment of the non recovered fuel oils.

6.28 More information on the background of the incident and the technical innovations used for the monitoring and recovery operations can be obtained by visiting the following websites:

http://www.mfom.es

http://www.repsolypf.com/eng/todosobrerepsolypf/saladeprensa/prestige/prestige.asp?PaginaID=53565 (in English)

http://www.repsolypf.com/esp/todosobrerepsolypf/saladeprensa/prestige/prestige.asp?PaginaID=53565 (in Spanish)

CO_2 sequestration

6.29 It was recalled that in 1999 the 21st Consultative Meeting considered sea disposal of CO_2, but that there was no consensus whether or not ocean disposal of CO_2 from fossil fuelled power production would be considered an industrial waste. It was agreed that the Scientific Group should continue to keep a watching brief on the relevant research being done in this field. The Consultative Meeting would consider the legal, political and institutional dimensions of a potential proposal to amend the London Convention or Protocol at a later stage (LC 21/13, paragraphs 5.26 – 5.27).

6.30 The delegation of the United Kingdom stated that the global environment was at risk from the effects of increasing concentrations of CO_2 in the atmosphere and that the time had come when the Consultative Meeting should address this issue. The delegation introduced document LC 26/6/1, which briefly described the issue of carbon capture and sequestration in the marine environment and the discussions in other fora. The delegation suggested establishing a working group to consider and recommend what specific issues if any should be considered in relation to CO_2 sequestration including for example:

.1 the urgent need for a view on the consistency with the London Convention and Protocol of CO_2 sequestration in the marine environment;

.2 whether the London Convention/Protocol had a role in relation to other work being carried out on CO_2 sequestration for example in partnership with the UNFCCC Convention and/or the Carbon Sequestration Leadership Forum (CSLF); and

.3 the need, if any, to regulate CO_2 under a clear legal regime consistent with the aims of the Convention and Protocol, in the light of a full assessment of the environmental risks.

6.31 The delegation concluded that both the London Convention and Protocol were well positioned to play an important role in ensuring that any development of CO_2 sequestration in the marine environment was within a clear legal framework that permits climate change mitigation. To do so it must set out a view on the consistency with the London Convention/Protocol of CO_2 sequestration in the marine environment and consider what work, if any, needed to be done subsequently. In addition the London Convention should reflect on the IPCC Special Report on Carbon Dioxide Capture and Storage[3] and whether subsequent work would be necessary.

[3] This report will be available only in September 2005.

6.32 Several delegations expressed the view that any action on sequestration of CO_2 should not detract from the urgent need to reduce reliance on fossil fuels.

6.33 The delegation of Germany stated that it was particularly concerned about any releases of CO_2 to the water column since this may result in the acidification of seawater. It also noted that storage of CO_2 in geological structures is currently being examined in various international fora and that according to these studies geological storage would only make sense if the integrity of such storage was guaranteed for more than 1,000 years.

6.34 The delegation of China expressed concern about the capabilities of developing countries in participating in such discussions in the absence of technical expertise required. It further called for the Meeting to make concrete arrangements to facilitate and ensure the involvement of developing countries in relevant discussions and processes.

6.35 The Meeting agreed that the issue of CO_2 sequestration should be included in its work programme and also to confine its discussion on this issue, for the time being, to sequestration of CO_2 in geological structures. In focusing on the question how to organize an in-depth discussion in the coming year, the Meeting agreed to establish a Working Group on CO_2 Sequestration in Geological Structures, under the lead of the United Kingdom, with the following terms of reference:

.1 identify the key elements that may need to be considered intersessionally in relation to CO_2 sequestration in geological structures[4] so as to enable the Consultative Meeting to examine the consistency with both the Convention and Protocol of CO_2 sequestration, including:

   .1 form a view on the consistency with the London Convention/Protocol of CO_2 sequestration in geological structures *(legal issues)*;

   .2 make an initial assessment of the environmental risks and benefits of CO_2 sequestration in geological structures (including identification of gaps in knowledge) *(scientific issues)*;

   .3 consider the need for new or additional regulation of CO_2 sequestration in geological structures in relation to the Convention and Protocol *(follow-on work)*; and

   .4 consider whether the London Convention/Protocol has a role in relation to other work being carried out on CO_2 sequestration, for example, in relation to UNFCCC/CSLF/IPCC *(Role of London Convention/Protocol in work of other fora)*.

.2 identify tasks[5], associated with the development of a view for intersessional work; and

.3 provide a written report to plenary on Thursday, 4 November 2004.

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[4] Other issues related to CO_2 sequestration may be dealt with at a later stage.

[5] The possible role and tasks of the Scientific Group on this issue should be defined.

Report of the Working Group on CO_2 Sequestration in Geological Structures

6.36 The Chairman of the Working Group on CO_2 Sequestration in Geological Structures, Mr. John Roberts (United Kingdom), informed the Meeting of the results of the Working Group as set out in the paragraphs 6.37 to 6.46 below.

TOR item 1.1 (Legal issues)

6.37 The Working Group proposed that the Consultative Meeting establish an intersessional correspondence group on CO_2 sequestration in geological structures to consider the legal issues. The delegation of the United Kingdom offered to convene this correspondence group[6].

6.38 The correspondence group should undertake the work in three phases:

.1 elaboration of the questions to be addressed. The United Kingdom would circulate an initial list as a basis for discussion (target December 2004);

.2 preparation of a short, factual description of the options for geological sequestration (e.g., what geological structures might be used; what methods might be used for transporting and injecting CO_2; what might be the origins of the CO_2) and a definition of key terms, so that the legal questions could be addressed on the basis of a common understanding of the technology (target February 2005); and

.3 elaboration of views of individual Contracting Parties on each of the legal issues identified for resolution. Where views converged, this should be reported but, on issues where views diverged, the alternative views should be set out as a basis for further debate (target July 2005).

6.39 The work should be reported to the 27th Consultative Meeting in 2005 so that it could review the progress and give guidance on what further work should be done to establish a consensus.

TOR item 1.2: (Scientific issues)

6.40 The Working Group recommended that the Scientific Group should make an assessment of the potential environmental risks and benefits for the marine environment of CO_2 sequestration in geological structures within the scope of the Convention and Protocol. The Group should begin with an initial assessment and also the identification of gaps in knowledge.

6.41 The Working Group recognized that the Scientific Group could not undertake a wide ranging review of the possible environmental benefits of CO_2 sequestration and also that many of these issues were being examined in other Conventions and mechanisms, however, they requested that the Scientific Group should obtain the best information possible on which to reach a view on the implications of this technology for the marine environment.

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6 Mr. John Roberts, Head, Marine & Waterways Division, Department for Environment, Food and Rural Affairs, Ashdown House, 123 Victoria Street, London SW1E 6ED, United Kingdom, Tel: +44-20-70828192, Fax: +44-20-7082 8195, E-mail: John.Roberts@defra.gsi.gov.uk.

6.42 The Working Group noted that the Scientific Group already had a heavy workload, but expressed the view that work in this area was a priority and therefore hoped that an initial discussion of these issues would be included at the 28th session of the Group.

6.43 The Working Group recommended that the Scientific Group begin this initial work by establishing a correspondence group to gather initial information. The Working Group noted that there have been a number of workshops and seminars which have already generated a great deal of material and the Scientific Group should draw on this. The Secretariat should prepare an invitation for the correspondence group.

6.44 The Working Group welcomed the offer of the United Kingdom to organize a seminar to bring together experts in CO_2 sequestration technology and members of the Scientific Group, immediately prior to the next meeting of the Scientific Group. A number of Contracting Parties indicated that they had relevant experience of pilot projects and studies that could be used.

TOR item 1.3: (Follow-on work)

6.45 The Working Group agreed that, depending on the outcome of the technical and legal issues outlined above, no action should be taken during this intersessional period.

TOR item 1.4: (Role of London Convention/Protocol in work of other fora)

6.46 Although this issue should be addressed more fully once progress had been made on other issues, the Working Group recommended that:

.1 the Secretary should now contact the Secretariats of other relevant conventions and mechanisms, to ensure that they are aware of the London Convention/Protocol, and to alert them to the work being undertaken on CO_2 sequestration in geological structures within the scope of the Convention/Protocol and request that they share any relevant information. The Secretary should report back on responses received; and

.2 Contracting Parties should be encouraged to ensure effective co-ordination within their own Governments with respect to marine protection issues relating to CO_2 sequestration.

Action by the Consultative Meeting

6.47 The Meeting endorsed all the abovementioned recommendations of the Working Group on CO_2 Sequestration in Geological Structures.

6.48 The Meeting also stressed the importance that legal and technical/scientific expertise is included in delegations when the issue of CO_2 sequestration is discussed further at the 27th Consultative Meeting.

Review of advice on management of spoilt cargoes

6.49 It was recalled that when the 25th Consultative Meeting reviewed the report of the Scientific Group with regard to advice on spoilt cargo management, it agreed that the issue deserved further attention and that the advice should be made more explicit as to what should be allowed in relation to *emergency disposal* under Article V(2) and *force majeure* disposal under Article V(1) of the Convention. The Meeting then requested the Scientific Group to consider revisions to the Specific Guidelines for Assessment of: (1) Inert, Inorganic Geological Material; (2) Organic Material of Natural Origin; and (3) Bulky Items, primarily comprising Iron, Steel, etc. If policy interpretations emerged, these should be referred back to the Consultative Meeting.

6.50 The work of the Scientific Group, at its 27th session, resulted in a progress report entitled: "Points for consideration when amending the draft advice on management of spoilt cargoes" (LC/SG 27/15, annex 5). Three legal and policy issues were raised in that discussion for consideration at this Meeting. These points were as follows:

.1 Legal question: Who will be the permitting authority: is it the coastal state? Or is it the flag State administration?

.2 Legal Question: Where is the difference/line between spoilt cargo and cargo residues/cargo wastes? (MARPOL Annex V), operational discharges?

.3 Policy question: How to deal with the current 17 examples of spoilt cargoes dumped at sea listed in the advice? They are factual, but may not in all cases be desired as examples.

6.51 The Meeting agreed to revisit these issues at the next Consultative Meeting.

6.52 The Secretariat informed the Meeting on the outcome of an investigation by the United Kingdom company, "Steamship Maritime Co. Ltd.", which had recently been contracted to carry out the dumping of a large cargo of spoilt bananas from a vessel in the Pacific Ocean near Ecuador under a permit issued by Liberia, as the flag State of the vessel concerned (LC 26/INF.5). Steamship Maritime had collected some statistics on the estimated yearly transport of bananas by ship, what would be reasonable assumptions on the percentage of rejected consignments of bananas due to spoilage and the associated quantities of plastic wrappings to be disposed of. It was estimated that 13 million tonnes of bananas were transported annually by ship, 60% of which were in containers. The 40% carried annually, by reefer vessels, represented about 5 million tonnes per year, including about 380,000 tonnes of cartons and plastic wrappings. Importers of bananas were extremely particular as to the quality of the product upon arrival at the discharge port and this led to a rejection rate in the order of 5%. This would represent 19,000 tonnes of packaging. Some of this quantity would be dealt with at the discharge port, but due to the high costs of land-based destruction facilities the greater portion might end up being dumped at sea. Fruit was only one sea-borne trade and a huge variety of other perishable products is likely to be disposed at sea without reference to the London Convention.

6.53 Steamship Maritime also indicated that from its perspective (1) the chances of a vessel operator being detected carrying out an unregulated dumping operation of spoilt cargo were extremely small; and (2) there were no fiscal penalties to operators who ignore the Convention requirements. The company suggested boosting compliance with the Convention by involving Port State Control in tracking the handling of spoilt cargoes through the existing paperwork on board which showed previous port discharge statistics, for instance, Bill of Lading, cargo receipts and outturn reports. In its view this would give a fiscal incentive for ship operators to comply, as in extreme cases delays to the vessel could occur that operators would seek to avoid at all costs.

6.54 The delegation of Vanuatu stated that Port State Control was only entitled to request statutory documents from a master and could not be involved in the tracking of previous cargoes of a vessel.

6.55 Several delegations called for an exploration of the scale and seriousness of disposal of spoilt cargoes and that this should be done in a broader context and not limited to perishable goods.

6.56 The delegation of Liberia mentioned it had issued a dumping permit on the spoilt cargoes as recorded in document LC 26/INF.5, although it is neither a Party to the London Convention, nor to the Protocol. The delegation expressed its astonishment that so few Contracting Parties had reported on disposal of spoilt cargoes.

6.57 The Meeting agreed that, with the aim of promoting good waste management practices:

.1 the Secretariat should contact IMO and MEPC about this issue;

.2 the Secretariat should also contact Steamship Maritime Co. Ltd. on any statistics it had on other wastes streams;

.3 Contracting Parties should enquire within their administrations on the scale and seriousness of this issue as well as possible solutions, including options to avoid unregulated dumping; and

.4 the Scientific Group should continue to collect relevant information on this issue.

7 TECHNICAL CO-OPERATION AND ASSISTANCE

Outcome of the IMO/UNEP/NEPAD Workshop in Mombasa

7.1 The IMO/UNEP/NEPAD Workshop on Marine Pollution Prevention and Environmental Management in Ports in Eastern Africa was held from 26 to 30 April 2004 in Mombasa, Kenya. The Chairman of the Scientific Group, Mr. Craig Vogt (United States), presented the report of the Workshop, which is covered in detail in documents LC 26/7/1 and LC 26/INF.6 and highlighted several recommended steps as a follow-up to the Workshop:

.1 the SEAWASTE Network on Integrated Waste Management in Southern and Eastern Africa was identified as an excellent forum for regional networking;

.2 the Nairobi Convention offered the most suitable platform for increased co-ordination between the London Convention, IMO, UNEP and Workshop participants in the Eastern African Region to address marine pollution prevention issues;

.3 countries interested in joining the London Protocol were urged to contact the IMO Office for the London Convention;

.4 creation of an information package detailing the basic requirements to accede to the London Protocol, including a clear description of benefits, costs and consequences a State should consider when becoming a Contracting Party to the Protocol;

.5 provision of regular training and capacity building covering various activities under the London Convention and the Protocol, as well as operation and maintenance of sewage treatment and port reception facilities, and waste management practices in general;

.6 development of a directory of scientific/technical resources in the region such as accredited laboratories and consultants;

.7 continued assistance in the development of legislation, standards and guidelines including the institutional arrangements to support the implementation of international agreements; and

.8 development of a status report on dumping activities carried out as well as on dumping sites in the region for the purpose of both the Nairobi Convention and the London Convention.

7.2 In general, the Meeting agreed with the recommendations of the Mombasa Workshop and noted that it served as a creative platform to promote and raise political awareness and support to advance the work of the London Convention and the Protocol.

7.3 The Meeting expressed its appreciation to the Ministry of Transport and Communication in Kenya, NEPAD, UNEP, IMO and the Contracting Parties for their support and organization of the Workshop.

7.4 The Meeting further noted the information provided by the Director of the IMO Technical Co-operation Division, Mr. David T. Edwards, regarding the Integrated Technical Co-operation Programme, its future activities, and the development and improvement of regional partnership arrangements.

Proposal to review the approach for general London Convention workshops

7.5 The Consultative Meeting noted that since 1998 general regional workshops had been convened biennially under the London Convention Technical Co-operation and Assistance Programme in conjunction with regular meetings of the Scientific Group such as in South Africa (1998), Australia (2000), Jamaica (2002) and Mombasa (2004).

7.6 In introducing document LC 26/7, the Secretariat informed the Meeting that the aforementioned workshops provided an overall legal framework for marine pollution management, promoted the London Convention and the Protocol, addressed various sectoral problems and gave direction to integrated approaches to solve the problems. Notwithstanding the success of these Workshops, the Secretariat suggested to aim future workshops, starting in 2006, at a selection of countries that are in the same – intermediate – stage of economic and industrial development, rather than on a wide range of developing countries within a specific region. The advantages of this approach included:

.1 these countries are directly confronted with the environmental problems associated with sustained economic and industrial growth whilst their populations demand an improvement in the quality of life (better environment and public health);

.2 these countries might benefit more directly from the waste management experience under the London Convention, provided this experience is demonstrated positively to address any well-defined problems they face; and

.3 the workshop agenda and workgroup sessions can be suitably designed to meet the needs of the countries invited.

7.7 The Meeting noted that although general marine pollution management workshops with a wide selection of countries in a particular region in attendance have their merits, it was important to consider a broader range of approaches, rather than focusing on one approach only.

7.8 In the ensuing discussion, most delegations viewed regional partnerships in the organization of workshops as an effective approach. For example, twinning arrangements as in the case of the Abidjan and OSPAR Conventions, linkage with regional agreement secretariats and centres like Nairobi Convention, ROPME and SPREP, which could facilitate the conduct of the workshop, provide experts and support, as well as assist in the development of the workshop activities and agenda.

7.9 The Director of the Technical Co-operation Division drew the attention of the Meeting to support provided to the London Convention Technical Co-operation and Assistance Programme under IMO's ITCP. He appreciated that Contracting Parties were considering an improved methodology of delivering technical co-operation, i.e., a more formal approach to workshop structure and targeting. This approach may have a wide application and he kindly offered to bring this to the attention of the Technical Co-operation Committee which would meet in June 2005 to consider the ITCP for the biennium 2006 – 2007.

7.10 The Director observed that in the implementation of the ITCP, there was a clear trend to move from regional workshops with broad-based participation to national workshops linked with specific country needs. However, if the approach suggested in document LC 26/7/1 was adopted, it should ensure that no countries were excluded that may not fall within the criteria established for prioritization and future participation in the London Convention Technical Co-operation and Assistance Programme. He also warned that a narrowed agenda might lead to a reduction of the basis for funding of the activity.

7.11 In summing up the discussion, the Chairman pointed out that a new workshop approach should offer a suite of approaches that must be tailored to different kinds of situations and conditions which exist. The Scientific Group was requested to undertake this work.

Continuation of the London Convention Web-site

7.12 In considering the London Convention Web-site, the Meeting was informed that it had been operational since July 2000 and would continue until 30 June 2005 through the generous contributions from Canada, the United Kingdom and the United States. A recent grant awarded by the United States Environmental Protection Agency allowed for continuation of the Web-site until the end of 2006.

Continuation of the SEA-WASTE Network in Eastern and Southern Africa

7.13 Highlighting one of the recommendations of the Mombasa Workshop, the Scientific Group, at its 27th session, noted the important role of the SEA-WASTE Network as a platform for exchange of experience in integrated waste management issues in Eastern and Southern Africa.

7.14 The Meeting was informed that the co-ordinator of the SEA-WASTE Network had participated at the IMO/UNEP/NEPAD Workshop held in Mombasa, Kenya, to discuss the direction of the second phase of the Network with some of its users (LC 26/7/1 and LC 26/INF.6).

7.15 The Meeting noted that the continuation of SEA-WASTE Network had been guaranteed until December 2005 and reaffirmed the importance of maintaining close contact with the SEA-WASTE Network participants, who attended the Mombasa Workshop, to promote the London Convention in the region.

Completion of the WAG Training Set in 2006

7.16 The Meeting recalled the work carried out on the development of the Waste Assessment Guidance Training Set and that it had urged the rapid completion of the Training Set in order to make the materials available to current and prospective Contracting Parties. It was noted that at the 27th session of the Scientific Group, outlines of the modules 6 (Action list), 8 (Potential impacts and impact hypothesis), 10 (Permit condition) and 11 (Monitoring compliance and impact) had been completed whereas the remaining modules, 4 (Waste characterization), 5 (Waste prevention audit and options) and 9 (Permit decision) were still under preparation.

7.17 The Meeting was informed that the United States Environmental Protection Agency had provided additional funding to continue the work on all remaining modules for consideration by the Scientific Group in 2005 and aimed at completion in 2006.

Status of the GEF Project Proposal

7.18 The Meeting recalled that at its 25th session, it requested the Secretariat to proceed with the development of a PDF-Block B Grant Request for submission to GEF/UNEP and to submit a progress report to this Meeting (LC 25/16, paragraph 7.19).

7.19 The Meeting was informed that the Secretariat submitted the draft PDF Block B outline to the UNEP/GEF Co-ordinating Unit for comment prior to full development of the proposal. At the 27th meeting of the Scientific Group (May 2004), the Secretariat was advised that GEF funds on International Waters, which is the GEF operational focal area for the proposed PDF Block B, had already been earmarked and that the next funding phase would not be available until 2005.

7.20 In view of this development, the Secretariat would prepare a fully fledged PDF Block Grant request taking into account comments made by the UNEP/GEF, in consultation with Contracting Parties and experts, for submission to the GEF Council in 2006.

7.21 At the 27th meeting of the Scientific Group UNEP offered to assist the Secretariat in the preparation of the PDF Block B Grant proposal, which was duly noted, and during the intersessional period, the Secretariat and UNEP worked on the modalities regarding the preparation of the PDF Block B Grant proposal, including the use of a consultant.

7.22 The Secretariat informed the Meeting that the likelihood for GEF-funding support on the proposal is uncertain at this time, however, work would continue in order that a complete proposal could be submitted to potential donors at the earliest opportunity.

The Hamburg Declaration: From Gaps to Integration

7.23 Mr. Craig Vogt (United States), on behalf of the World Organization of Dredging Associations (WODA), presented document LC 26/INF.8, "The Hamburg Declaration: From Gaps to Integration". He stated that the World Dredging Congress (WODCON XVII) took place from 27 September to 1 October 2004 in Hamburg, Germany. It was organized by CEDA, on behalf of WODA, in association with the Department of Port and River Engineering, State Ministry for Economic and Labour Affairs of the Free and Hanseatic City of Hamburg with the theme "Dredging in a Sensitive Environment".

7.24 The Congress devoted a one-day plenary session as an "Environment Day" with the theme "GAPS" and what might be done to bridge them as they could result in inappropriate regulatory guidance, inefficiencies in project implementation and potential harm to the environment. Conversely, an integrated approach to addressing such gaps could provide a basis for considering economical acceptability and ecological sustainability.

7.25 The highlight of WODCON XVII was the adoption of the "Hamburg Declaration: From Gaps to Integration", which showed that WODA could assist in addressing gaps in information to ensure that the dual goals of dredging and environmental protection were achieved. Additional information on the Congress may be obtained from: Dr. Anna Csiti, General Manager, CEDA Secretariat, Radex Building, Rotterdamse Weg 183c, 2629 HD Delft, The Netherlands, Tel.: +31 (0)15 268 25 75, Fax: +31 (0)15 268 25 76, E-mail: ceda@dredging.org.

7.26 The Meeting thanked WODA for its ongoing assistance.

8 MATTERS RELATED TO THE MANAGEMENT OF RADIOACTIVE WASTES

Update on international activities on the protection of the environment from the effects of ionizing radiation

8.1 The IAEA representative gave a progress report on international activities on the development of procedures for the protection of the environment from the effects of ionizing radiation during the period October 2003 to September 2004. This covered activities in the International Commission on Radiological Protection (ICRP), the International Atomic Energy Agency (IAEA), the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), the International Union of Radioecology (IUR), the European Commission (EC) and the OECD Nuclear Energy Agency (NEA). The aims of these activities were the development of a coherent framework for restricting releases of radioactivity to the environment in a manner that ensured adequate protection of both human health and the environment.

8.2 The IAEA representative regretted that slower progress than might have been expected was being made on the development of a framework for environmental protection from the effects of ionizing radiation. The Agency had intended to present a paper outlining a regulatory approach to radiological protection that included the protection of human health and the environment as well as issues such as *de minimis* that were of direct interest to the London Convention. However, the limited progress had dictated that the major outcome to date had been the preparation of an International Action Plan for submission to, and approval by, the IAEA Board of Governors in March 2005 that would reflect a commitment on the part of the IAEA to the development of a comprehensive regulatory framework.

8.3 The Chairman thanked the IAEA for its progress report and encouraged it to continue the work and provide periodic updates on progress to the Consultative Meeting.

Recent developments in the Russian Federation with the handling of low-level liquid radioactive wastes

8.4 The Chairman introduced this item by reminding the Meeting of the situation reported by the Russian Federation at the 25th Consultative Meeting in 2003 and invited the Russian Federation to report on progress on this issue (LC 25/16, paragraphs 8.27 to 8.35).

8.5 The Russian Federation stated that the issue remained a subject of national study that is gaining strength, however, it would not be able to withdraw its objections to the amendments in Resolution LC.51(16) until it had completed a National Management Plan addressing radioactive wastes. Recent information provided to the delegation by the Ministry of Natural Resources suggested that the preparations necessary for accepting the ban on sea dumping of radioactive matter are virtually complete. The Russian Federation stressed that it had maintained its moratorium on the dumping of radioactive wastes and had made further progress on the improvement in its capacity to manage radioactive wastes.

8.6 In response to a question from the Chairman, the Russian Federation confirmed that it was not yet in a position to withdraw its reservations until 2005 when the Management Plan had been completed.

8.7 The delegation of Japan intervened to express its disappointment that the Russian Federation was not yet in a position to accept the ban on dumping of radioactive wastes, especially as the additional delay appeared to be primarily attributable to outstanding administrative issues rather than the lack of capacity for radioactive waste management.

8.8 The delegation of the United States similarly expressed its disappointment. Ten years had now elapsed since a summit had been held on this issue between the United States and the Russian Federation. The United States expressed the hope that Russia would accede to Resolution LC.51(16) on the timescale specified in its intervention.

8.9 The delegation of Denmark and Finland aligned themselves with the views expressed by Japan and the United States.

8.10 In conclusion, the Meeting urged the Russian Federation to accelerate procedures for the acceptance of the ban on dumping of radioactive material and withdrawing its reservation regarding Resolution LC.51(16) by 2005 or earlier.

Report by the Environmental Crime Prevention Programme (ECPP)

8.11 The observer from the Environmental Crime Prevention Programme (ECPP) reported on its investigations of reports of activities involving putative sea disposal of radioactive material. Such investigations related specifically to:

.1 the deposition of nuclear torpedoes or mines by the former Soviet Union in the Gulf of Naples in the 1970s;

.2 massive dumping of high-level radioactive material in several coastal zones in the 1980s; and

.3 fraudulent and deliberate dumping of radioactive wastes in the 1990s.

8.12 The representative of the IAEA informed the Meeting that IAEA staff had met with ECPP and the Italian authorities at which time the IAEA had provided relevant information especially in relation to a submarine accident in the Mediterranean Sea in January 1970. It was further noted that the IAEA could only support the kind of investigation being undertaken by the ECPP when a formal request from Member States had been made.

8.13 The observer from OECD/IEA requested clarification of the ECPP report in respect to whether the incidents being investigated differed from those catalogued by the IAEA in its inventory of accidents and wastes disposed at sea published as IAEA-TECDOC-1242 and which had been discussed at the 22nd and 23rd Consultative Meetings (LC 23/INF.3).

8.14 The observer from ECPP responded that ECPP was investigating events in reports from open sources, which had not yet been acknowledged internationally. The information in IAEA-TECDOC-1242 was entirely confirmed by the relevant governments and, therefore, the reference to suspected activities in the ECPP presentation were additional events.

8.15 The delegation of Liberia, in noting that the ECPP report addressed activities covering the last three decades of the 20th Century, requested the ECPP to clarify any action it was taking in relation to more recent activities.

8.16 In response, the observer from ECPP stressed that its investigations were ongoing and involved surveillance and monitoring activities, however, it noted that in relation to illicit activities, particularly those associated with terrorism, it was likely that individual governments would have more specific information than the ECPP. The observer confirmed that ECPP would be fully prepared to co-operate in this regard with national and international organizations.

8.17 The Meeting:

.1 took note of the report of ECPP and appreciated ECPP's offer for further co-operation; and

.2 invited the IAEA to continue investigating new events, including those described in the ECPP report.

8.18 The IAEA representative confirmed that the collection of information on events as reported by ECPP was a continuing activity under the statutory functions of the Agency.

8.19 The delegation of Iran informed the Meeting of the intention of ROPME to hold a meeting on radioactive parcel transportation in December 2004, aimed at adopting measures required for controlling transportation of radioactive material within the ROPME Sea Area.

9 OUTREACH TO PROSPECTIVE NEW CONTRACTING PARTIES

9.1 It was recalled that the current outreach activities under the Convention focused on prospective *new* Contracting Parties and that these were closely linked with compliance activities aimed at *existing* Contracting Parties. The 25th Consultative Meeting agreed on several outreach activities to promote the London Convention and Protocol as reflected in its report (LC 25/16, chapter 10). Concerted outreach activities were an important element of the Revised Long-term

Strategy for Technical Co-operation and Assistance under the London Convention 1972 (LC 25/16, annex 4) and were required to raise the profile of the London Protocol given the slow pace of ratifications (see also section 2 of this report). The motto for outreach activities would be: ***"What is the London Convention/Protocol? Why is it important? How to use it."***

References of information on dumping in the UN Atlas of the Oceans

9.2 The UN Atlas of the Oceans is a web-based information system designed for policy makers who need to become familiar with ocean issues, as well as for scientists, students and resource managers who need access to databases on ocean issues and approaches to sustainability. FAO, IAEA, IMO, IOC-UNESCO, UNEP and WMO are partners to the UN Atlas Project with FAO as the executing agency. The UN Atlas can be visited at http://www.oceansatlas.org.

9.3 The Secretariat informed the Meeting that it would carry out a review of the information in the UN Atlas pertaining to dumping, as some of this information was not consistent with the London Convention (LC 26/9). The revised information would be prepared in HTML format for the Atlas and would also be linked with the London Convention Web-site.

9.4 The Meeting was also informed that in the intersessional period the Secretariat would review the information on the London Convention, and its achievements, in other publications of the UN system (e.g., World Bank publications).

9.5 The Meeting requested the Secretariat to report back to the 27th Consultative Meeting on the results of both these activities.

Proposal to compile London Convention guidelines into one publication

9.6 The Meeting was informed that most of the key guidelines developed under the Convention since 1997[7] had been available on the London Convention Web-site for some time but had not yet been issued as an IMO publication. The Secretariat therefore proposed to issue these guidelines as an official publication. This would lend an additional level of credibility with respect to interpretation and implementation of the London Convention and Protocol, something document versions posted on the Web-site do not always readily convey.

9.7 In the ensuing discussion, some delegations expressed the concern that some of the guidelines were due for review and amendment in the near future, while other delegations stressed the importance of such a publication as it would provide a historical perspective on the guidelines' revision over time.

9.8 The Meeting adopted a staged approach for publishing materials, agreeing to publish the Guidelines on Sampling and Analysis of Dredged Material Intended for Disposal at Sea (see chapter 5 of this report) and requesting the Secretariat to prepare a compilation of guidelines for review at the 27th Consultative Meeting for publication at a later date. Meanwhile, it was agreed that the guidelines available on the Web-site should be kept up-to-date as a reliable source of information.

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[7] Generic Guidelines (1997); the eight Specific Guidelines (2001); Guidance on the National Implementation of the 1996 Protocol (2001); Guidelines for the Application of the *De Minimis* Concept under the London Convention 1972 (1999, amended in 2003).

Outreach activities undertaken since the 25th Consultative Meeting

9.9 It was recalled that the 25th Consultative Meeting adopted Resolution LC.58(25) to promote the ratification or accession to the Protocol to the IMO Member States (LC 25/16, annex 7). The Secretariat informed the Meeting that the IMO Assembly at its 23rd session, in December 2003, had noted the benefits of joining the London Protocol and had encouraged the IMO Member Governments, who are not yet a party, to ratify or accede to the Protocol.

9.10 The Meeting was also informed that a small brochure (one brochure covering the English, French and Spanish languages) on the London Convention had been produced in March 2004 with funding from the Netherlands. It was agreed that the brochure should be displayed on the London Convention Web-site with the Secretariat's address to deal with requests for copies.

9.11 It was recalled that the 25th Consultative Meeting agreed to set up and maintain an "Events Calendar" listing meetings where the London Protocol should be promoted (LC 25/16, annex 6). It was the intention to regularly update the calendar and post it on the Web-site, however, the Secretariat informed the Meeting that only a few responses had been received in the intersessional period to maintain this process.

9.12 The Meeting noted the importance of the events calendar and encouraged Contracting Parties to indicate which meetings would be important in the coming year, as well as their willingness to act at these meetings as "ambassadors" to promote the London Protocol.

9.13 The Chairman informed the Meeting that he had briefed the Arctic Council in November 2003 and again in May 2004 on the merits of the London Protocol. He further noted that he would continue to promote the London Protocol through the Arctic Council Marine Strategic Plan.

9.14 The delegation of Spain reported on its outreach activities in 2004 among Contracting Parties to the OSPAR Convention and that the next opportunity to do so would be at the OSPAR Commission meeting to be held in Ireland in June 2005. The delegation announced its intention to again recommend ratification or accession to the Protocol at the next Conference of Parties to the Barcelona Convention to be held in Slovenia in the autumn of 2005.

9.15 The delegation of Finland reported on its outreach activities in 2004 among Contracting Parties to the Helsinki Convention and its intention to promote the London Protocol at suitable forthcoming HELCOM meetings.

9.16 The delegation of the United States reported that, building on the WSSD, a partnership conference "White Water to Blue Water" had been convened under the leadership of the United States and other national and multinational partners in Miami, Florida, in March 2004, to promote an integrated approach to the management of watershed and marine ecosystems in the Wider Caribbean Region. This successful conference had led to several partnerships among governments, IGOs, NGOs, academia and the private sector and provided a forum to promote the London Protocol. The report of the Miami Conference and further information in English, French and Spanish is available at www.ww2bw.org. The delegation announced its readiness to promote the Protocol at suitable meetings of the Cartagena Convention and at SPREP meetings.

9.17 The delegation of Germany informed the Meeting that it had proposed to include an encouragement to ratify the London Protocol into the draft UN resolution on "Oceans and the

Law of the Sea", the so-called "omnibus resolution", which was currently being discussed at the 59th session of the UN General Assembly[8].

9.18 The delegation of the Republic of Korea informed the Meeting that they would be hosting the Fifth Ministerial Conference on Environment and Development in Asia and the Pacific, in Seoul from 24 to 29 March 2005. This MCED 2005 Conference, organized by UN-ESCAP[9], is planned to move forward the sustainable development agenda established at the MCED 2000 Conference, and at the 2002 World Summit on Sustainable Development, taking into consideration emerging issues and realities, particularly the process of globalization for the Asia and Pacific region.

9.19 At the suggestion of the delegation of the Republic of Korea, the Meeting agreed that the Secretariat should contact UN-ESCAP to discuss opportunities to promote the London Protocol at MCED 2005.

9.20 The delegation of Iran reported on recent developments within the Regional Organization for the Protection of the Marine Environment (ROPME), which governs marine emergencies, management of hazardous wastes, and land- and sea-based sources of marine pollution in the ROPME Sea Area. The ROPME Council meeting held in 2003 had expressed its support for convening a Workshop for representatives of its Member States to raise the awareness on London Convention issues. This Workshop should be held sometime in 2005 and the precise dates should be settled in consultation between the Government of Iran, the ROPME Secretariat and IMO.

9.21 The Meeting thanked the delegation of Iran for its leadership in facilitating this good opportunity for outreach activities to the ROPME membership.

9.22 The Secretariat informed the Meeting that it had presented the achievements of the London Convention at the East Asian Seas Congress, held in Kuala Lumpur, Malaysia, in December 2003.

9.23 In light of the low attendance at this Meeting of African countries that had attended the IMO/UNEP/NEPAD Workshop in Mombasa in April 2004 (described in chapter 7 of this report) the Meeting stressed the importance to continue promoting London Protocol Membership, particularly in regional settings. Contracting Parties that are also parties to regional agreements for protection of the marine environment were requested to contribute to this effort.

9.24 The Secretariat informed the Meeting that, in June 2004, SPREP had invited comments on draft amendments that the SPREP Secretariat had prepared to both the Dumping and Emergency Protocols to the Noumea Convention[10]. The proposed amendments were aimed at bringing the two protocols into line, respectively with the London Protocol and the OPRC Convention[11]. IMO had provided substantive and editorial comments on these draft amendments. In August 2004, the Director of SPREP advised IMO that the Diplomatic

8 On 17 November 2004, the UN General Assembly adopted Resolution A/59/L22 including this encouragement in paragraph 55. The UN will issue the final text of this resolution in due course.

9 United Nations Economic and Social Commission for Asia and the Pacific.

10 Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, Noumea, 1986.

11 Convention on Oil Pollution Preparedness, Response and Co-operation, London, 1990.

Conference originally proposed for September 2004 was postponed to September 2005 and that a working group would be convened in early 2005[12] to further review the draft amendments to both Protocols.

9.25 The concern was expressed that amending regional conventions merely to bring these into line with global conventions governing the same issue might not be as productive as Noumea parties ratifying or acceding to the London Protocol and the OPRC Convention, accompanied with discussions on how to implement these agreements within the SPREP context.

10 MONITORING FOR THE PURPOSES OF THE LONDON CONVENTION 1972

Status report on the development of "Global Marine Assessments"

10.1 The Meeting recalled that the WSSD held in 2002 agreed to "establish by 2004 a regular process under the United Nations, for global reporting and assessment of the state of the marine environment, including socio-economic aspects and building on existing regional mechanisms" (GMA-process).

10.2 The Secretariat in introducing document LC 26/10, stated that pursuant to General Assembly resolution 58/240, the United Nations convened a group of experts "… to produce a draft document with details on the scope, general framework and outline of the regular process, peer review, secretariat, capacity building and funding".

10.3 The Meeting was informed that the Group of Experts, which met in March 2004, proposed that the GMA-process "should address all dimensions of marine ecosystems including the physical and chemical environment, biota and socio-economic aspects," such that the assessments should address: the state of marine ecosystems, causes of change, threats and risks including benefits derived from marine ecosystems; and a geographic scope that should span coastal and estuarine waters through ocean basins, taking account of terrestrial and atmospheric influences. In commenting on these developments, the IMO Secretariat suggested in May 2004 to the United Nations Division for Ocean Affairs and the Law of the Sea (UN-DOALOS) that the assessments should also enable stakeholders to judge the environmental effectiveness of international legal instruments, including the London Convention and MARPOL 73/78.

10.4 The Meeting noted that the report of the Group of Experts was discussed at the GMA International Workshop held in New York in conjunction with the fifth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (ICP), held in June 2004. While there was wide support for the establishment of the GMA and general agreement on the principle of launching an "assessment of assessments" as a start-up phase of the GMA-process, no agreement could be reached on the basic elements of the start-up phase (See chapter 11 on the relation between the GMA-process and GESAMP).

10.5 The Meeting also noted that this had resulted in the postponement of the intergovernmental meeting planned in October 2004 to establish the GMA-process.

10.6 The Meeting requested the Scientific Group and the Secretariat to monitor and report on further developments in this regard.

[12] The SPREP-Working Group will be convened in Fiji in February 2005.

Overview of Monitoring Reports

10.7 The Meeting noted that, at the request of the Scientific Group, the Secretariat undertook to compile the monitoring reports that the Contracting Parties had submitted to the Consultative Meeting and the Scientific Group from 1996 to 2003. The preliminary overview presented could be seen as a first step to provide an overview of field monitoring activities by Contracting Parties and which may also be used as a contribution to the GMA-process. The majority of the reports covered past monitoring activities, which were reported some years later as consolidated reports. In addition, Contracting Parties had made oral presentations of their monitoring activities as well as related topics such as Environment Impact Assessments, reports on assessment methodologies and research studies.

10.8 The Meeting also noted that the list presented was not exhaustive and that only ten Contracting Parties and one Associate Member had reported on their field monitoring activities since 1996.

10.9 The Secretariat had also assessed the level of submission on compliance monitoring based on the status of compliance with notification and reporting requirements under Article VI(4) of the London Convention (See also chapter 4 of this report).

10.10 The Meeting noted that based on the distribution analysis presented, the number of Contracting Parties that had reported over the years peaked in 1984 at 61.4% and although the number of Contracting Parties had expanded over time, the percentage of reporting had remained below the 50% level.

10.11 In the ensuing discussion, the Meeting noted that:

.1 there was clearly under-reporting with respect to monitoring activities;

.2 in May 2004, the Chairman of the Scientific Group had urged each Contracting Party to make at least one submission to the 28th session of the Scientific Group, i.e., on their monitoring activities, including lessons learned and experiences in implementing the Specific Guidelines (WAGs), or on other items of the Group's agenda; and

.3 some delegations submitted their monitoring reports to the secretariats of regional agreements for which they are also party to such as the Helsinki Convention, the OSPAR Convention and the Barcelona Convention, among others.

10.12 The Chairman informed the Meeting that each Contracting Party has an obligation under Articles VI(1)(d) and VI(4) to submit monitoring reports to the Secretariat on a regular basis.

10.13 The Meeting urged Contracting Parties to submit monitoring reports to the 28th session of the Scientific Group as a matter of priority and requested the Secretariat to prepare a circular letter on this matter. The Secretariat was also requested to investigate how best to access and use regional monitoring reports.

10.14 The Meeting noted that the United Kingdom would raise the issue of reporting on monitoring of dumping operations with the OSPAR Commission during its forthcoming meetings and discuss the prospect of a link-up with the London Convention on this matter. The

United Kingdom would report back to the Scientific Group and the Consultative Meeting at their next sessions on the outcome of these discussions.

11 RELATIONS WITH OTHER ORGANIZATIONS IN THE FIELD OF MARINE ENVIRONMENTAL PROTECTION

11.1 It was recalled that the 25th Consultative Meeting reviewed the wide range of possible relations with other organizations, in addition to IMO and IAEA, where there could be strong cross-sectoral linkages. Monitoring of the marine environment, coastal management and technical co-operation and assistance were considered to be the main cross-sectoral issues. Accordingly, that Meeting agreed to give priority attention to exploring collaborative arrangements with UNEP-GPA, the UNEP Regional Seas Programmes and Agreements, IOC and possibly FAO (LC 25/16, paragraph 12.11).

Progress with establishing collaborative arrangements

11.2 The Chairman informed the Meeting that he had sent a letter to the UNEP-GPA Office in October 2004 expressing the Meeting's strong desire for improving collaboration between the London Convention and UNEP to help promote the effective control of all sources of marine pollution and the early ratification of the London Protocol. He had indicated several areas where the London Convention had collaborated with UNEP in the past, and would plan to do so in the future. These areas included:

.1 the biennial London Convention/UNEP workshops held since 1998;
.2 promotion of ship recycling involving the Basel Convention and other organizations i.e. IMO and ILO;
.3 the SEA-WASTE Network in Southern and Eastern Africa, which works closely together with UNEP;
.4 the meetings planned for 2005 with countries under the Mediterranean Action Plan, and in the ROPME Sea Area;
.5 UNEP's support for the London Convention GEF-application;
.6 the prospect of collaboration concerning a possible global initiative on marine litter; and
.7 an input from the London Convention to the review in 2006 of the UNEP Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.

11.3 To expedite this process of collaboration the aim would be to exchange letters between both organizations. The UNEP-GPA Co-ordinator had sent a positive preliminary response on this idea and indicated that this issue was now under review within UNEP.

11.4 The Chairman informed the Meeting that in October 2004 he had sent a similar letter to the President of the International Ocean Institute (IOI) offering also closer collaboration between the London Convention and IOI.

11.5 The observer from IOI thanked the Meeting for its offer of collaboration and informed that IOI's mission was to ensure the sustainability of the ocean as "the source of life"; uphold and expand the principle of the common heritage as enshrined in the UN Convention on the Law of the Sea; and promote the concept of "Pacem in Maribus" (peace in the ocean) and its management and conservation for the benefit of future generations.

11.6 The observer, noting the Consultative Meeting's focus on compliance and technical co-operation activities, suggested that:

.1 IOI's 25 operational centres established all over the world could provide a network for collaborative activities, including the distribution of London Convention materials;

.2 IOI could become involved and support London Convention workshops in the future;

.3 the London Convention could make a contribution from 2005 onwards to the 8-week training programme on ocean governance for mid-level civil servants and professionals from developing nations which was held annually since 1980 at the Dalhousie University, Halifax, Nova Scotia, Canada; and

.4 the London Convention could also contribute to the capacity building and research activities which IOI planned in the coming years with a focus on the Mediterranean Sea, the Black Sea, and the Caspian Sea.

11.7 The Meeting expressed its appreciation for the offer made by IOI.

11.8 The delegation of China informed the Meeting of the adoption of the "Sustainable Development Strategy for the Seas of East Asia" at the East Asian Seas Congress held in December 2003 in Kuala Lumpur, Malaysia. The delegation suggested that the 12 PEMSEA-countries[13] offered an important network for London Convention activities in the region.

11.9 In light of the investigations that ECPP had reported under item 8 of the agenda, and ECPP's wish to co-operate more closely with the Consultative Meeting, it was agreed that a collaborative arrangement should be developed between ECPP and the London Convention through an exchange of letters.

11.10 The Meeting:

.1 noted the progress with and opportunities for collaborative arrangements;

.2 requested the Bureau to conclude the collaborative arrangements with UNEP and IOI, as a first priority, to be followed by arrangements with IOC, ECPP and possibly FAO and to report on the progress with establishing and implementing these arrangements at the next Meeting; and

.3 noted that the Long-term Programme should be adapted in light of these developments (See chapter 12 of this report).

Development of the "New GESAMP, Science for Sustainable Oceans"

11.11 In document LC 26/11 concerning the "New GESAMP, Science for Sustainable Oceans", the Meeting was invited to review the direction that the Joint Group of Experts on the Scientific

[13] Brunei Darussalam, Cambodia, China, Democratic People's Republic of Korea, Indonesia, Japan, Malaysia, Philippines, Republic of Korea, Singapore, Thailand and Vietnam co-operate in the GEF/UNDP/IMO Regional Programme on Partnerships in Environmental Management for the Seas of East Asia.

Aspects of Marine Environmental Protection (GESAMP) was planning to take and to reflect on the Meeting's interests in GESAMP.

11.12 The Meeting noted that GESAMP, as the joint advisory body for the UN system, had provided independent scientific advice on marine pollution and marine environmental protection issues since 1969. Since then it had produced 43 reports on technical topics related to marine pollution, protection and conservation and four global 'state of the marine environment' reports, which give an authoritative reference when assessing the effectiveness of international agreements, including the London Convention.

11.13 At the request of the Consultative Meeting, GESAMP had prepared the following four studies:

.1 Scientific Criteria for the Selection of Waste Disposal Sites at Sea, (GESAMP Reports and Studies No.16, published in 1982);

.2 An oceanographic model for the dispersion of wastes disposed of in the deep sea (GESAMP Reports and Studies No.19, published in 1983)[14];

.3 Global Strategies for Marine Environmental Protection (GESAMP Reports and Studies No.45, published in 1991); and

.4 Can there be a common framework for managing radioactive and non-radioactive substances to protect the marine environment? (GESAMP Reports and Studies No.45, Addendum 1, published in 1992).

11.14 The Meeting noted also that the strategic vision for the New GESAMP provided concrete mechanisms to ensure GESAMP's professionalism, including its effectiveness, efficiency, transparency and accountability. A GESAMP Office would be established to provide centralized management and a focal point for its interaction with governments and other major groups. The IAEA had offered to host the GESAMP Office at its Marine Environment Laboratory facilities in Monaco, as well as covering the overhead costs. A "Pool of Experts" would be set up as the primary mechanism for participation in GESAMP. Participation of pool experts in GESAMP's work would actively engage a large number of scientists from governments, NGOs and industry, enhancing GESAMP's interactions with these groups. In keeping with its strategic vision and mission statement, GESAMP had offered to play a lead role in the organization of the scientific work of the GMA-process (See also chapter 10 of this report).

11.15 The Meeting noted further that the Joint Secretariat of GESAMP had developed a draft Memorandum of Understanding to govern it and noted that this new MoU could become a binding agreement to be approved, as necessary, by all sponsors. GESAMP's core activities would be financed from a Trust Fund, with an initial yearly budget of $600,000. Compared with the contributions from most other sponsors, IMO was a major contributor to GESAMP. Nonetheless, combining all the contributions of the current sponsors amounted to $200,000 annually, resulting in a substantive shortfall of $400,000 each year. This meant that major new sponsors should be found within the UN system, through new partnerships or from other funding sources.

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[14] IAEA co-ordinated this request to GESAMP advising the Consultative Meeting on the management of radioactive wastes.

11.16 The Meeting noted that when MEPC recently reviewed the Strategic Vision for the New GESAMP, "Science for Sustainable Oceans" and the institutional arrangements for the New GESAMP, it had not drawn a final conclusion since it needed more information and clarification on several issues. These included more transparent budget appropriations such as how an estimated shortfall of $400,000 annually could be covered beyond the current funding by the Sponsoring Agencies including IMO (See also paragraph 1.15 of this report).

11.17 Several delegations indicated their appreciation for the advice that GESAMP had given over the years and the value of its reports. They supported the overall thrust and direction of the New GESAMP.

11.18 In response to a question about the relationship between GESAMP and the GMA-process, the Secretariat responded that GESAMP had considerable experience in assessing the state of the global marine environment, and consequently, had offered in 2003 to become a "contractor" to the GMA-process and play a leading role in a global scientific assessment panel that designs the scientific component of the GMA and synthesises regional results. Although GESAMP had a specific interest in staying involved in global assessments as shown in three of the five activities of its mission statement (LC 26/11, annex, paragraph 4), it would also carry out the remaining two tasks of its mission statement, as follows:

.1 GESAMP will, in response to requests, provide scientific reviews, analyses, and advice on specific topics relevant to the condition of the marine environment, its investigation, protection, and/or management; and

.2 GESAMP will regularly identify new and emerging issues regarding the degradation of the marine environment that are of relevance to governments and sponsoring organizations.

11.19 The Meeting, having reviewed the strategic vision for the New GESAMP:

.1 endorsed the continuation of GESAMP in its proposed direction; and

.2 requested the Scientific Group to consider on which of the current work programme items GESAMP might be requested to give advice in the future and to advise the 27th Consultative Meeting accordingly.

12 FUTURE WORK

Review of the Long-term Programme for the period 2005 to 2007

12.1 It was recalled that the Updated Long-term Programme 2003-2005 was adopted at the 24th Consultative Meeting in 2002. The 25th Consultative Meeting reviewed that programme, in light of the progress in 2003, with a view to highlighting the priority directions and actions for this Consultative Meeting and beyond.

12.2 In exploring ways to review the Updated Long-term Programme, the 25th Consultative Meeting agreed that an Intersessional Correspondence Group should develop proposals with a view to:

.1 identifying priority items for the period 2005 to 2007; and

.2 considering ways of improving the message and communication of the London Convention and for promoting the ratification of the London Protocol.

12.3 In introducing documents LC 26/12 and LC 26/INF.3 on the Draft Up-dated Long-term Programme (2004 – 2005), the Chairman of the Intersessional Correspondence Group on the Long-term Programme, Mr. Victor Escobar (Spain), noted that the two documents reflected the results of agreements reached at previous meetings on the Long-term Programme.

12.4 Mr. Escobar explained that the first objective of the Draft Updated Long-term Programme was to provide a more clear and transparent structure to describe the work to be carried out for the period 2004 - 2005 and beyond. This structure paved the way for a better identification of the status of activities programmed under the Convention and would provide a useful source of information both for Contracting Parties and for those who wished to familiarize themselves with the Convention. In view of the stated priority to promote the effective implementation of the London Convention and the early entry into force of the London Protocol, the proposed new structure would also support efforts to demonstrate and communicate the benefits of the London Convention.

12.5 The annex to document LC 26/12 provided a source of information on eight goals and 54 associated products, which had been identified using the results of the 26th session of the Scientific Group (LC/SG 26/12) and the 25th Consultative Meeting (LC 25/16). Mr. Escobar emphasized that the document was not definitive, the list of goals and products was not exhaustive and the contents were not prioritized and would require updating as work evolved. It, therefore, should be viewed as a living document. Mr. Escobar also suggested that when the Meeting would review the Draft Updated Long-term Programme, the following questions should be kept in mind:

.1 were the goals identified in the document the right ones to achieve an efficient implementation of the Convention and Protocol? and

.2 were the products defined accurately and do they lead towards achieving these goals?

12.6 The Secretariat introduced an annotated up-date on all action items in the draft Long-term Programme (LC 26/12/1) as requested last year and, for ease of reference, this up-date matched the products identified in document LC 26/12. If the Meeting accepted the proposed new structure, the Secretariat would list the new products identified and delete those completed. The outcome could then be presented to the next Meeting.

12.7 Referring to product 50 entitled "Exploration of collaborative opportunities with ECPP", the observer from ECPP explained that his organization was ready for concrete co-operation activities with the Convention. He requested that product 50 be adjusted to reflect this (See also chapter 11 of this report).

12.8 Recalling the possible next steps, which the Chairman of the Scientific Group had proposed in the context of how the London Convention and Protocol can accommodate the needs of developing countries, the Meeting agreed to insert these steps into the next version of the Long-term Programme. Specifically, the Meeting requested that the Scientific Group review the Specific Guidelines under the Convention (WAGs) with a view to developing pragmatic guidance for use by developing countries. In so doing, the proposed review of the Specific

Guidelines was intended to clarify these guidelines for improvement of communication and not as a modification exercise (LC 26/5/1, paragraph 12.6).

Action by the Consultative Meeting

12.9 In conclusion, the Meeting:

.1 adopted the new reporting structure and content of the "Updated Long-term Programme for the London Convention 1972 and the Promotion of the 1996 Protocol thereto (2004 – 2005)", as amended, and as shown in annex 8 to this report, pending adjustments to reflect the period 2005 - 2007[15];

.2 agreed that the Long-term Programme should be reviewed at every Consultative Meeting to update it in light of work carried out and targets met; and

.3 expressed appreciation for the excellent work of the Chairman of the Correspondence Group, as well as to those delegations who had contributed to the review exercise.

Review of the Future Work Programme of the Scientific Group

12.10 The Meeting reviewed the Future Work Programme of the Scientific Group for the period 2005 – 2007 in light of the additional tasks assigned to the Group in relation to CO_2 sequestration in geological structures, starting in 2005.

12.11 At the proposal of the Chairman of the Scientific Group, the Meeting agreed to make the following adjustments in the Future Work Programme of the Group:

.1 the review of the Generic Guidelines was assigned a medium instead of a high priority, with a postponement of the target completion year to 2006;

.2 the advice on spoilt cargoes management was assigned a medium instead of a high priority, with a postponement of the target completion year to 2006;

.3 the work on the completion of new modules of the WAG Training Set would continue as a medium priority for 2005 and with a postponement of the target completion year to 2006;

.4 the activities in co-operation with MEPC on the proper management of vessel generated wastes were assigned a medium instead of a high priority, but the target completion year was kept at 2007; and

.5 the "Science Day 2005" would be limited to a half day instead of a full day.

12.12 The "Amended Future Work Programme of the Scientific Group (28th, 29th and 30th Meetings)", as adopted by the Meeting is shown in annex 9 to this report.

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15 The Secretariat made the necessary adjustments after the Meeting.

List of substantive items for the 27th Consultative Meeting

12.13 The Meeting reviewed the list of substantive items for the 27th Consultative Meeting (LC 26/WP.5) and regarded the indents listed under each item as early annotations and priorities for action at that Meeting.

12.14 The Meeting adopted the "List of substantive items for inclusion in the agenda for the 27th Consultative Meeting", as amended, and as shown in annex 10 to this report. Contracting Parties were invited to prepare submissions on the priority items contained therein.

Dates for the 27th Consultative Meeting and of its Scientific Group

12.15 The Meeting agreed that the 27th Consultative Meeting should be held **from 24 to 28 October 2005.**

12.16 The Meeting agreed that the 28th meeting of the Scientific Group should be held **from 23 to 27 May 2005[16].**

12.17 The Meeting recalled in this regard the offer of the United Kingdom to organize a one-day seminar to bring together experts in CO_2 sequestration technology and members of the Scientific Group, and noted that this seminar was tentatively planned for Friday, 20 May 2005.

13 ANY OTHER BUSINESS

Final Report of the United States Commission on Ocean Policy

13.1 The delegation of the United States presented document LC 26/INF.7, which provides information on the final report on "An Ocean Blueprint for the 21st Century," submitted to the President and Congress of the United States on 20 September 2004. Pursuant to the Oceans Act of 2000 (P.L. 106-256), the President appointed 16 members from diverse backgrounds to the United States Commission on Ocean Policy with the mandate to establish findings and develop recommendations for a new and comprehensive national ocean policy.

13.2 The Meeting noted that the Commission's final report "An Ocean Blueprint for the 21st Century," had 212 recommendations on a wide range of topics, and reflected a number of modifications from the Preliminary Report in response to comments received from 37 governors, five tribal leaders, one regional governors association, 800 interested stakeholders and other technical experts. The Commission's final report could be accessed at www.oceancommission.gov/documents/welcome.html.

14 ELECTION OF CHAIRMAN AND VICE-CHAIRMEN

14.1 In view of the fact that no new Chairman could be elected at this session, the Meeting considered ways of how the continuity in leadership could be guaranteed. Another factor in these deliberations was the anticipated entry into force of the London Protocol and the prospect of

[16] Both the above dates have been confirmed in the IMO Programme of Meetings for 2005.

convening both a Consultative Meeting and a Meeting of Contracting Parties concurrently, possibly starting in 2005.

14.2 In view of this situation, the Meeting:

.1 re-elected Mr. John Karau (Canada) as Chairman for the intersessional period only;

.2 re-elected Mr. Victor Escobar Paredes (Spain) and Mr. M. S. Hosseini (Iran) as First and Second Vice-Chairmen, respectively, for the intersessional period and the 27th Consultative Meeting;

.3 agreed that, during the intersessional period, the Chairman, the First Vice-Chairman and the Secretariat should compile a list of candidates for Chairman and Vice-Chairmen to be elected at the conclusion of the 27th Consultative Meeting; and

.4 agreed that, should the current Chairman be unable to chair the 27th Consultative Meeting, the First Vice-Chairman would fulfil this role.

14.3 The Meeting praised Mr. John Karau for his exceptional leadership and guidance, his tireless efforts in promoting collaborative approaches and compliance issues over the years, and his sense of humour.

15 CONSIDERATION AND ADOPTION OF THE REPORT

The report of the 26th Consultative Meeting of Contracting Parties to the London Convention was adopted on the final day of the Meeting, 5 November 2004.

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ANNEX 1

AGENDA FOR THE 26th CONSULTATIVE MEETING

(Agenda item 1)

1 Adoption of the agenda

LC 26/1	Secretariat: Provisional Agenda
LC 26/1/1	Secretariat: Annotations to the Provisional Agenda and Draft Timetable

2 Status of the London Convention 1972 and of the 1996 Protocol thereto

LC 26/2	Secretary-General: Report of the Secretary-General on the status of the London Convention 1972
LC 26/2/1	Secretary-General: Report of the Secretary-General on the status of the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972
LC 26/2/2	Secretariat: Note regarding ratification or accession intentions

3 Preparation for the entry into force of the 1996 Protocol

LC 26/3	Report by the Compliance Correspondence Group: Draft initial text of the London Protocol Compliance Mechanism
LC 26/3/1	Report by the Compliance Correspondence Group: Comments on feature of a Compliance Body under the 1996 Protocol
LC 26/3/2	Secretariat: Comments received on the Draft Procedures and Criteria for Determining and Addressing Emergency Situations under the 1996 Protocol
LC 26/WP.1	Secretariat: Report of the Drafting Group on Emergency Procedures
LC 26/WP.3	Secretariat: Report of the *ad hoc* Working Group on Reporting and Compliance

4 Compliance issues

LC 26/4	Secretariat: Report on Incident Information reports received
LC 26/INF.4	Secretariat: Status of compliance with the notification an reporting requirements under Article VI(4) of the London Convention 1972

5 Consideration of the report of the Scientific Group

LC 26/5	Secretariat: Action by the Consultative Meeting
LC 26/5/1	Chairman of the Scientific Group: How can the London Convention 1972 and 1996 Protocol accommodate the needs of developing countries?
LC 26/INF.5	Secretariat: Information received on spoilt cargo management

6 Interpretation of the London Convention 1972

LC 26/6	Secretariat: Environmental management issues in view of the London Convention and Protocol related to wrecks
LC 26/6/1	United Kingdom: Mitigating the environmental impacts on the oceans of climate change: carbon capture and sequestration in the marine environment
LC 26/6/2	Canada: Evaluation of the exemption for discharges occurring as part of the normal operations of vessels, platforms, etc., under Article III(1)b)(i) of the London Convention 1972 and Article 1.4.2.1 of the 1996 Protocol
LC 26/WP.2	Secretariat: Report of the Working Group on CO_2 Sequestration

7 Technical co-operation and assistance

LC 26/7	Secretariat: Proposal to review the approach for general London Convention Workshops
LC 26/7/1	Secretariat: Report of the IMO/UNEP/NEPAD Workshop on Marine Pollution Prevention and Environmental Management in Ports in Eastern Africa - Executive Summary
LC 26/INF.6	Secretariat: Report of the IMO/UNEP/NEPAD Workshop on Marine Pollution Prevention and Environmental Management in Ports in Eastern Africa
LC 26/INF.8	WODA: The Hamburg Declaration: From Gaps to Integration

8 Matters related to the management of radioactive waves

No documents submitted under this agenda item

9 Outreach to prospective new Contracting Parties

LC 26/9	Secretariat: Review on information about the London Convention 1972 in the UN Atlas of the Oceans

10 Monitoring for the purposes of the London Convention 1972

LC 26/10	Secretariat: Status report on the development of "Global Marine Assessments" under the United Nations

11 Relations with other organizations in the field of marine environmental protection

LC 26/11	Secretariat: Towards a new GESAMP: Developments, strategy, financial implications and institutional arrangements
LC 26/11/1	Secretariat: Co-operation with MEPC on the proper management of vessel generated wastes

12 Future work

LC 26/12	Chairman of the Long-Term Programme Correspondence Group: Draft updated Long-Term Programme for the London Convention 1972 and the promotion of the 1996 Protocol hereto (2005-2007)
LC 26/12/1	Secretariat: Annotated up-date on all products identified in the Draft Up-dated Long-term Programme (LC 26/12)
LC 26/INF.3	Chairman of the Long-Term Programme Correspondence Group: Draft updated Long-Term Programme for the London Convention 1972 and the promotion of the 1996 Protocol hereto (2005-2007)
LC 26/WP.5	Secretariat: List of substantive items agreed for inclusion in the Agenda for the 27th Consultative Meeting

13 Any other business

LC 26/INF.2	Netherlands: Background information regarding the handling of the wreck of the *MV ASSI EURO LINK*
LC 26/INF.7	United States: Final report of the United States Commission on Ocean Policy: "An Ocean Blueprint for the 21st Century"

14 Election of Chairman and Vice-Chairmen

No documents submitted under this agenda item

15 Consideration and adoption of the report

LC 26/15	Secretariat: Report of the 26th Consultative Meeting
LC 26/INF.1 + Corr.1	List of Participants
LC 26/WP.4 + Add.1	Secretariat: Draft Report of the 26th Consultative Meeting

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ANNEX 2

INSTITUTIONAL MODEL FOR THE COMPLIANCE BODY: PROS AND CONS OF (i) OPEN-ENDED VS LIMITED MEMBERSHIP MODEL, (ii) STANDING OR *AD HOC* COMPLIANCE BODY
(Agenda item 3)

The following represents a non-exhaustive listing of the pros and cons of the various institutional models expressed in plenary and in the *ad hoc* Working Group on Reporting and Compliance and does not represent agreed conclusions. These are provided for consideration to facilitate future discussions of the compliance procedures and mechanisms. The order of listing is not relevant.

1 OPEN-ENDED VS. LIMITED MEMBERSHIP COMPLIANCE BODY

1.1 **Open-ended compliance body**

1.1.1 *Pros*

.1 allows all Parties to attend compliance group meetings;
.2 would foster perception of inclusiveness, rather than appearing to be a "club";
.3 would be effective;
.4 only the interested Parties would attend, thereby possibly reducing numbers;
.5 open-ended better meets the Article 11.1 requirements of "allowing for the full and open exchange of information";
.6 costs of an open-ended meeting can be reduced by scheduling meetings in conjunction with other Protocol meetings;
.7 could be educational;
.8 recommendations will have more credibility and relevance if from a larger group;
.9 precedents in fisheries and other international contexts;
.10 openness and transparency are enhanced by being present in the room, which enables all interested Parties to participate;
.11 precedent under the London Convention with the Scientific Group and the previous *ad hoc* Group of Legal Experts; and
.12 members would ensure that technical expertise is available.

1.1.2 *Cons*

.1 not as efficient as the limited model: whoever turns up at the open-ended meeting participates in the deliberations, but they may not be prepared to discuss the issues and progress be deferred for another year; might not know ahead who the chair will be, which may slow down progress;
.2 lack of technical expertise;
.3 if the open-ended body to be used is the Meeting of Contracting Parties, then this means that each year the compliance body would start over with many new players; further, with combined London Convention and Protocol meetings of parties, there may be little plenary time for such discussions; and
.4 may not be as cost-effective as the limited membership model.

1.2 Limited Membership Model

1.2.1 *Pros*

.1 more efficient: quicker results; can work intersessionally; would have appropriate expertise; more focused meetings; members will be better prepared;
.2 more cost effective;
.3 can more easily investigate and find solutions, particularly through exchanges of information and guidance;
.4 would be more impartial; greater sense of accountability;
.5 transparency could be addressed: an "open exchange" as per Article 11.1 can best be facilitated by a limited body; could prepare compliance matters for consideration by the Meeting of Contracting Parties (MCP), with MCP retaining final say; procedural protections would facilitate transparency; full availability of documents for all;
.6 continuity of experience;
.7 expertise guaranteed to be present;
.8 guarantees that at least X members will attend;
.9 Parties may be more comfortable having their compliance difficulties reviewed in a smaller setting;
.10 representativeness of a smaller group can be ensured better than an open-ended model; and
.11 there are precedents for this model in other multilateral environmental agreements.

1.2.2 *Cons*

.1 appears to be less inclusive, could be perceived as an exclusive club;
.2 lack of transparency;
.3 neither the London Convention nor the Protocol has regional groupings, which makes equitable geographic representation more difficult to establish; in early days after the Protocol enters into force, with few Parties, representativeness may be difficult to achieve;
.4 would need to limit terms of members; and
.5 unproven approach in current London Convention context.

2 STANDING VS. *AD HOC* COMPLIANCE BODY

2.1 Standing Compliance Body

2.1.1 *Pros*

.1 more effective in promoting compliance due to continuity of expertise;
.2 allows for consistency in approach to compliance issues;
.3 more efficient use of time, e.g. continuity of chair and members;
.4 model has worked in other multilateral environmental agreements; and
.5 review of reports and Articles 9.5 and 26.5 functions suggest a standing body.

2.1.2 *Cons*

.1 may be perception that a standing body is not inclusive; and
.2 may be unnecessary given scale of perceived compliance issues.

2.2 *Ad Hoc* Compliance Body

2.2.1 *Pros*

.1 avoids "club" perception of standing committee;
.2 allows for slow but measured approach, i.e. start with *ad hoc* and see over time if a standing body is required depending upon scale of compliance problem;
.3 history in the London Convention of starting with *ad hoc* working groups: example of the Scientific Group as an *ad hoc* Group for 8 years; and
.4 is flexible to needs.

2.2.2 *Cons*

.1 membership may vary from meeting to meeting, thus hard to get consistent approach; and
.2 may lose more time on organizational matters.

3 ISSUES WHICH ARE LINKED TO THE INSTITUTIONAL MODEL DISCUSSION

During discussions, issues that were considered more closely linked to the choice of institutional model were:

.1 "measures" (See section 5 of annex 3 to this report);
.2 method of appointment of compliance body members;
.3 who the member represents (i.e. Parties, or acting in personal capacity);
.4 who gets to initiate the compliance procedures, e.g. referral from the Meeting of Contracting Parties or independent initiation by the compliance body; and
.5 interplay between open vs. limited and standing vs. *ad hoc* issues (that is, a standing body, could be open-ended or limited in membership; similarly, an *ad hoc* body could be open-ended or limited in nature).

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ANNEX 3

AMENDED VERSION OF THE INITIAL TEXT FOR COMPLIANCE PROCEDURES AND MECHANISMS, PURSUANT TO ARTICLE 11 OF THE 1996 PROTOCOL TO THE LONDON CONVENTION 1972

(Agenda item 3)

This initial text includes various options on the roles and functions of the bodies associated with compliance matters.

1 GENERAL GUIDANCE

1.1 The objective of the compliance procedures and mechanisms is to assess and promote compliance with the 1996 Protocol to the London Convention 1972 (the Protocol) with a view to allowing for the full and open exchange of information, in a constructive manner.

1.2 The procedures and mechanisms shall be non-confrontational, [primarily] facilitative, transparent, cost-effective and preventive in nature, simple[,] [and] flexible [and non-binding].

1.3 The Meeting of Contracting Parties shall retain overall responsibility for compliance matters.

1.4 A Protocol body making recommendations to the Meeting of Contracting Parties on compliance matters shall make every effort to reach consensus among the body members. Where consensus cannot be reached, the report shall reflect the views of all members of the body.[17]

1.5 Any work on compliance shall be in accordance with these procedures or as otherwise authorized by the Meeting of Contracting Parties.

1.6 [A Compliance Group is hereby established by the Meeting of Contracting Parties] [The Meeting of Contracting Parties may establish a Compliance Group on an as needed basis].

2 FUNCTIONS OF BODIES RELATED TO COMPLIANCE

2.1 The Meeting of Contracting Parties may:

.1 refer, as appropriate, compliance matters (individual situations of possible non-compliance, systemic issues and other matters) to the Compliance Group and/or the Scientific Group;

.2 offer advice, assistance or co-operation to Contracting Parties and non-Contracting Parties, after full consideration of any information submitted pursuant to this Protocol and any recommendations made through these procedures and mechanisms;

.3 [decide on appropriate actions based on the recommendations of the Compliance Group or the Scientific Group with respect to compliance matters;]

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[17] This paragraph should be moved to a more appropriate location in the text. The draft Protocol rules of procedure for voting may be relevant to this paragraph.

.4 periodically review the effectiveness of the compliance procedures and mechanisms, including the roles of the Compliance Group, the Scientific Group and itself;

.5 review [and consider advice from the Compliance Group and/or the Scientific Group on] reports under Articles 9.4.1, 9.4.2, 9.4.3, 10.3, 26.5 and 26.6 pursuant to section 6 below; and

.6 undertake other activities, as appropriate, to promote compliance.

2.2 The Compliance Group may, [upon request of the Meeting of Contracting Parties]:

.1 [consider/assess] an individual situation of a Party's possible non-compliance referred to it in accordance with section 4, with a view to identifying the facts, possible causes and specific circumstances;

.2 make recommendations to the Meeting of Contracting Parties on systemic compliance issues referred to it or that have been identified in the course of its work;

.3 make recommendations to the Meeting of Contracting Parties on individual situations of possible non-compliance as described in section 5;

.4 [[upon request of the Meeting of Contracting Parties] [make recommendations to undertake other activities to promote compliance, [including][i.e.] advice, and recommendations for [technical] co-operation and assistance, taking into account advice from other subsidiary bodies or Parties, as appropriate;]]

.5 [upon request] review the implementation of Meeting of Contracting Parties' recommendations [and decisions] on compliance;

.6 review and provide advice to the Meeting of Contracting Parties on reports and records submitted as described in section 6 below; and

.7 [with a view to addressing compliance issues without delay provide advice and guidance to a Party [or non-Party] pending consideration by the Meeting of Contracting Parties.]

2.3 The Scientific Group may, [upon a request of the Meeting of Contracting Parties]:

.1 make recommendations to the Meeting of Contracting Parties on systemic compliance issues referred to it or that have arisen in the course of its work;

.2 undertake compliance promotion activities on scientific and technical issues, including training and guidance documents;

.3 provide advice and guidance to a Party [or non-Party] on scientific and technical issues; and

.4 review and provide scientific and technical advice to the Meeting of Contracting Parties on reports and records submitted to the Secretariat as described in section 6 below.

3 CHARACTERISTICS OF THE COMPLIANCE GROUP

3.1 Type of individual

3.1.1 The Compliance Group shall be composed of individuals selected on the basis of their scientific, technical [socio-economic] or legal expertise.

3.1.2 Members shall serve [in their personal capacity][as representatives of governments][objectively and in the best interests of the Protocol].

[3.1.3 Members shall be appointed by the government they represent][Members shall be nominated by governments, and elected by the Meeting of Contracting Parties.]

3.2 Size of group

The Compliance Group shall be [limited in size to xx members][open-ended][and may include representatives from relevant international organizations or bodies]. [Should a limited group be chosen, consideration will have to be given to ensuring equitable geographic distribution of members, as well as other factors.]

3.3 Frequency of meeting

The Compliance Group shall meet as necessary [when specifically requested to do so by the Meeting of Contracting Parties][as determined by the Compliance Group] [at least once a year in conjunction with the Meeting of Contracting Parties].

3.4 Timing of meeting

The Compliance Group shall meet [in conjunction with / during the Meeting of Contracting Parties][in conjunction with / during a meeting of the Scientific Group][on an independent schedule]. [In determining the dates of the meetings, due consideration should be given to the meeting schedules of the [Meeting of Contracting Parties and other] relevant bodies under the Protocol.]

3.5 Type of group

The Compliance Group shall meet as [a standing body of the Meeting of Contracting Parties] [a working group of the Meeting of Contracting Parties].

4 SUBMISSIONS

4.1 An issue regarding individual situations of possible non-compliance may be raised by:

.1 the Meeting of Contracting Parties [and its subsidiary bodies where so mandated by it];

.2 [a Party regarding its own activities] [a Party that concludes that, despite its best efforts, it is or will be unable to fully comply with its obligations under the Protocol];

.3 a Party that has reservations about another Party's compliance with the obligations under the Protocol [with which it is directly involved]; [when it is affected by the non-compliance] [a Party intending to make a submission under this subparagraph shall [preferably] inform the Party whose compliance is in question, and both Parties should then try to resolve the matter through consultations;] and

.4 [individuals or organizations that have reservations about a Party's compliance with the obligations under the Convention.]

4.2 An issue regarding individual situations of possible non-compliance shall be raised [with the Meeting of Contracting Parties, which will decide how it should be handled] [directly with the Compliance Group]].

5 MEASURES

5.1 Following [consideration / an assessment] of an issue regarding a Party's possible non-compliance, and taking into account the capacity of the Party concerned, and such factors as the cause, type, degree and frequency of any non-compliance, the Compliance Group may recommend to the Meeting of Contracting Parties that one or more of the following measures be taken:

.1 the provision of advice and recommendations, with a view to assisting the Party concerned to implement the Protocol;

.2 the facilitation of [technical] co-operation and assistance;

.3 the elaboration, with the co-operation of the Party or Parties concerned, of compliance action plans, including targets and timelines;

.4 [the issuing of a formal statement of concern regarding a Party's compliance situation];

.5 [the invitation of the non-compliant Party to appear before the Meeting of Contracting Parties and outline the action it will take to bring itself into compliance and report back to the next Meeting on its progress].

5.2 Prior to submitting recommendations to the Meeting of Contracting Parties, the Compliance Group shall share its draft conclusions and recommendations with the Party concerned for consideration and an opportunity to comment within X months/weeks upon receipt of the draft by the Party concerned. Any such comments shall be included in the report of the Compliance Group to the Meeting of Contracting Parties.

5.3 The Meeting of Contracting Parties shall make the final decision regarding any measures to be taken in response to a Party's possible non-compliance. [On the basis of the recommendation by the Compliance Group, the Meeting of Contracting Parties may consider, in case of repeated or continued non-compliance, additional more stringent measures in accordance with international law and [Article 60 of the Vienna Convention on the Law of Treaties.]]

6 REPORTS AND RECORDS

6.1 Reports and Records made pursuant to Articles 9.4.1, 9.4.2 and 9.4.3, 10.3, 26.5 and 26.6 shall be handled as described in the following paragraphs.

6.2 Parties shall maintain their own records under Article 9.4.1 regarding the issuance of dumping permits as well as the condition of the sea and submit these records to the Secretariat, which then transmits them to the Scientific Group [and] [transmits them to the Compliance Group] [which then may refer them to the Compliance Group] for review and reporting back to the Meeting of Contracting Parties.

6.3 Once Parties' reports under Articles 9.4.2 and 9.4.3, (regarding administrative and legislative measures taken to implement the provisions of the Protocol, including a summary of enforcement measures, the effectiveness of such measures and any other problems encountered in their application) are submitted to the Secretariat, the Meeting of Contracting Parties shall refer them to the Compliance Group for evaluation. The Group will report its conclusions to an appropriate Meeting or Special Meeting of Contracting Parties.

6.4 The Secretariat shall compile the "Incident Information Forms" it receives under Article 10.3 and present a compilation of them to each Meeting of Contracting Parties for consideration, and, if appropriate, referral to the Compliance Group or Scientific Group.

6.5 Parties that have made a notification under Article 26.1 regarding the need for a transitional period shall submit reports pursuant to Articles 26.5 and 26.6 to the Secretariat prior to each Meeting of Contracting Parties held during their transitional period. The Meeting of Contracting Parties shall take action on the reports, including, if appropriate, referral to the Compliance Group or the Scientific Group.

7 RELATIONSHIP WITH OTHER PROVISIONS OF THE PROTOCOL AND OTHER BODIES

7.1 This mechanism shall be without prejudice to the provisions of Article 16 of the Protocol on settlement of disputes.

7.2 In the case of issues that overlap with the responsibilities of other bodies under the Protocol, the Meeting of Contracting Parties may direct the [Compliance Group/Scientific Group] to work in conjunction with such bodies and take action as it deems appropriate.

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ANNEX 4

EXAMPLES OF ELEMENTS THAT SHOULD SERVE AS "FOOD FOR THOUGHT" FOR ON-GOING DISCUSSIONS
(Agenda item 3)

1 REPORTING TO MEETINGS OF CONTRACTING PARTIES

The Compliance body shall submit a report to each ordinary meeting of the Meeting of Contracting Parties presenting:

.1 the work that the Compliance body has undertaken in fulfilling its functions concerning the compliance of individual Parties, including any recommendation, for the information of and/or consideration and necessary action by the Meeting of Contracting Parties;

.2 the work that the Compliance body has undertaken in fulfilling its functions concerning general compliance issues, including recommendations, for the information of and/or consideration and necessary action by the Meeting of Contracting Parties; and

.3 the Compliance body's future work programme, including its schedule of expected meetings which it considers necessary for the fulfilment of the work programme, for the consideration and approval by the Meeting of Contracting Parties.

2 TERMS OF SERVICE

At the session at which this decision is adopted, the Meeting of Contracting Parties shall appoint X of the members for one term and X members for two terms. The Meeting of Contracting Parties shall, at each ordinary meeting thereafter, appoint for two full terms X new members to replace those members whose period of office has expired, or is about to expire. Members shall not serve for more than two consecutive terms. For the purpose of this decision, "term" means the period that begins at the end of one ordinary Meeting of Contracting Parties and ends at the next ordinary session of the Meeting of Contracting Parties.

3 APPOINTMENT OF OFFICERS

The Compliance body shall elect its own Chairman and Vice-Chairman.

4 RIGHT TO PARTICIPATE

A Party whose compliance is in question has the right to participate in the consideration of the submission by the Compliance body. Only the members of the Compliance body may participate in the elaboration and adoption of a recommendation or decision of the Compliance body. The Party whose compliance is in question shall not be present during the elaboration and adoption of conclusions and recommendations by the Compliance body.

5 DECISIONS BY THE COMPLIANCE BODY

5.1 The members of the Compliance body shall make every effort to reach agreement on all matters by consensus. If all efforts to reach consensus have been exhausted and no agreement has been reached, the decision shall, as a last resort, be taken by a [two-thirds] [three-quarter] majority vote of the members present and voting. Decisions on matters of procedure shall be taken by a majority vote of the members present and voting. If the question arises whether a matter is one of procedural or substantive nature, the Chairman shall rule on the question. An appeal against this ruling shall be put to the vote immediately and the Chairman's ruling shall stand unless overruled by a majority of the members present and voting. If on matters other than elections a vote is equally divided, a second vote shall be taken. If this vote is also equally divided, the proposal shall be regarded as rejected.

5.2 Two-thirds of the members of the Compliance body shall constitute a quorum.

6 CONFIDENTIALITY

6.1 Subject to Article .... of the Protocol[18], confidential information shall be treated as such throughout and after the process.

6.2 The reports of the meetings of the Compliance body, which shall not contain any confidential information, shall be available to the public.

6.3 All information exchanged by or with the Compliance body that is related to any decision or recommendation by the Compliance body shall be made available by the Secretariat to any Party upon its request; that Party shall ensure the confidentiality of the information it has received in confidence.

7 RELATIONSHIP WITH OTHER MULTILATERAL INSTRUMENTS

Where there is an overlap with the obligations and responsibilities under other multilateral instruments the Meeting of Contracting Parties may request the Compliance body/Scientific Group to communicate with relevant bodies of the respective instruments, with a view to pursuing possibilities for synergies and linkages, including through organizational and practical co-operation, and report back to the Meeting of Contracting Parties.

8 PROCEDURE OF INITIATING SUBMISSIONS ON NON-COMPLIANCE

8.1 A submission shall be addressed in writing to the Secretariat, and shall set out:

.1 the matter of concern;
.2 the relevant provisions of the Protocol; and
.3 information substantiating the submission.

8.2 The Secretariat shall forward all submissions within two weeks upon their receipt to the Compliance body for consideration at its next meeting. In cases of submissions other than by a

[18] The issue of confidentiality of proceedings or information is not addressed in the London Protocol.

Party with respect to its own compliance, the Secretariat shall send within two weeks upon their receipt a copy to the Party whose compliance is in question.

8.3 The Party whose compliance is in question will be given every opportunity to present within X months after the receipt of the copy of the submission responses and/or comments on this submission.

8.4 Additional information provided in response by the Party whose compliance is in question should be forwarded to the Secretariat within X months upon receipt of the submission by the Party in question, unless the circumstances of a particular case require an extended period of time. Such information shall immediately be forwarded by the Secretariat to the Compliance body for consideration at its next meeting.

9 CONSIDERATION OF SUBMISSIONS

9.1 The Compliance body shall consider any submission made to it in accordance with paragraph 8.2 with a view to determining the facts and possible root causes of the matter of concern and the resolution of it.

9.2 The Compliance body may reject submissions which it considers are *de minimis*, manifestly ill-founded or anonymous.

9.3 In carrying out its functions, the Compliance body may:

- .1 request further information from the Party whose compliance is in question or from any other Party or all Parties on matters under its consideration;
- .2 consult with other bodies under the Protocol;
- .3 draw upon outside expertise;
- .4 undertake, with the agreement of the Party [or Parties] concerned, information gathering in the territory of that Party [or Parties];
- .5 review the national reports of Parties provided under the Protocol; and
- .6 use any source of information it considers appropriate.

OR:

9.3 In carrying out its functions, the Compliance body may seek or receive and consider relevant information from any source it deems relevant.

10 MONITORING

The Compliance body shall continuously review the consequences that follow out of or are a result of this mechanism.

OR:

The Meeting of Contracting Parties shall regularly review the implementation of the procedures and mechanism set forth in the present decision.

11 OBSERVERS

Non-Parties and representatives of relevant international organizations may act as observers to the Compliance body.

12 COMPLIANCE ISSUES INVOLVING RADIOACTIVE WASTES AND OTHER RADIOACTIVE MATTER

The International Atomic Energy Agency is the competent international body for all issues involving radioactive wastes and other radioactive matter and radiation protection of humans and the ocean environment. Therefore, for compliance matters involving radioactive wastes and other radioactive matter, the compliance group shall refer the matter to the IAEA for technical evaluation and review. The Compliance body shall [abide by] [take into account] the IAEA's evaluation or refer the matter to the Meeting of Contracting Parties.

13 LANGUAGES

Meetings of the Compliance body shall be held in English only. A Party whose compliance is in question and which attends a meeting of the Compliance Group shall be entitled to request interpretation into another official language of the Protocol. Such request needs to be made at least [6] weeks in advance of the meeting of the Compliance Group.

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ANNEX 5

DRAFT PROCEDURES AND CRITERIA FOR DETERMINING AND ADDRESSING EMERGENCY SITUATIONS AS REFERRED TO IN ARTICLES 8 AND 18.1.6 OF THE 1996 PROTOCOL
(Agenda item 3)

1 INTRODUCTION

1.1 Under Article 8.1 of the 1996 Protocol, a permit is not required for the disposal of wastes or other matter at sea "when it is necessary to secure the safety of human life or of vessels, aircraft, platforms or other man-made structures at sea in cases of *force majeure* caused by stress of weather, or in any case which constitutes a danger to human life or a real threat to vessels, aircraft, platforms or other man-made structures at sea, if dumping or incineration at sea appears to be the only way of averting the threat and if there is every probability that the damage consequent upon such dumping or incineration at sea will be less than would otherwise occur. Such dumping or incineration at sea shall be conducted so as to minimize the likelihood of damage to human or marine life and shall be reported forthwith to the Organization".

1.2 Under Article 8.2 of the 1996 Protocol, a Contracting Party may issue a permit for the disposal of wastes or other matter at sea "in emergencies posing an unacceptable threat to human health, safety or the marine environment and admitting of no other feasible solution. Before doing so the Contracting Party shall consult any other country or countries that are likely to be affected and the Organization which, after consulting other Contracting Parties, and competent international organizations as appropriate, shall, in accordance with Article 18.1.6 promptly recommend to the Contracting Party the most appropriate procedures to adopt. The Contracting Party shall follow these recommendations to the maximum extent feasible consistent with the time within which action must be taken and with the general obligation to avoid damage to the marine environment and shall inform the Organization of the action it takes. The Contracting Parties pledge themselves to assist one another in such situations".

1.3 In this connection Article 18.1.6 states that Contracting Parties may develop or adopt, in consultation with competent international organizations, procedures referred to in Article 8.2 including:

- .1 basic criteria for determining emergency situations; and
- .2 procedures for consultative advice and the safe disposal of matter at sea in such circumstances.

2 ACTION TO IMPLEMENT ARTICLE 8.1

2.1 Although a permit is not required for the disposal of wastes or other matter at sea under Article 8.1 of the 1996 Protocol, it is required that such disposal be reported to the Secretariat. This communication should include the available information regarding the details of the situation (including date, time, location, material concerned, circumstances of the event), the necessity of the emergency dumping, and the actions undertaken so as to minimize the likelihood of damage to human or marine life. A Party submitting the report of the occurrence of a *force majeure* situation to the Secretariat would generally use information obtained from the ship's master and other relevant authorities. This information serves to ensure that the case of dumping was in fact in accordance with Article 8.1 of the 1996 Protocol.

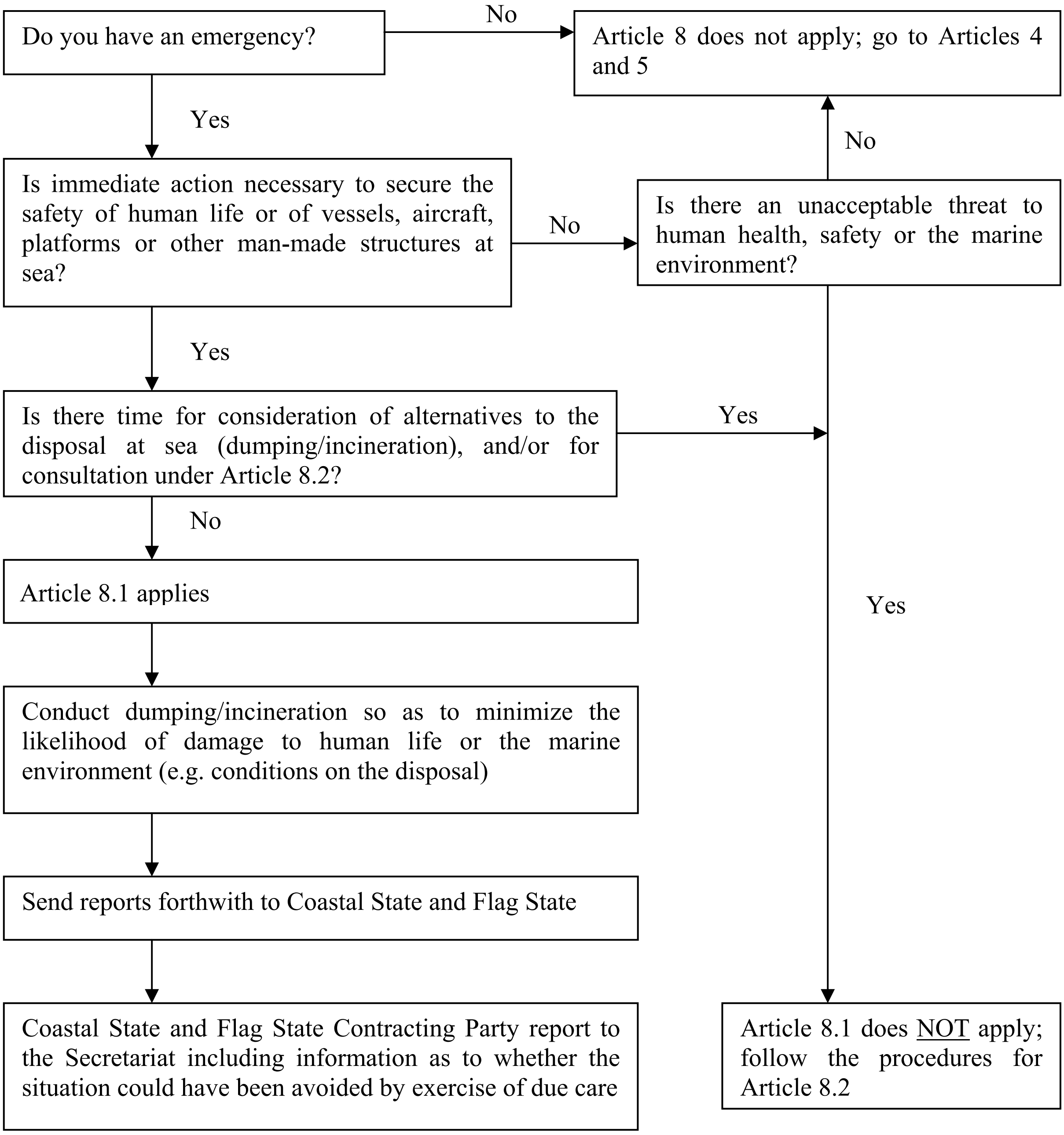
2.2 Two situations can be envisaged. The first being a notification of such an occurrence by a ship's master to the relevant authority of the Party before the dumping occurs; the second being an after the fact report by the ship's master or other relevant authorities. In the first situation there may be opportunity for the Party to provide guidance, in the second situation this is not the case.

2.3 A report on a *force majeure* emergency dumping in accordance with Article 8.1, of the 1996 Protocol, should address the following:

- .1 the necessity to secure the safety of human life or of vessels, aircraft, platforms or other man-made structures at sea;
- .2 the nature of the *force majeure* case caused by stress of weather, or in any other case which constitutes a danger to human life or a real threat to vessels, aircraft, platforms or other man-made structures at sea;
- .3 that dumping or incineration at sea appeared to be the only way of averting the threat and that there was every probability that the damage consequent upon such dumping or incineration at sea was less than would otherwise occur;
- .4 actions undertaken to minimise the likelihood of damage to human and marine life to the maximum extent possible;
- .5 procedures established, if applicable, to monitor the impact of the action;
- .6 the name of the ship, the name of the Master of the ship and the name and address of its owner;
- .7 the port of registry of the ship;
- .8 the last point of departure and the immediate destination of the ship at the time at which the disposal occurred;
- .9 the latitude and longitude of the disposal site and the depth of the sea at that place; and
- .10 a description of the substance disposed of, including:
  - .1 information on the composition and nature of the substance,
  - .2 the quantity that was disposed of;
  - .3 the form of the substance, namely, solid, liquid or gas; and
  - .4 an estimate of the time required for the substance to disappear below the surface of the water.

2.4 The Secretariat should forward such reports to the Meeting of Contracting Parties.

Flow chart for Application of Article 8.1 – Emergency Exceptions



3 ACTION TO IMPLEMENT ARTICLE 8.2

3.1 In cases of Article 8.2 emergency, more time (than under Article 8.1 emergency) is likely to be available, e.g. for prior consultation, for consideration of other alternatives, and for consideration of conditions in relation to disposal at sea. However, in some cases Article 8.2 emergencies are situations requiring action with a marked degree of urgency, and which may preclude thorough consultations and evaluations. In these cases, the Contracting Party would notify the Secretariat as to the actions taken.

3.2 In the implementation of the above provisions the following sequence of actions can be envisaged:

.1 In order to decide that an emergency under Article 8.2 does in fact exist, the Contracting Party proposing to issue a permit for the disposal of wastes or other matter at sea would:

.1 investigate the situation to decide whether or not it poses an unacceptable risk relating to human health, safety or the marine environment; and

.2 investigate possible alternative methods of disposal in order to decide that no feasible solution other than disposal at sea can be found.

.2 Having decided that disposal at sea is necessary, the Contracting Party concerned would:

.1 consult with other countries that may be affected;
.2 consult with the Secretariat for recommendations as to the most appropriate procedures to adopt; and
.3 consult with any relevant regional agreements or programmes, as appropriate.

.3 Upon being informed of the situation, the Secretariat would:

.1 consult with other Contracting Parties;
.2 consult with other competent international organizations; and
.3 decide upon and promptly recommend to the Contracting Party the most appropriate procedures to adopt.

.4 In issuing the permit for the disposal at sea the Contracting Party concerned would:

.1 follow the Secretariat's recommendations to the maximum extent feasible consistent with the time within which action must be taken and with the general obligation to avoid damage to the marine environment; and

.2 inform the Secretariat of the action taken.

3.3 For Contracting Parties being also Contracting Parties to a regional agreement on the prevention of marine pollution by dumping, a consultation procedure adopted within that regional agreement may be substituted for the above procedures provided that it is consistent with the requirements set out below. The Secretariat of the regional agreement will immediately submit any information on emergency situations to the IMO Secretariat, which will then follow, as necessary and appropriate, the procedures developed within the framework of the 1996 Protocol to the London Convention 1972 taking into account the procedure being followed under the regional agreement. In case a consultation procedure adopted within a regional agreement is applied, the Contracting Party concerned should report **both** to the Secretariat **and** the relevant regional organization.

4 ACTION TO BE TAKEN BY THE PARTY CONCERNED IN IMPLEMENTING ARTICLE 8.2

4.1 Assessment of the emergency situation

4.1.1 With reference to paragraph 3.2.1 above, it is apparent that when an emergency situation involving the disposal of wastes or other matter at sea occurs, the first step to be taken by the Contracting Party is to assess the threat or risk to human health, safety or the marine environment. Such assessment should include the following:

.1 The circumstances of the emergency:

- .1 type including chemical composition of material involved;
- .2 location and cause of release;
- .3 amount lost into the environment; and
- .4 potential for further release and expected rate;

Risks relating to human health

.2 The risks relating to human health with regard, *inter alia*, to:

- .1 toxicity to human life:
  - by inhalation;
  - by ingestion; and
  - by skin absorption;

- .2 method of contact:
  - direct contact with material;
  - water supply;
  - food source;

- .3 the impact on health of present and future generations:
  - chronic toxicity;
  - carcinogenic, teratogenic and mutagenic properties of the material; and
  - potential for causing long-term effects;

Risks to safety

.3 The risks relating to safety with regard, *inter alia*, to:

.1 the risk to human life;
.2 the risk to the vessel, aircraft, platform or other man-made structure and to other vessels, aircraft, platforms, or other man-made structures in the area;
.3 the risk to other legitimate uses of the sea; and
.4 in case the situation occurs in port, the risk to surrounding buildings and adjacent living and working areas.

Risks to the marine environment

.4 The risks relating to the marine environment with regard, *inter alia*, to:

.1 acute and chronic toxicity;
.2 short and long range transport of air pollutants from incineration;
.3 risk to commercial or recreational fisheries from toxicity and tainting;
.4 the impact of disposal at sea versus uncontrolled release;
.5 habitat destruction or alteration;
.6 introduction of alien species, pests, or diseases; and
.7 other marine environmental quality concerns.

4.1.2 Disposal at sea (i.e., dumping or incineration) should only be considered by the Contracting Party after an assessment of the waste concerned and the proposed location for dumping, utilizing the "Guidelines for the Assessment of Wastes or Other Matter that May be Considered for Dumping" (LC 19/10, annex 2) to the maximum extent possible under the circumstances and, where appropriate, the Specific Guidelines developed under the Protocol (LC/SG 24/11, annexes 3 to 10). In particular, an evaluation is required of the following factors:

.1 Alternatives to disposal to be considered as a first priority, including:

.1 re-use, reclamation and recycling;
.2 off-site recycling;
.3 destruction of hazardous constituents; and
.4 treatment to reduce or remove the hazardous constituents through biological, chemical or physical treatment;

.2 Alternative methods of disposal to be considered, including:

.1 landfill and soil disposal;
.2 well injection;
.3 incineration on land;
.4 storage; and
.5 partial treatment prior to ocean disposal.

.3 Assessment of the environmental impact of each alternative:

.1 adverse environmental effects of alternative actions;

.2 impact on living and non-living marine resources, navigation, recreation and other uses of the ocean; and
.3 evaluation to determine which alternative has least overall environmental impact.

.4 The disposal site designation and monitoring:

.1 physical, chemical and biological information relating to the proposed disposal site;
.2 proposed method of release of material at the site;
.3 proposed times and dates of disposal; and
.4 monitoring to assess the impact of the material on the marine environment.

4.2 **Consultation**

4.2.1 With reference to paragraph 3.2.2 above, once it has been determined that an unacceptable risk to human health, safety or the marine environment exists and that ocean disposal is the only feasible solution the Contracting Party shall consult with other countries which may be affected, and with the Secretariat. The information provided initially by the Contracting Party will be dependent upon the urgency of the emergency situation.

4.2.2 All the significant information used in making the determinations in 4.2.1 above, in light of the criteria listed in 4.1 above, should be provided to other countries which may be affected, and to interested regional agreements or programmes as appropriate, and include:

.1 type including chemical composition of material;
.2 amount of material to be disposed, location of disposal site and dates of disposal;
.3 risk to human health, or safety of human life or vessels;
.4 potential adverse impacts on the marine environment;
.5 alternatives considered;
.6 potential impact of action/no action on other countries;
.7 proposed actions to minimize potential adverse impacts; and
.8 proposed monitoring programme to determine impact.

4.2.3 At a minimum, the information provided to other countries (paragraph 4.2.2 above) should be submitted to the Secretariat and also include:

.1 countries the Party has consulted with;
.2 recommendations of the other countries;
.3 extent to which the recommendations have been adopted.

In addition, the Contracting Party should submit to the Secretariat all significant information mentioned in paragraph 4.1 above.

5 ACTION TO BE TAKEN BY THE SECRETARIAT IN IMPLEMENTING ARTICLE 8.2

5.1 Consultation within the IMO Secretariat

5.1.1 In implementation of paragraph 3.2.3 above the Secretariat should undertake a review of the submissions by the Contracting Party to ensure that it has done the following:

.1 demonstrated an unreasonable risk to human health, safety or the marine environment;
.2 evaluated other alternatives and found no other feasible solution;
.3 avoided damage to the marine environment to the maximum extent possible;
.4 established procedures to monitor the impact of the proposed action; and
.5 consulted with other countries that may be affected and incorporated their recommendations into the proposed action where appropriate and feasible.

5.1.2 If the Secretariat finds that further review and analysis is needed, the following action should be taken:

.1 refer specific questions to competent international organizations;
.2 consult with other Contracting Parties or countries which may be affected; and/or
.3 consult with independent experts nominated by Contracting Parties.

5.2 Recommendations by the Secretariat

5.2.1 The Secretariat should, after consultation with other competent international organizations, experts and Contracting Parties, as appropriate, promptly recommend appropriate procedures that should be adopted by the Contracting Party prior to disposal. Due account should also be taken of any recommendations made by countries which may be affected by the proposed action. The Contracting Party shall follow these recommendations to the maximum extent feasible consistent with the time within which action must be taken.

6 REPORTING BY THE PARTY ON ACTION TAKEN IN IMPLEMENTING ARTICLE 8.2

The Party shall inform the Secretariat forthwith of the action taken and may provide any additional facts relating to the disposal of the material it considers appropriate. The Secretariat should inform all Parties of the emergency situation and actions taken as soon as practicable.

7 PROCEDURE FOR CONSULTATION

7.1 With a view to facilitating consultation among Contracting Parties and with competent international organizations, it would seem appropriate for each Contracting Party to designate a "focal point" for all communications of this nature. The Secretariat would collect the requisite information from Governments (name, designation, address, telephone and fax numbers, email, etc.) and prepare a comprehensive list for circulation to all concerned. The Secretariat would also communicate with other organizations including UNEP, WHO, FAO, UNESCO/IOC, UN and IAEA in order to arrange for the nomination of a suitable "focal point" in each case to expedite consultations relative to the 1996 Protocol.

7.2 Upon being informed by the Contracting Party concerned of the circumstances of the emergency situation including the views of other States consulted by the Contracting Party, the Secretariat should proceed to arrange for consultations with a view to formulating appropriate recommendations. As a general rule, consultations will occur by telephone, email, fax, conference calls, and/or video conference. In rare circumstances, the Secretariat may convene a Special Meeting of Contracting Parties or a smaller panel of Contracting Parties, provided the urgency of the situation allows enough time.

7.3 It also seems possible that consultation with other competent international organizations might proceed simultaneously with, and in a similar manner as, consultation with other Contracting Parties. The Contracting Parties might also consider the possibility of including countries likely to be affected in such consultations.

7.4 To facilitate the consideration of future cases involving emergency disposal at sea, the Secretariat will assemble and keep on file for ready reference information on actual cases dealt with, including details of methods of disposal adopted, etc.

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ANNEX 6

SHORT-TERM AND LONG-TERM STRATEGY TO IMPROVE REPORTING UNDER THE LONDON CONVENTION 1972

(Agenda item 4)

SHORT-TERM STRATEGY

1 Reporting format

1.1 An electronic format of the reporting form for permits issued should be developed so that it could be used directly by the Secretariat in preparing the compilation reports of permits issued. An explanation should be provided on how the various sections of the reporting form should be filled.

1.2 The reporting form should be distributed by the Secretariat to all Contracting Parties and be put on the London Convention Web-site.

1.3 The normal procedure should be maintained regarding the annual invitation by circular letter to all Contracting Parties inviting them to report. However, the circular letter should include an encouragement to submit reports using the electronic reporting format. It should also explain why the information is needed and the type of assessment that will be carried out on the reports (see long-term strategy).

2 Letters to Ministers

2.1 The Chairman of the Consultative Meeting should write to those Contracting Parties (Ministers of Environment, or Transport) which had not reported on their dumping activities for the last five years, requesting them to comply with their obligation to report under Article VI(4) of the Convention.

3 Assistance from UNEP

3.1 UNEP should be contacted on its offer to provide, if necessary, funds to participate in the costs of a consultancy for identification of the problems with reporting and suggest ways to overcome these difficulties.

LONG-TERM STRATEGY

4.1 A database on dumping reports should be developed and, eventually, published on the Web-site.

4.2 A correspondence group should make an intersessional assessment every 2 to 5 years of the dumping reports. This assessment report should be considered by the Scientific Group and, after approval by the Consultative Meeting, also be published on the Web-site.

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ANNEX 7

GUIDELINES FOR THE SAMPLING AND ANALYSIS OF DREDGED MATERIAL INTENDED FOR DISPOSAL AT SEA

(Agenda item 5)

EXECUTIVE SUMMARY

In the framework of the London Convention 1972 and the 1996 Protocol thereto generic "Waste Assessment Guidance" (WAG) were approved in 1997 for eight different types of waste allowed to be dumped at sea. One of them is dredged material.

Complementing the Waste Assessment Guidance, specific guidelines for assessment of the different wastes were developed and adopted in 2000, among them the Specific Guidelines for Assessment of Dredged Material

To further support practical implementation of this generic guidance, particularly for dredged material, the Scientific Group prepared an overview of information covering some of the main working steps:

- selection of substances of concern and effects to be determined;
- field sampling; and
- physical, chemical and biological analysis.

The guidance contained in this document addresses the points above and is an amalgamation of two documents produced for the London Convention 1972 and the 1996 Protocol thereto:

- Guidelines for the sampling of sediment intended for disposal at sea (LC 24/17, Addendum 1); and
- Selection and analysis of physical and chemical parameters for the assessment of dredged material quality (LC/SG 26/12, annex 2).

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Background

This is an introductory guide for those with limited experience in sediment sampling and analysis.

It provides considerations and good practices for developing sampling plans in an effort to help readers decide how to organize and prioritize their sampling activities to suit their particular goals, experience, budget and technical capabilities.

The document also provides strategic guidance in making cost-effective, practical and environmentally sound decisions on what to measure and how to measure it, and to assess sediments on a case-by-case basis. It reviews what to consider before analysis, selecting variables, conducting the analysis and important aspects of quality assurance and control.

Assessment of dredged material will include chemical and physical analysis and may also include chemical analysis of water and biological tissue. This report presents general guidance (Figure 1) on sampling and on selecting and analysing physical, chemical, and biological parameters that are useful for the evaluation of sediments, mainly dredged material.

This document should provide generic guidance and make it clear that those who can implement the full guidance now should do so, while those that cannot should implement what they can as soon as practical and make it a national goal to develop the capability to progressively implement the remaining aspects in as few years as possible.

In areas where environmental evaluations of dredged material are not yet standard practice, it would be unnecessary and ill advised to attempt to begin with detailed implementation of all aspects of this guide. It would be equally ill advised to delay initiation of progressive implementation of a programme of environmental evaluation of dredged material.
Such a programme could begin with general surveys and advance to routine implementation of more complex evaluations as environmental experience and sophistication are developed.
It is far better to conduct basic evaluations now than to do nothing because of a current inability to conduct sophisticated evaluations (after IADC 1997).

This guide is geared primarily to the Contracting Parties of the London Convention 1972 and its 1996 Protocol but it may be useful to anyone interested in best practices for sampling and analysing sediments. It is not broken down by players or stakeholders' roles (as this may vary according to project and area) but according to tasks to be done to make a plan and execute it. It is intended for:

- middle-managers and newcomers in the field of dredging having some scientific-technical knowledge;
- regulatory bodies that oversee and authorize ocean disposal of dredged material for which sediment sampling is required;

- programme managers who may have limited scientific background to make strategic or policy decisions on dredging and related activities;

- decision-makers such as port managers or licensing authorities, consultants and other persons or groups involved in dredging projects in areas where there is not an established expertise in environmental evaluations of dredged material;

- those planning the dredging of sediments; and

- those undertaking sediment sampling in the field.

This technical guidance has been developed in the form of a document that can be improved and updated in the future in the light of new technical developments and the results of scientific research. Suggestions from the readership for such improvements are welcome.

1.2 Structure of the Document

There are several working steps towards obtaining representative information on sediments of interest (see figure 1):

- an initial assessment in which the goals and the existing information are analysed;
- a planning phase, in which the sampling plan and the analytical plan are prepared;
- an execution phase, in which the sampling is carried out;
- an analytical phase, in which the required analyses are carried out; and
- an evaluation phase, in which the collected information is used to help reach needed decisions or actions.

The intent is to lead the reader through these various steps, recognising that the process may be "iterative," meaning that as questions are answered and data become available at one step, they may lead to further questions and require a reconsideration of previous steps. The steps are nonetheless numbered to move the reader towards the final outcome of producing information that will enable defensible and cost-effective decision-making.

Readers with limited experience should note that more information may be provided than is needed for simple sampling or analysis and that one body may not be responsible for all the steps. Readers are encouraged to use the sections that are relevant and adapt them to their own situation.

Step		Activity	Chapter
A	Initial considerations	Check task / goal Check stakeholder requirements Collect project information Decide on need for further data	**2**
B	Selection of parameters for analysis	Establish parameter list Prepare an analytical plan Check available personnel and equipment Prepare a quality control plan	**3** **4**
C	Sampling plan	Prepare a sampling plan Prepare a quality control plan Prepare to sample	**5**
D	Field sampling	Execute sampling Store and prepare samples	**6**
E	Physical, chemical and ecotoxico-logical analysis	Execute analyses Assess data quality	**7**
	Sediment quality assessment	Evaluate data Report results	**WAG ***

Figure 1. Considerations for planning and execution of sediment sampling (* WAG = Waste Assessment Guidance of London Convention, *Specific Guidelines for Assessment of Dredged Material*)

2 INITIAL CONSIDERATIONS

For the assessment of the quality of dredged material it is desirable to obtain meaningful and sufficient information at minimum cost and effort.

2.1 Initial project assessment

In order to minimize cost and maximize efficiency it is helpful to carry out an "*initial assessment*".

2.2 Initial Assessment of Existing Data

Is there a need to sample or analyse additional data?

MSC/Circ.1137Sediment sampling and analysis can represent a substantial investment of time and money. Sometimes, a regulatory agency will provide instructions as to what it regards as necessary and sufficient sampling and analysis. Often, however, sampling and analysis are determined on a case-by-case basis. In addition, the development of the analytical plan and sampling plan involves co-operation among several different parties such as the dredging contractor, programme manager, regulator, laboratory etc. Each may not be involved at all the stages but should be aware of the whole process.

Figure 2: Field sampling underway

The following questions look at the need for and required extent of sampling and analysis.

1. What is the intended dredging project and what is already known about the material?

   Volumes, depths and basic particle size characteristics will be part of scoping the potential dredging work. The timing and methods to be used in the planned dredging project should also be considered as these can affect what components of the environment might need sampling and to what extent. If, for example, the project is to use equipment that increases sediment dispersion, it could raise additional concerns about conditions in the water column. This project information can also give information on contaminants of concern.

2. Who will be involved and what are their roles?

   It is important to identify any laws and policies that control the intended project. In addition to the London Convention, other regional seas conventions may apply which have slightly different information requirements or criteria. See IADC, 1997 volumes 1 & 2a on "players" and legislation.

   National, state (provincial, territorial, etc.) or local legislation and policy may exist that will also guide the need for, and the level of, sampling and analysis. In some cases, these controls may be more stringent than the international requirements. Identifying the relevant legislation also helps to identify who may be interested in the development of the plans, participation in the fieldwork and the use of the results. Those who grant funding or who are responsible for paying for the sampling project or laboratory work will also set real constraints on what can be done.

Finally, the level of public or political interest in a given project can affect the need for sampling and analysis. Their involvement, in turn, could influence anything from the area to be examined to which questions need to be answered (IADC, 1997a).

3. What is wanted/needed?

Clear and achievable goals are essential. Goals can be framed with specific questions or with testable hypotheses. For example, if the goal is to decide whether sediment can be dredged from point A and deposited at sea at Point B, then the main question might be: "*Does chemical contamination exceed set criteria?*". The final questions must make it clear what information will need to be collected to make a sound decision. These goals and questions form the basis of the study plan that includes both a sampling and analytical plan.

Definitions of goals are usually undertaken by management or a regulatory agency and can require modification or negotiation once faced with practical limitations of time, equipment, budget, etc. Further, the definitions of the goals should include an assignment of priorities if there is more than one goal. This will give direction to any adjustments or revisions that need to be done in the event that all the original goals cannot be met (Arctic Laboratories 1985).

Decision-making frameworks or criteria are beyond the scope of this document but readers are encouraged to consult some of the many national and international decision making framework documents (Appendix 4, section 4.2)

4. What data are already available?

Historical information, information on current sources of pollution, related data from research or previous permits for those sites, etc., should be studied. This is an iterative step. Research on historical data is done first to help scope out the areas of concern and later to confirm any additional information that might be available on the chosen areas. Generally, if recent work shows contaminants are of little concern, additional information may not be needed.

5. Is this enough to make a decision?

Section 4.2 of the *Specific Guidelines for Assessment of Dredged Material* provide for the exemption of dredged material from detailed characterization under specific circumstances:

Specific Guidelines for Assessment of Dredged Material:

"Dredged material may be exempted from the full characterization requested in paragraphs 4.3 to 4.9 if it meets one of the criteria listed below:

1. *dredged material is excavated from a site away from existing and historical sources of appreciable pollution so as to provide reasonable assurance that the dredged material has not been contaminated, or*
2. *dredged material is composed predominantly of sand, gravel and/or rock, or*
3. *dredged material is composed of previously undisturbed geological materials.*

Dredged material that does not meet one of these criteria will require a full characterization to assess its potential impact."

The "Guidance on Assessment of Sediment Quality" developed by Global Investigation of Pollution in the Marine Environment (GIPME 2000) further suggests the use of a weight of evidence approach to determine additional sampling needs. In addition to particle size and obvious sources of pollution, it suggests looking into:

- uses of the site;
- ecological or economic value of the resources;
- obvious problems (lesions on fish, etc., contaminated seafood from the area); and
- comparison to reference sites.

"*If the weight of evidence reveals no significant cause for concern, no further assessment of chemical contamination or associated biological effects is required*" (GIPME 2000). This advice is useful and may be followed in the absence of legislation or policy requiring otherwise.

If a decision based on available information can be made, sampling and analysis would only be done to confirm the decision, if at all.

When further information is needed

Working through the basic questions in a checklist should help the investigator to determine cases where sampling and analysis are not needed, or to layout pre-determined limitations and requirements for a sampling and analytical programme. Within the initial assessment to be carried out, there needs to be due consideration of what can reasonably be obtained based on the realities, e.g., the following issues:

Issue	Questions to be answered, e.g.
Planned dredging project	Details of the planned dredging project? Are there contaminant sources of concern? Is there available and useful historical information?
Type of study and design	Is it a pilot study, local investigation, monitoring, or other type?
"Players in the field" involved	Who are the "stakeholders" and other "players in the field"? What are their requirements?
Legal requirements	What is required by applicable laws? What is required by existing contracts?
Analytical capacity	What analytical capacity (equipment, expertise, personnel) is available?
Budget available	Who will commission, who will pay for the investigations? How much money is available?
Time frame	What are the time lines for the investigations to reach decisions?

A plan to achieve the main goals can then be constructed. This will involve the development of analytical and sampling plans.

3 SELECTION OF PHYSICAL, CHEMICAL AND BIOLOGICAL PARAMETERS

Selection of variables and sampling methods should always be undertaken with good appreciation of the data analyses intended.

3.1 Existing data sources

Historical and project data need to be evaluated (see Section 5.3).

Historical data on physical, chemical and biological consequences of previous dredging and disposal in the area may help indicate:

- (1) what has been demonstrated to be a problem,
  (2) what has been demonstrated not to be a problem, and
  (3) what is not yet known at the site.

  Category 3 deserves the most investigative effort, 2 less, and 1 least, recognising that more detailed information may be required to improve previous management strategies for identified issues of concern.
- What is available from physical analyses and engineering properties of sediments for preparation of a dredging bid (density, particle size distribution, etc.)?
- Adequacy of past sampling coverage as a model for the next sampling.
- Applicability and acceptability of past parameter list, detection limits, need for toxicity tests and appropriate species, etc.?
- Issues of interest to specific stakeholder groups.

- Potential examples for sampling and analysis plans, quality assurance and quality control plans, etc.

- Logistical constrains associated with sampling and analysis.

- Improvements for stakeholder participation and public relations.

3.2 Additional or new characterization

In general, the initial evaluation of a new-work/capital dredging project would require more comprehensive and less detailed analyses (in terms of both spatial coverage and parameters addressed) than subsequent evaluations of the same project or evaluation for a maintenance dredging operation. It may not be helpful to devote great effort or resources to intensively sampling and analysing a small, discrete area (either horizontally or vertically) if the logistics of the dredging programme mean that a larger area will be considered and dredged as a single unit.

3.3 Tiered Approach for Determining Parameters

3.3.1 Potential sources of contamination

It may be helpful to construct a table of chemical, physical and biological parameters for consideration. They should be based on a "reason to believe" and on an evaluation of potential contaminant sources.

A pragmatic way to proceed may be:

- to start with a basic list of contaminants,
- to add/delete parameters based on ”a reason to believe" they are likely to be or not be important in the particular project being evaluated,
- to consider inclusion of degradation products in addition to parent compounds,
- to consider including contaminants commonly associated with some of the sources (e.g., particular types of industries) that may influence the status of the material to be dredged.

Such a list may assist in identifying why certain parameters should not be required for analysis, or why certain parameters that may otherwise not have been considered should be included. While some parameters may frequently be of concern, it is important to tailor the selected parameters for each project to the specific situation under evaluation, where this is not counter to local regulators' requirements.

Unless required by regulators, a "standard list" of parameters should not be selected by default for analysis for all projects.

It is counterproductive to include parameters for which reliable routine analytical methods with environmentally relevant detection limits do not exist or cannot be achieved. However, in areas that are still developing their expertise, it may be appropriate to use analytical requirements to encourage further refinements of analytical capabilities. It is also often counterproductive to include parameters for which no regulatory or interpretative guidance exists. However, lack of easily found guidance should not be used as a long-term excuse to avoid dealing with a legitimate contaminant of concern. Where chemical guidance does not exist, proponents may consider using alternative testing to determine effects, or lack of effects. Biological toxicity tests or appropriate models, combined with a good exposure analysis could be considered.

A biological toxicity test is an experimental procedure or method that makes use of a biological system (e.g., whole organisms, tissues, cells) to provide information about chemical exposure or effects. Numerous tests have been developed and used to study exposure and effects of chemicals in water and sediment (see Appendix 4). In selecting biological tests it will be important to consider:

- The components of the environment (water, sediment, tissue);
- The endpoint or what effects are of concern n(mortality, growth, reproduction); and
- The relevance and sensitivity of the species to be tested.

In order to save efforts and money it is recommended to use existing data to the maximum extent allowed by project goals and quality assurance/quality control considerations.

3.3.2 List of analytes to be considered

Appropriate analysis to assist in environmental evaluation of a proposed dredging project may consider the dredged material and the disposal site. Based on the above considerations, parameters may be considered but not limited to:

- Physical parameters (if not yet investigated for dredging bids), e.g.,
  - grain size distribution (horizontal (within the area), vertical (to depth of dredge cut)
  - percent solids/water
  - density

- Chemical parameters, e.g.,
  - total organic carbon (TOC),
  - heavy metals, arsenic
  - polycyclic aromatic hydrocarbons (PAH),
  - biocides,
  - chlorinated organics

- Biochemical and biological parameters, e.g.,
  - sediment toxicity:
    - Solid-Phase Toxicity Tests
    - Water-column Toxicity Tests
    - Bioaccumulation Tests
  - contaminant bioavailability,
  - benthic communities (composition), e.g. sea grass or coral reef communities, kinds and abundances of fish and invertebrates in the area.

An annotated list of the chemical, physical and biological parameters to be analysed should be developed on a site-specific basis. The annotations should explain what each of the analysis would demonstrate about the dredged material and how this information could be used in making management decisions. A PIANC Report (1998) discusses the relevance of these parameters in more detail.

For example:

- Why would TOC be measured, how could the results be used to standardize the results of other tests, and what is the advantage of doing so?

- What does density of the sediment reveal about the sediment, and how could the results be used as part of the decision process?

- What standards, background data, action levels or other benchmarks are available to assess the contaminant status of sediments to be disposed and how will these be used?

Justification of the list of variables:

In general, data should only be generated if a specific, concrete use can be identified, and the way the data will be interpreted can be described:

- ➢ An annotated list helps ensure that every analysis is performed for a specific reason, so that the time, labour and money spent in sampling, analysis and evaluation of the data are justifiable.
- ➢ Such a list helps identify and prevent duplication, oversights or gaps in necessary information, or the generation of unnecessary information.

It also provides a justification for the analytical budget.

For example: Analysing compound X to "characterize the sediment" is not sufficient; this objective is too vague and no basis for interpreting the data is described. An adequate reason might be:

"Compound X will be measured to determine its presence, distribution and concentration in the sediment to be dredged. Concentrations in the dredged material will be compared to concentrations in sediment from a reference area (or to applicable regulatory criteria, etc.). If concentrations in the dredged material substantially exceed concentrations in the reference material, sediment toxicity tests may be necessary (or: If concentrations exceed applicable regulatory criteria the dredged material will be considered unacceptable for the use the criteria regulate)."

3.4 Availability and reliability of laboratories

A wide variety of chemical, physical and biological parameters might potentially be relevant for evaluation of a dredging and disposal project. The analytical methods for potentially relevant parameters range from simple, straightforward and reasonably available throughout much of the world, to complicated, difficult and not practically available in most countries.

It would be counterproductive to request analyses that cannot reliably and reasonably be performed in association with the project being evaluated.

For example, if a given chemical analysis could only be done after several days of transport to get the samples from the dredging project to the laboratory at tropical temperatures, and in addition, the performance of that analyses was new to the laboratory (or they were untrained or unequipped to reach the required detection levels), the results may be of little value.

No matter how desirable sophisticated analyses may be, it is usually best to request analyses that are logistically practical and within the demonstrated capabilities of the available laboratories. However, it may be appropriate to encourage the available laboratories to progressively expand their capabilities.

3.5 Standardized methods

Standardized analytical methods have been developed for many physical, chemical, biochemical and biological parameters, e.g. grain size, chemical, elutriate and toxicity testing. Judging the suitability of a particular test for an application should be based on the quality and quantity of scientific information available regarding the test itself and its application with field-collected sediments. For a list of standard methods see Appendix 4.

How to proceed:

- Direct contacts and queries to experienced colleagues and institutions worldwide may provide useful information on practical aspects of intended testing.
- An Internet search may help to find suitable methods.

Note that for many chemicals, a range of difficulties may be encountered in obtaining representative and reliable data due to sample heterogeneity, extraction, analysis and physical and chemical interferences.

The selection, adaptation or new development of a specific analytical method meeting given quality objectives is a difficult task requiring reliable expertise.

3.6 Detection limits

The detection limits required are usually set by the determining authority or a standardized method. They should be realistic, locally relevant and tied to action levels (cf. section 7.3) or similar benchmarks. Only if the detection limit for a contaminant is lower than the applicable regulatory level, it is possible to determine compliance with the regulatory requirement.

Not all laboratories will be able to meet the specified detection limits with their current equipment and methodologies. However, detection limits need to be sufficiently low to determine background levels accurately, particularly where biological testing with reference levels are to be used, or to reliably detect organic substances that may have biological impacts at very low environmental concentrations. The laboratory used must be capable of achieving the recommended detection limits.

Detection of very low levels may be more affected by matrix interference in certain sediment samples. In this situation, the laboratory should strive to achieve the lowest detection limit possible in these samples and this be documented in the report.

3.7 Frequency of measurement

Generally this will depend on the quantity of material involved, sensitivity of the receiving environment, known inputs of contaminants and any problems revealed by previous investigations.

Where previous investigations have shown the sediment quality to be relatively consistent over time, and there are no new pollution sources, it may be necessary to sample only every 3-5 years. However, where sediment chemistry is changing (due to variable flux of pollutants, new pollution sources, spills, disturbance of contaminated sediments upstream or progressive removal of the contaminated layer), sampling should be carried out for each major dredging program.

Often, where there exists chemical or toxicity data pertaining to the dredging site sediments, of quality acceptable to the relevant authority, there will be an agreed time period for which such data remains valid.

4 BUILDING AN ANALYTICAL PLAN - DETAILED CONSIDERATIONS

4.1 Analytical plan

Within the initial assessment it is very helpful to set up an "analytical plan" focusing particularly on the questions of selecting and analysing chemical parameters. Most of the considerations that go into the development of this "analytical plan" will also be relevant to the sampling plan. Therefore, both sampling and analytical plans should be constructed concurrently.

A few notes are added to point out that a high degree of flexibility is necessary in developing an analytical plan:

.1 Insistence on a defined level of quality assurance will pre-determine the sampling, sample storage and analytical methods that are appropriate. An analytical method, for example, that cannot be quantitatively standardised, will not satisfy certain QA requirements and should therefore be used with extreme caution.

.2 The choice of an analytical method will dictate sample storage conditions, sub-sampling methods, sample size and laboratory equipment.

.3 The quality assurance programme will influence the level of reporting and documentation required.

.4 Limitations imposed by components of the plan may necessitate a revision to the budget, scope and/or assumptions of the working plan (conversely, changes in budget may necessitate revisions to the plan).

.5 If a plan cannot be devised within the constraints described above then the goals may have to be revised.

4.2 Quality Assurance and Quality Control (QA/QC) for chemical parameters

Quality assurance and quality control are essential to ensure that analysis and data collected meet the requirements for assessment of dredged material.

QA/QC involves practices undertaken to assure the reliability of the data that result from the analyses. Good laboratory procedures include:

- Written standard operating procedures (SOP) for all work carried out on the project, A SOP is a detailed, laboratory-specific description of all actions taken to accomplish biological effect measurements or chemical analysis

- Documentation that shows that all procedures of sample handling and analyses were followed successfully.

- Routine analytical quality control protocols should be used involving the analysis of blanks and reference materials with each batch of samples.

- The reference materials should include both Laboratory Reference Materials and independently produced Certified Reference Materials. In addition, the basis of certification must match the methods chosen for sample analysis.

- Quality control charts should be constructed allowing day-to-day analytical performance to be monitored. If the results obtained for the reference material in any batch of samples fall outside established acceptance limits then the batch should be rejected and re-analysed.

- Participation in laboratory proficiency schemes is advised and involves the (regular) analysis of samples, in which the analyte concentrations are known but undisclosed.

- Chain of custody documentation to ensure analytical data are traced to actual sample and sample location.

As with the QA/QC plan for sampling, an important consideration in planning for analysis of dredged material is the type and number of quality control (QC) samples to analyse (see section 5.7). The sampling plan will indicate the number of QC samples and these should be factored into the cost of analysis.

4.3 Quality Assurance and Quality Control (QA/QC) for biological parameters

Where biological testing is required, there will also be particular QA/QC considerations to help ensure that observations made are valid. For additional information see PIANC (2004, in prep.).

As biological tests measure effects in living organisms, they are a relative measure rather than an absolute measure. The QA/QC programme should therefore be careful to take into account measurements that will help the investigator to distinguish between experimental error, natural variance including variations in ambient conditions and any effects due to anthropogenic contaminants in dredged materials.

The following are suggested elements of the biological QA/QC programme:

.1 Data Quality Objectives (DQO)

A process for establishing Data Quality Objectives (DQO), e.g. list the kind of variables that must be measured or monitored, the level of statistical significance that is required.

.2 Documented Standard Operating Procedures (SOPs)

A number of protocols for biological tests have been published that can serve as the basis for SOPs that would be implemented by individual testing laboratories. (Appendix 4).
Test performance conditions:

Observations must be made during the conduct of a biological test to document any deviations from conditions that are specified within the SOPs. These observations generally include measurement of various water or sediment quality parameters, e.g., temperature within the test chamber, concentration of dissolved oxygen, pH, salinity, water hardness and other specified or relevant conditions. These measurements are performed to provide documented confidence that any effects observed at the conclusion of the test are not due to poor environmental conditions unrelated to the presence of contaminants.

.3 Observation of positive control performance

A positive control test is performed as a means of documenting the sensitivity of the pool of test organisms to be used in a specific biological test of sediment. It is intended to identify batches of organisms that have an abnormal response to an exposure to contaminants, for instance, due to poor health.

.4 Control charts

A control chart is generated within the testing laboratory using the same test organism and contaminant to gage whether the organisms evidence signs of significant, unusual contaminant tolerance or sensitivity.

.5 Observation of negative control performance

The negative control sediment is used to assess the good condition of the test organism under laboratory conditions when not exposed to contaminants. It is essentially free of contaminants and of any other characteristics that could adversely affect the test organism. Poor performance by test organisms in the negative control sediment measured at the conclusion of the test may be caused by poor health in the test organisms or by deviations from experimental conditions specified in the protocol. In any event, failure to meet the negative performance control standard can justify the need to repeat the biological test.

.6 Taxonomic verification of test organisms

Because biological tests make use of organisms rather than mechanical instruments to assess sediment, care must be taken to ensure that the species of organism called for in the protocol is what is actually used in the biological test.

.7 Data management procedures

Data collected during the conduct of a biological test must be collected and handled in a manner that preserves its accuracy and quality.

.8 Audits and accreditation

During the conduct of biological tests, checks must be made and documented to ensure that the SOPs are accurately followed. These audits at (contracting) laboratories should be done by employees of an independent or regulatory organization. In some areas, organizations exist to accredit laboratories for particular test proficiency. These can be established by government or by the private sector or both and usually include "blind testing" on sediments of known toxicity (etc) at a certain frequency (once a year etc).

.9 Data Transcription

The SOPs should also take account of the possibility of errors occurring in data transcription. Accordingly, data verification at all stages of data transcription need to be included in the SOP.

5 BUILDING A SAMPLING PLAN – DETAILED CONSIDERATIONS

5.1 What is a Sediment Sampling Plan?

A sediment sampling plan is a document that is written to help those who need to sample and those who need to make decisions based on the results, to think through, discuss and agree on how sampling should be done so that the data that emerge from the sampling are of a quality and quantity sufficient to allow sound decision-making and project planning. To achieve this goal, a clear purpose, objective and set of testable hypotheses must be agreed to and form the basis of the plan.

There are several components necessary to develop a successful sampling plan. The planning process is illustrated in Figure 1. In summary, the plan will contain the goals and hypotheses, description of the study area and available data, maps showing design, number and type of samples, QA/QC and sampling protocols, personnel and equipment, transport and storage, and contingency and reporting plans.

5.2 Types of Surveys and Testable Hypotheses

International Organisation for Standardisation (ISO 2000) identifies different types of sampling surveys, according to the aims and required precision of results. For the purposes of characterizing dredged material, the survey will usually take the form of an environmental description.

Pilot survey

A pilot survey is a simple assessment of physical, chemical, and/or biological conditions in the bottom sediments to be dredged. The survey provides a coarse assessment of environmental conditions and can provide the basis for the development of a detailed sampling programme for permit assessment. Examples could include examining particle size distribution or preliminary chemistry.

A testable hypothesis might be: *"Sediments intended for dredging do not exceed 20% silt and clay."*

Environmental description

Environmental description surveys are used to develop a sediment assessment suitable for evaluating dredged material proposed for ocean disposal. This should be based on a detailed chemical, physical, and biological investigation of the sediments, as appropriate to the circumstances. The investigation provides the basis for characterization of the environmental conditions in the areas in question, according to specified environmental 'norms' or by comparison with the sediments in other representative areas (reference areas).
A testable hypothesis might be: *"Concentrations of contaminants in sediments of area x do not exceed National Action List levels."*

Reference Stations

If there is a need to carry out physical, chemical or toxicity testing, or if an assessment is be done by comparing sites, reference stations may be established outside the dredging area. Reference stations should be as close as practicable to the site of interest but without any influence from point-source discharges or previous discharges of dredged material, and reflect ambient conditions, that may contain background levels of contaminants. Some administrations establish standard reference sites with particular characteristics they are interested in controlling (e.g. a sandy and a fine-grained site may be established where the levels of contaminants, ammonia, the particle size, or other variables of interest are known (Environment Canada (EC) 1995, PSDDA 1987)). Sampling at reference stations should be carried out in conditions as similar as possible to those at the regular sampling stations (i.e. similar depth and sediment type) (ISO 2000).

5.3 Historical and Project Data

Historical data and data collected as part of the preparation for the dredging project need to be evaluated to determine how the environmental context of the proposed dredging project, the dredged material disposal location and the choice of dredging methods will influence the physical, chemical and/or biological analyses necessary for appropriate evaluation of the project.

Available current-use or historical data should be collected as early in the process as possible. These data can be used to assess the need for sampling and analysis, and to direct the development (and ultimately the implementation) of the sampling and analytical plans. Data that should be considered include the following considerations

- Potential source and distribution of contaminants;
- Physical, chemical and biological characteristics of the water column, bottom and the surrounding catchment area (e.g. surrounding land area) at the <u>dredging site;</u>
- Physical, chemical and biological characteristics of the water column, bottom and surrounding catchment at the <u>disposal site;</u>
- Other activities that may affect the <u>dredging or disposal areas</u> such as aquaculture, navigation, commercial fishing and recreational activities;
- Dredging, transportation and disposal equipment likely to be used; and
- Seasonal meteorological and hydrological influences on the physical, chemical and biological impacts of dredging and disposal.

Also see the LONDON CONVENTION *"Specific Guidelines for Assessment of Dredged Material"* in sections 4.3 - 4.10.

<u>Environmental Context</u>

The project should be considered in the environmental context within which the dredging and disposal will take place. This includes:

- the general environmental setting (urban, rural, industrialized, agricultural, undeveloped, etc.);
- biological resources in the area (permanent or migratory, mobile or sedentary, commercially or recreationally harvested or not harvested, etc.);
- recreational and cultural heritage aspects (e.g. swimming, angling and sites of historic importance);

- physical conditions (near shore or offshore, deep or shallow, high dispersive energy or low dispersive energy, high and persistent natural turbidity or low natural turbidity, etc.); and

- nature and intensity of potential contamination that may affect the dredged material and surrounding environs, including potential disposal areas (many or few industrial or municipal discharges, industrial and municipal discharges well-treated or poorly treated, discharges well characterized or poorly characterized, river and storm water discharges known to contain many toxic components or contents not well known, etc.) Both historic and recent influences of point source (e.g., effluent discharge points) and non-point source (e.g., storm water) inputs need to be considered.

The interplay of these factors must be considered. For example, in a region where background turbidity levels are persistently high due to natural conditions (e.g., the turbidity maximum area near the upper limits of salinity in many estuaries), poor clearing, mining or erosion control practices, the incremental contribution to turbidity from the dredging project may not warrant detailed evaluation. Fauna may have been lost, adapted or left the area in response to other conditions, so that the dredging project would have minimal effect relative to the persistent background turbidity from other sources. Similarly, in some circumstances the contribution of particular contaminants in biologically available form from industrial, municipal or agricultural sources may be so great relative to the contribution from the dredged material as to make detailed evaluation of those contaminants on the dredged material unnecessary.

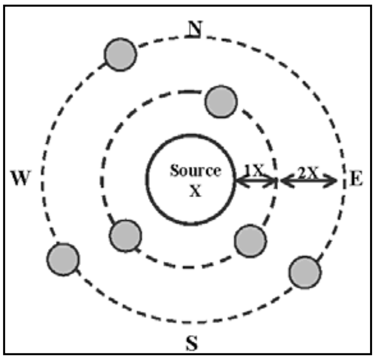

Figure 3. Concentric ring pattern (adapted from Mudroch and Macknight (1994))

All data collected should undergo careful review to assess their utility in the development of a sampling and analytical plans. The value of the available data should be critically evaluated with regard to their quality and age. If historical data indicate that the material is essentially “clean,” sampling and analysis in the same area may not need to be repeated more frequently than once every 3-5 years, provided that there is no indication that the quality of the material has deteriorated. In areas where there is a tendency for sediments to exhibit high levels of contamination, analysis of all the relevant determinants should be frequent and linked to the permit renewal procedure. It is recognised that for some areas much of this historical data may be difficult to locate and consolidate or may not be available at all.

High quality historical, or present-use data can decrease the numbers and types of samples required for the project, or can help identify areas and contaminants of concern.

5.4 Sampling Design

The collection of “representative “ samples is the critical consideration in sampling design.

Design of a sampling plan includes determining the number and location of samples to be collected, as well as any subdivision of the collected samples. The Checklist in Appendix 2 identifies those components that should be considered to allow the collection of samples that, when analysed, provide reliable, accurate, representative information regarding the site in question.

Sampling designs can be used to avoid sampling bias and allow for statistical analysis of the results. Commonly employed sampling designs are described below and can be used in combination. The design should allow flexibility to address realities in the field including restricted site access, hard bottom, bad weather, etc. In general, start at a simple level, and progress to more complicated designs only if needed to meet the goals.

Judgmental

The judgmental or targeted sampling design (Figure 3) utilizes previous data and information to determine the sample sites. If it is desired to detect "hot spots," additional guidance is available to aid in the sampling design (Lubin et al. 1995, Gilbert 1987, Office of Policy, Planning, and Evaluation (OPPE) 1989, Higgins and Lee 1987).

Systematic sampling (grid)

Systematic sampling designs (Figure 4) are typically used to identify the location of contaminated sediments on a quantitative spatial and/or temporal basis (Green 1979; Atkinson 1985). The first sampling location is randomly selected and all other sample sites are determined based on a regular interval. The overall number of samples collected is dependent on the density of cells used for the grid and the area of the project. This approach is thorough (no bias) but can be expensive depending on the size of the boxes in the grid.

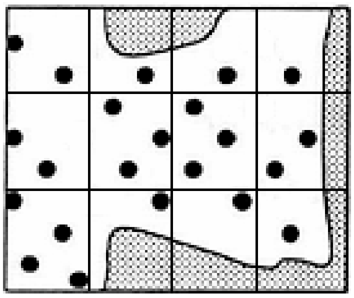

Figure 4. Systematic design (adapted from USEPA (1991))

Random sampling

Random sampling implements an approach (Figure 5) where a grid pattern of equal-sized cells is placed over a map of the study site to be sampled. A number is assigned to each grid cell. The number of samples for the project area is determined and cell numbers are randomly selected. Samples are collected from within each of the selected cells. This approach limits the possibility of omitting regions of the study site as well as avoiding sampling bias. However, random sampling may not be practical where the study site is not a continuous area.

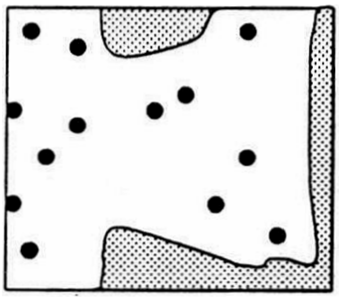

Figure 5. Random Design (adapted from USEPA (1991))

Stratified random sampling

Stratified random sampling (Figure 6) is similar to random sampling with differing sample frequency within segments of the study site. Historical data may indicate concentrated or heterogeneous areas of contamination that require more intense sampling to characterize the sediment. This approach is often considered the optimum choice for sampling sediment to determine its adequacy for disposal at sea (EC 1995).

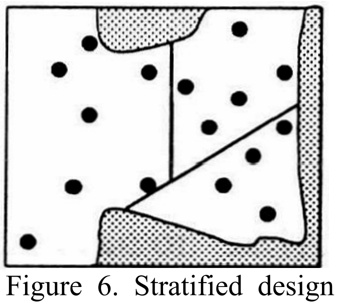

Figure 6. Stratified design (adapted from USEPA (1991))

Cluster, multistage, or ranked set sampling

In this approach, sub-areas are selected first (usually on the basis of professional knowledge or historical information). Stations are randomly located within each sub-area to yield average or pooled estimates of the variables of interest for each sub-area. This type of sampling is especially useful for statistically comparing variables among specific parts of a study area.

Maximum depth profile

This sampling seeks to assess the vertical profile of the sediments (e.g. sampling to intended dredging depth) as well as the sediment surface. ISO (2000) recommends sediment sampling stations be positioned in the deepest parts of the water body or basin to be assessed where maximum sedimentation and contaminant accumulation is likely to be the greatest.

5.6 Sample Number and Location

In general, confidence in the waste characterization will increase with larger number of samples. A sampling plan focusing on information needs will be used to determine sample locations.

Some regulators have chosen to generate tables linking sediment volume (or a similar factor) to the number of samples recommended. This can result in too many or too few samples being taken at a given site, but has the benefit of being simple and consistent. Other regulators may use a formula or process on a case-by-case basis. Values and formulae are discussed in Barth and Starks (1985). USEPA (1994) discusses the relationships of these statistical considerations, and the methods are further described in Steel and Torrie (1980) and Zar (1984). Computer software is also available to help with determining how many samples are needed (IADC 1997b). Some concrete examples of how sampling could be done are found in Appendix 1.

In general, for both number and location of samples, the goals of the study, the size of the area, the heterogeneity of the sediment, and how contaminants segregate in the sediment matrix need to be considered. Certain geophysical techniques can show the extent of sediment layers, which could help target a sampling campaign. QA/QC, the degree of confidence required in the data, and the cost and time available are also factors.

Once the number of stations is determined, the total number of samples will be the sum of the test samples, the control samples, the QC samples, and any supplementary samples needed to further the goals or as a backup in case further analysis is needed (see Section 5.7-5.10 on QA/QC).

The approximate sample locations should be plotted on a map, based on the chosen sampling design, to give a picture of the sample distribution and ensure that key areas are covered. It is usually not necessary to pre-select exact sampling co-ordinates and try to get the sampler down in exactly that spot; it is better to pre-select approximate sampling locations, position the vessel as close as practical, and then determine the exact spot from which the sample was actually taken (IADC 1997a).

Preliminary costs:

If there is a fixed budget, an initial estimate of the mobilization costs and the approximate cost of sampling per site should be made. This will give an estimate of the time and the number of samples that can realistically be done. Factors such as season, mode of transport, site access, etc. can affect the costs significantly and should be assessed early on. Similar estimates should be made with respect to analytical costs per station. Certain minimum requirements can be assumed; at least three stations should be sampled, in order to calculate a mean and a standard deviation (unless the sediments are known to be homogeneous) (Arctic Laboratories Ltd. 1985).

5.6.1 Volumes and Mass of Sediment Required for Analyses

Sample size should be large enough to attain the appropriate detection limits but small enough to be conveniently handled and transported within the requirements for all planned analyses.

Please note that not all the analyses listed here will be needed in each case. The volume per sample will be a function of:

- The sample depth(s). Sediment samples should be collected to the authorized project depth (including any "overdepth" dredging), unless the sediments are known to be vertically homogeneous.

- The number and types of the sample analyses.

- The sample volume or weight required to satisfy the method and QA/QC programme for all analytical and biological tests selected. Table 1 gives an idea of the volumes, but check actual requirements with the chosen laboratory.

In many cases, 500 g is sufficient for basic chemical analysis of metals and organic compounds (PAH and PCB). This can increase to as much as 20 kg if multiple toxicity tests and more extensive chemistry are needed.

Table 1. Commonly Required Volumes and Weights for Chemical and Biological Tests

Analysis	**Volume (ml)**	**Weight (g wet wt)**
Chemical Analysis		
Metals	90	100
Organics	230-2000	250-1100
Others (TOC, Moisture, Particle)	230-300	250-330
Biological Analysis		
Toxicity tests	230-2000	250-2200
Bioaccumulation tests	3000-8000	3300-9000
Elutriate analysis	700-1000	800-1100
Pore water analysis	2000-5000	3200-5500
Sources: EC 1994; USEPA 1998		

5.7 Quality Assurance and Quality Control

Quality assurance and quality control (QA/QC) should be followed throughout the implementation of a sediment sampling plan. QA/QC integrates management and technical practices into a single system to provide environmental data that are sufficient, appropriate, and of known and documented quality. Quality assurance includes outlining specific standard operating procedures and guidelines prior to implementation. Quality control includes documentation that all of the procedures and guidelines outlined in the plan were followed by the reporting laboratory. Good QA/QC will help to reduce sampling error (by using unbiased methods to choose sampling sites) and measurement error (by standardization of methods and procedures) (USEPA 2001).

The effort devoted to QA/QC should be proportionate to the scale of the sampling programme being undertaken and take into account the precision and accuracy required. It will also restrict the selection of analytical procedures to those having an appropriate basis for standardization.

5.8 Recommended Elements of a QA/QC Programme for Sampling

If sampling design and collection are undertaken by different groups, what is expected/agreed to with respect to QA/QC should be well communicated prior to sampling.

The following specific criteria should be included:

- A complete record of all field procedures, including field preparations, and any deviations from the sampling plan should be maintained (see Chapter 6 and Appendix 2).

- A clear record of custody must be ensured for all samples that are collected and/or analysed to satisfy legal requirements. Appropriate DQOs and QC sample type and number should be set and integrated into all aspects of the plan.

- All sampling devices and instruments used to collect data in the field should be regularly maintained and calibrated (meters, positioning equipment) as appropriate; these activities should be documented.

- Personnel should be familiar with all aspects of the study plan and sampling plan.

- Properly trained personnel should operate equipment.

5.9 DQO and QC Samples

There is a need to set reasonable Data Quality Objectives (DQOs) for the plan. DQOs are an important aspect of quality assurance (QA) and are statements that provide critical definition of the confidence required in drawing conclusions from the entire project data. These objectives will determine the degree of total variability (uncertainty or error) that can be tolerated in the data. DQOs must be balanced against the cost of sampling and analysis, and realistic objectives should be established with concurrence of the data users.

To determine the level of assurance needed to support a regulatory or other decision, there needs to be a dialogue between the decision makers and the project planners to negotiate the amount of uncertainty that will be tolerated in the expected results (Radian 1992).

Another important consideration in planning for sampling and analysis of dredged material is the type and number of quality control (QC) samples to analyse. These become more important where detailed chemical analysis and biological assessment are to be done, or in any case where precision or bias need to be estimated. There are many kinds of QC samples and each performs certain specific functions. It is critical that the correct types of QC samples be selected to meet DQOs or the time and money spent analysing data will be wasted by obtaining data of unknown quality (Radian 1992).

A basic QC field programme usually includes replication. Collecting separate samples within a sampling station (replicates) will impart valuable information on the spatial distribution of contaminants and the heterogeneity of the sediments within the site. Furthermore, replication within a project is necessary to make statistical comparisons:

- It is recommended that at least a percentage of the sampling stations be replicated and kept separate for QA/QC purposes (e.g. 10 percent is suggested in EC 1994). If replicate samples from each sampling station are required, ISO (2000, Draft) recommends at least three.

- The number of replicate samples may be determined from preliminary sample collection and analyses, with higher numbers of replicates taken in areas where sediments have patchy distribution or near sources of contamination (harbours, shallow waters, etc.)

- Pseudoreplication, the subdivision of a single field sample into multiple laboratory samples, should be avoided, unless they are being collected as split samples (see below).

Other types of QC samples may be more appropriate in certain cases, depending on the type of variability or bias that is of concern.

For example, if chemical values reported are near an action level, then variance becomes particularly important. The consequences of knowing whether a pollutant is above or below that action level may be large. In this case, greater attention may need to be devoted to sample collection and to the use of split samples to assess sampling variability (after Radian and Keith 1992).

- Split samples, created by dividing the sample into two containers, are collected in order to assess the variation associated with sample handling. It should be noted that where sediments are heterogeneous, split samples will be less useful for this purpose as differences in contaminant levels between the split samples may be due to differences in the sediment rather than in the handling.

- Travel blanks may be necessary where samples are being analysed for volatile or semi-volatile organics, to determine if these have escaped and contaminated the rest of the samples during transport and storage. They're probably not necessary for other sediment analyses.

For additional information see: CCME (1993), United States EPA (1992), and Keith (1990, 1992).

5.10 Compositing

Compositing is the combination of sample material collected from multiple sample locations. The advantage of compositing is a reduction in the number of samples analysed, which reduces the overall cost. Analytical results from a composite sample represent the mean value for those samples if they were individually analysed. This technique is useful when sediments are physically similar; that is, located in similar hydrodynamic locations and /or where there are past data to show the similarity across the area. Routine assessment of a navigational channel that gets regular maintenance dredging might be a good use of this technique.

However, compositing can result in a significant loss of information regarding the variability and distribution of the quantitative characteristics of the study site (Figure 7). Compositing should not be used to “dilute” a highly toxic or heavily contaminated localised area within the project. For example, it would not be appropriate to composite dissimilar samples from around the docks of an oil-loading terminal (potentially contaminated) with those out in the middle of the harbour (lower risk of contamination) unless past data suggested similar contaminant levels.

If field samples are composited, some of the stations should not be composited in order to assess heterogeneity within or among the sampling stations, or part of all the original samples should be kept in case further assessment is needed.

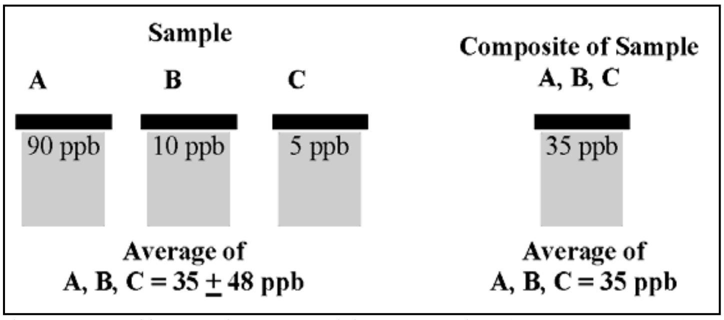

Figure 7. Effects of Compositing Samples (Steevens 2000)

5.11 Time and Funding Considerations

Where time and funding constraints exist, USEPA (1991; 1994) suggests several options that may be considered. All of these options increase the risk of an inaccurate and compromised characterization of the study site: This being said, even the most limited sampling provides valuable information on sediment condition and is preferable to not sampling at all:

- Reduce the number of replicates at each station - e.g. - if you want to cover a broad area and are not concerned with the variability at a station.

- Maintain replicates but reduce the number of sampling stations - e.g. if you want to know variability at a station and think the area is reasonably homogeneous.

- Reduce the number of project segments but maintain the same total number of samples.

- Maintain or increase the number of stations sampled and composite samples from within a project segment so that a lower number of analyses are performed, e.g. if you want to cover a broad area and assess average conditions in areas where contaminated sediment is not considered to be an issue.

- Increase the number of locations to be composited where there is uniformity of sediment physical characteristics and contaminant sources.

For a given method, analytical costs will increase roughly in direct proportion to the number of samples. Sampling costs will increase to a negligible degree for extra replicates at a given site and only by a small fraction of the total for extra sites. Not all samples need be analysed but the extra samples may help to clarify or affirm unusual results. This must be balanced against the likely need for and the additional cost of transporting and storing additional samples. The analytical costs will also increase with the complexity of the analytical method.

6 FIELD SAMPLING

The needed complexity will depend on the size and complexity of the project. A series of checklists can be constructed to help ensure that nothing is forgotten. A sample checklist is available in Appendix 2.

6.1 Positioning

The position of the sampling stations should be defined unambiguously, such that other operators can relocate them. Positions should be defined using geographic co-ordinates with reference to the relevant system such as European Datum: ED-50, World Geodetic System: WGS-84, longitude/latitude and also using the UTM system if appropriate. The accuracy and precision of the position fixing should be recorded for each sample to account for positional bias associated with the various methods (ISO 2000). Positioning equipment is reviewed in EC (1994), USEPA (1987, 2001), PIANC (2000), and British Standard (1999).

6.2 Sediment Sampling Equipment

The devices recommended for the collection of sediments in marine environments are presented below. Several reviews have outlined the methods and the equipment advantages and disadvantages (Baudo et. al. 1990, Mudroch and MacKnight 1994, ASTM 1992, Burton 1992, Holme and McIntyre 1984). The appropriate sediment sampler should be selected based on the goal of the project and the logistical needs and analyses required. Two main types of samplers are recommended and are described below.

Core samplers

A coring device is recommended whenever sampling to depth is required. Core samplers (Figure 8) are used to collect sediment profiles (vertical distribution); these are generally preferred where maintaining the integrity of the sediment profile is essential because they are considered to be the least disruptive. Core samples can be segmented, based on sedimentary horizons, to conduct analyses. The amount of material collected by a core sampler is dependent

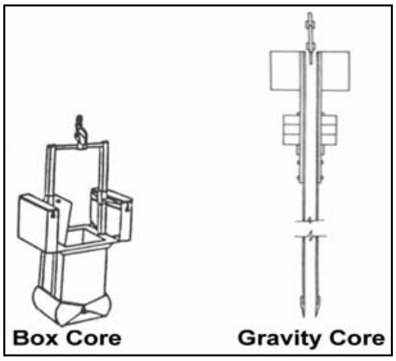

Figure 8. Core Samplers

on the width and depth of the corer. A typical corer has a diameter of approximately 3.5 to 10 cm. Box corers have a sampling area from $0.025m^2$ to $1m^2$. Penetration ranges from 1 to 2 m for gravity core samplers and 2 to 20 m for hammer, piston, and vibratory corers. Vibrocores (also called vibracores in some areas) are a commonly used coring device because they collect deep cores in most types of sediments, yielding excellent sample integrity (ISO 2000). They are generally used on harder substrates (CEFAS personal communication, 2001). Vibrocores obtain core samples by vibrating a large-diameter core barrel through the sediment column and can reliably collect thick sediment samples. Most have a penetration depth of about 5 meters but some may work up to 10 meters or more. It should be noted that recovery depth is severely limited in packed sand (CEDA, personal communication 2002). Suction tube samplers are another form of corer and are especially suited to collect samples up to 2 m in depth in soft materials. They enable the collection of the soft top layer in which contaminants are most often found. These samplers are easily deployed and inexpensive (CEDA, personal communication 2002).

A disadvantage of the gravity core sampler is the limited application in areas of hard bottom substrate. Stratified samples may be necessary if the sediment core contains several distinct layers of sediment. Heavier cores or larger box cores are useful in this context but as they are relatively large and heavy, they also place certain demands on the survey vessel. The choice of corer design depends upon the objectives of the sampling programme, the sediment type, water depth, and currents. Penetration depth should extend to the depth of the intended dredge cut (ISO 2000).

Grab samplers

Grab samplers are used to collect surficial sediments (horizontal distribution) (Figure 9). They are easy to handle and operate, readily available, moderately priced, and versatile in terms of volumes, substrates, and depth. Careful use can minimize unpredictable penetration, mixing of sediment layers at impact, and loss of fine-grained surface sediment on ascent. Typically grab samplers collect material from the upper 30 cm of sediment. However, they are capable of sampling larger amounts of material and can be effective in sampling hard bottom sediments as well. Examples of grab samplers include the Van Veen, PONAR, Peterson, and Birge-Ekman

(ISO 2000). The Day and Shipek grabs are also in common use and may be the best choice for coarse sediments. In areas that have frequent ship traffic and from which sediments are dredged at short intervals, accumulating sediments are re-suspended and mixed semi-continuously by ship scour and turbulence, thereby preventing stratification. In these cases, grab samples can be representative of the mixed-sediment column. Corers would only be necessary if dredging of infrequently disturbed sediments below the mixed layer is planned.

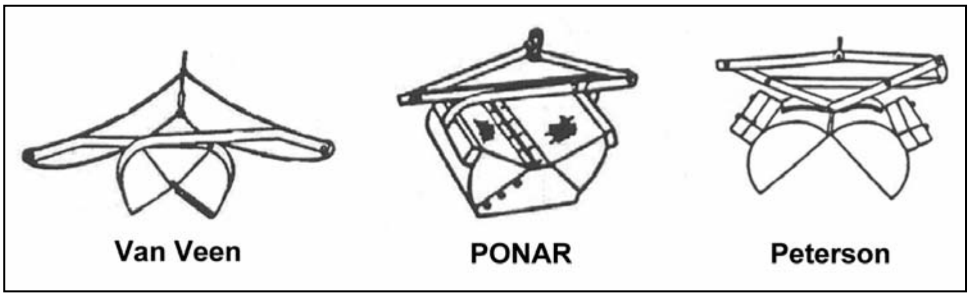

Figure 9. Grab Samplers

6.3 Vessel Considerations

The vessel should be large enough to accommodate the necessary types of sampling gear, including lowering and raising the gear and removing samples. Storage space for empty sample containers and preservation of samples in a cool area after collection are necessary. If cores are being collected, the vessel should be held as motionless as possible while the core is lowered and raised (IADC 1997a). It should be noted that many samples are collected near shore and may not even require a vessel. Grabs and corers can be operated from the shore either by hand or by using cranes or derricks. In addition, a small boat with a small hand-operated grab or corer may be able to provide satisfactory samples. Appropriate storage and preservation can be achieved either on the boat or on shore nearby.

6.4 Sample Containers

Sample containers must be carefully chosen to reduce the potential of contaminating the sediment sample or altering its physical or chemical characteristics. The same type of container should be used for all samples to be analysed for the same parameter. All packaging should be watertight to prevent evaporation of labile compounds and leakage of gas or water (ISO 2000).

Care should be taken to prepare containers prior to their use (see Loring and Rantala 1992). Sample containers should be clean. General guidance for selecting an appropriate container is listed below; however, specific testing methodology should be consulted prior to selection (EC 1994).

Generally, samples to be analysed for trace metals should not come into contact with metals and samples to be analysed for organic compounds should not come into contact with plastics.

Biological sample containers

High-density plastic (polyethylene (HDPE) or polytetrafluoroethylene (PTFE)) bags, bottles, or drum liners are recommended. (NOTE: There is a potential for phthalate contamination of samples shipped in plastic containers. If this is a concern, then other containers should be used.)

Chemical analysis sample containers

Metals and organic carbon (TOC): Wide-mouth high-density plastic bags or bottles (polyethylene) or are suitable for the storage of whole sediments. Samples to be analysed for metals should not come into contact with PVC, nylon, soda or flint glass or metallic surfaces, including stainless steel (EC 1994). Samples should be collected from the centre of steel samplers.

Organic chemicals: Amber glass and stainless steel wide-mouth containers with aluminium foil-lined lids are suitable for storage of whole sediments for the subsequent determination of organic analytes. Amber glass is preferable to avoid degradation of aromatic compounds that degrade with exposure to light. Clear glass can be stored in the dark or wrapped with an opaque material to eliminate light and reduce accidental breakage.

Teflon® or Teflon®-lined containers are recommended for storage of whole sediments by many sampling texts, regardless of the nature of the contaminants of concern. However, to date Teflon® has not been widely used for the storage of dredged material samples.

6.5 Field Information

Good documentation will improve the confidence that can be placed in the data and may help explain unexpected results. Data sheets can be prepared before the sampling and will help the data collector record consistent information. The following information should be collected during sampling:

- Sample labels must include an identifying sample number and the label or sample data sheet should also include site identification, sampling station location (positioning), sample type, and method of collection, name of the collector, and date and time of collection and depth.

- For legal samples, chain of custody records must show who has had custody of the sample.

- Conditions during the sampling event (weather, waves, traffic).

- Records of the sample conditions (temperature, exposure to contaminants, oxygen).

- Personnel involved in the sample collection.

- Deviations from the sampling plan or protocols.

- Description of the sediment sample including texture and consistency, colour, odour, presence of biota, estimate of quantity of recovered sediment by a grab sampler or length and appearance of recovered cores. A photograph of the entire core or sample is also desirable.

6.6 Sample Handling

In order to satisfy the quality assurance/quality control (QA/QC) program, all samples must be handled in such a way as to avoid affecting the analytical results.

- Proper personal protection equipment should be worn at all times to prevent human exposures or contamination of samples.

- Sediments may contain a mixture of hazardous substances including bacterial or viral agents; therefore, skin contact should be avoided where possible.

- Handling of samples should be performed in a well-ventilated area.

- Work surfaces should be clean, easily cleaned and unlikely to absorb contaminants.

- Handling of samples should be minimised and carried out as soon as possible after the sample is taken to avoid changes in temperature and oxygen conditions that can affect geochemical and biochemical conditions in the sediment samples.

- In general, avoid contact with the sides of the sampler when sub-sampling to minimize cross-contamination from the sampler (this will be important for metals, when a steel or iron sampler is used, also painted samplers may contaminate the sample with paint chips).

- Protect samples from contamination on deck (vessel exhaust, grease from the winch).

- Samples should go directly into a pre-labelled container with minimum headspace. If the sample is to be frozen, just enough airspace should be allowed for expansion to take place.

- For analysis of volatile compounds, samples should completely fill the storage container, leaving no air space. These samples cannot be frozen or the containers will crack.

- Samples can be temporarily stored in the field using refrigerated units (4°C) on board vessels, freezers, or refrigerators at a local land facility or insulated containers (coolers) filled with ice or ice packs.

- Keep intact cores upright.

- Samples having regulatory or legal implications must have a tape seal and appropriate accompanying documentation.

- If sediments adhere to the outside of the sampler, the external surface of the sampler should be carefully hosed with clean water upon retrieval before the sample is transferred to a storage container.

- The sampler and sampling equipment should be rinsed thoroughly with water at the sampling station between within-station samples (i.e., lower sampler overboard and dip to ensure last sample has been rinsed off), and rinsed with water from the next sampling station before collecting a sample. Equipment used in the handling of sediment must also be washed thoroughly between samples.

6.7 Sample Acceptability

Samples should be collected following the standard operating procedures for the selected sampler and the sampling plan. A sediment sample should be inspected as soon as it is taken. A sample should meet the following criteria of acceptability before it is considered adequate:

- Overlying water is clear or not excessively turbid, compared to the water in the sampling area.
- Sediment-water interface is intact, undisturbed and relatively flat with no sign of channelling, sample washout, or over-penetration.
- The desired depth of penetration has been achieved.
- There is no evidence that the grab sampler is incompletely closed or that the grab or core sampler was inserted at an angle or tilted upon retrieval (thereby risking loss of sediment).
- The core is complete with no air space at the top of the liner before capping, (i.e., there has been no loss of sediment).
- The length or the core is within the range stipulated in the sampling protocol.

Samples not meeting these criteria should be discarded in a manner that will not affect subsequent sampling (EC 1994). Consecutive attempts to replace the discarded sample should be taken as close to the original location as possible but, if practical, slightly "upstream" of previous sampling.

6.8 Sample Transport

Transport of samples should be conducted to maintain the structural, chemical, and biological characteristics of the sediment to the degree appropriate. The duration of storage in the field should be minimal and carefully monitored. The following points are identified as best laboratory practices for transport of samples for later analysis.

Those doing basic analysis limited to grain-size and bulk metal determinations may need less strict transport protocols but should nonetheless assure that sediments are transported in such a way as to keep them cool and in the dark, using well-sealed, clearly labelled containers.

- Samples destined for determination of volatiles or for biological testing should not be allowed to freeze during transport.
- Deviations in temperature should be avoided and reported when they occur.
- All field-collected samples that require further processing before storage should be transported to the laboratory as soon as possible, preferably within 24 hr of collection.

6.9 Sample Storage

Changes to the sediment (i.e., physical, chemical, and biological) during sample storage should be minimized to the greatest extent possible. Exceptions are with the preservation of samples where manipulations are specifically identified. Sample holding time, the period for which a sample can be stored, should also be minimized (ISO 2000).

The following points are identified as best laboratory practices for storage of samples for later analysis. Those doing basic analysis limited to grain size and bulk metals may need less strict storage protocols, but should nonetheless assure that sediments are stored cooled or frozen and in the dark, using well-sealed, clearly labelled storage containers (Figure 10).

- Sediment samples should generally be stored at 4 ± 2°C.

- Sediments destined for chemical analyses may be stored with or without preservation reagents as appropriate, and should ideally be analysed within two weeks of collection. Various texts advise that storage should not exceed 6 months. It should be noted that there is a body of research demonstrating that freezing alters the chemistry and the toxicity of sediment samples (EC 1994). However, freezing may preserve ammonia and sulphide levels, which are relevant to toxicity test interpretation (Jackman and Doe 2001).

- Whole sediments to be used in biological tests must be refrigerated in the dark (freezing should be avoided), in tightly sealed storage containers without preservation reagents, for a preferred storage time of two weeks or less, and a maximum suggested storage time of eight weeks (ASTM 1998, USEPA-USACE 1998).

- Samples that are frozen in containers that cannot accommodate expansion of the sample during freezing should not be filled completely. A headspace of about 2.5 cm should be left to accommodate expansion. (Various texts recommend the use of an inert gas, such as nitrogen, to occupy the headspace of the sample container where contaminants are volatile (USEPA 2001, EC 1994).

- Continuous monitoring of the storage conditions should be part of the QA/QC programme.

Figure 10. Storage containers

7 ANALYSIS OF PHYSICAL, CHEMICAL AND BIOLOGICAL PARAMETERS

7.1 Principles

This section is not intended to give a prescriptive list of methods, but rather to outline the selection of methods in the context of the resources available and the overall aim of continuous improvement.

There are several key principles that should be kept in mind when analysis of sediments is undertaken:

- The objectives of the analysis program, including data quality objectives, need to be well developed and prescribed before commencement.

- Procedures of analysis must meet Quality Assurance requirements particularly in respect to ensuring that the selected analytical methods can be appropriately standardized.

- Procedures for data management, data quality validation and any statistical routines proposed should also be considered at this time.

- Health and safety precautions for laboratory and field personnel appropriate to the anticipated sediment contaminants should be identified and implemented.

- Procedures for sample handling, preservation, storage, validated analytical methods including detection limits, replicates and reference materials should be documented and ideally published along with associated quality assurance information.

- Efforts should focus on contaminants and known effects most likely to cause the greatest environmental impact as determined from chapter 3.

Once the analytical plan has been followed, data is then presented in such a way as to verify its validity and hopefully to allow decisions to be made.

7.2 General statistical considerations and data presentation

The statistical analysis usually aims to determine whether or not the level of any contaminant exceeds action or trigger values.

Several general considerations should be kept in mind:

- Who will be the target audience of the results?
- Was bulking, splitting or replication carried out in sample preparation?

The latter aspects need careful consideration with a view to later statistical analysis.

As an example, in accordance with general practice in some parts of the world, the upper 95% confidence limit of the mean (95% UCL) is often used to determine compliance. If the 95% UCL for a contaminant does not exceed the guideline value, this means that there is a 95% probability that the mean concentration of the contaminant in the dredged material will not exceed the guideline value.

For the dredging area, or a distinct site within the area, the mean and standard deviation are calculated and the upper 95% confidence limit of the mean determined. A Guideline value is exceeded if the upper 95% confidence limit of the mean exceeds the specified value. Where the data are normally distributed, the arithmetic mean is employed. If the data are log-normally distributed, the geometric mean is appropriate.

The following steps are recommended for data presentation:

- The laboratory analysis results should be tabulated with the actual field sample numbers used and the laboratory identification numbers and documenting chain of custody.
- All quality assurance data (blanks, laboratory duplicates, spikes and Standard Reference Materials) should be reported for each sample batch analysed.
- Good analytical reports usually also evaluate the quality control data, including whether the data quality objectives in the sampling and analysis plan were met, and which, if any, results were qualified because they failed to meet data quality guidelines.
- Sediment quality data may also be plotted to display trends visually and compared to plots from related surveys.

The assessment will consider whether or not the sediments to be dredged exceed the appropriate sediment quality guidelines and, if so, what alternatives need to be considered and/or management measures implemented to ensure that environmental quality are maintained.

7.3 Action levels

The 1996 Protocol to the London Convention and the supporting guidance "Specific Guidelines for the Assessment of Dredged Material" requires parties to develop a National Action List to provide a mechanism for screening candidate wastes or other matter and their constituents on the basis of their potential effects on human health and the marine environment. Action lists may specify a lower level (screening values) and shall specify an upper level. The upper level should be set so as to avoid acute or chronic effects on human health or on sensitive marine organisms representative of the marine environment. The action list may consist of concentration limits, biological responses, environmental quality standards, flux considerations or other reference values.

Action levels or other benchmarks may be needed:

- as a starting list of chemical parameters to be analysed;
- to establish detection limits for subsequent analyses;
- as a first screening step for the chemical data obtained in the assessment procedure as applied in many countries; and

- as a trigger mechanism for further waste prevention considerations.

A table in this document giving examples was not considered helpful as the different sets of national action lists were derived in different scientific or administrative ways not necessarily appropriate to other countries. Moreover, local, national or regional variations in contaminant concentrations and potential impact can be large. Instead, examples of action levels are included in Appendix 4.

FURTHER INFORMATION ON THE DEVELOPMENT, THE APPLICABILITY AND THE LIMITATIONS OF SEDIMENT QUALITY CRITERIA ARE FOUND IN A GIPME REPORT (GIPME 2000). IN ADDITION, THE LONDON CONVENTION IS DEVELOPING GUIDANCE ON THE DEVELOPMENT OF ACTION LISTS AND ACTION LEVELS.

8 CONTINUATION AND CONCLUSION OF INVESTIGATIONS

The investigations described above will produce meaningful and sufficient data to enable characterization of the sediment to be disposed of at sea. The next step towards a decision on sea disposal of the sediment is described in the LONDON CONVENTION *"Specific Guidelines for Assessment of Dredged Material"*.

APPENDIX 1 - CASE STUDY EXAMPLES

Below are some case studies from different parties, which illustrate how a sampling plan might look. For the present, there is an example from each of the authoring countries.

It is hoped that as this document is used, other examples from users will be provided and can be added to give readers a broader range of experience from which to get ideas.

The examples in this appendix are not intended to be prescriptive, or to cover all possible scenarios, but rather to give an example of how it could be done, and how information is used and concerns are addressed. They are examples of national experience.

Case #1 is from Canada and is an excerpt from their “User’s Guide for Ocean Disposal Applications” (Environment Canada 1995). It deals with assessing maintenance dredging and uses all surface grabs. The example suggests how a project may be stratified into areas based on what is known about it. It suggests focusing sampling effort in the areas where little is known but there is reason to believe there may be contamination. Areas known to be contaminated or uncontaminated (based on past data) get only confirmatory sampling. Canada has chosen to prescribe the number of samples an applicant must take, based on the volume of the intended project.

Case # 2 is from the United States and presents a complete sampling plan for a wharf where coring is required and compositing is used. This site is considered to be an area of high concern for sediment contamination and the criteria shown are specifically set for that type of area. This region of the United States also prescribes samples based on volume, but other approaches may be used in other regions.

Case Study #1. Stratifying by Area

The characteristics of the dredge site will influence, to a considerable extent, the distribution of the sampling stations located within the study site. Many dredge sites exhibit considerable spatial variation in the levels of contaminants; such differences are often associated with sources of contamination and characteristics of the site. It will usually, therefore, be desirable to stratify (divide into areas or zones) dredge sites according to possible sources of contamination, historical information on contaminant levels, and/or sediment characteristics. For very small projects stratification may not be warranted unless there are clear indications of large differences in probable contaminant levels. Large projects often warrant being stratified. For projects that have areas that are physically separated (wharves along an inlet) each such area should be treated as a stratum.

In this example, sample numbers are set according to the volume in each stratum. This relationship was originally established using a form of power analysis and put into a standard table that applicants use. It is suggested that strata be classified as 'likely contaminated,' 'suspect,' or 'probably clean.' An arbitrary rule was set which allowed that when good historical information was available to support the “probably clean” or the “likely contaminated’” classifications, the number of samples required could be cut in half. This is to allow a focus on areas where information is lacking while confirming that conditions in the better characterized strata have not changed since the historical data were obtained. Additional samples would likely be required if results were different from what was expected.

A random approach is recommended for the location of sampling stations in unstratified projects or in each individual stratum. To assist in the random selection of sample stations the project (or stratum) is divided into blocks. Blocks should be square and there should be at least five times as many blocks as the number of sample stations required. In a project (or stratum) where contamination is suspected, it is very desirable to employ more than the minimum number of samples. Dividing the project area into blocks in this way is a practical method of providing a 'frame' for the selection of a random sample. The sample (and the field replicates, if any) would then be taken from approximately the middle of the block.

Below are the Canadian and the OSPAR country recommendations for sample numbers by volume.

Table A1. Number of Sediment Samples to be Collected for Dredging Projects (or Strata) of Different Sizes in Canada (good historical information reduces numbers to half of the number listed) (these numbers are for physical and chemical samples; toxicity or bioaccumulation tests are not always required and sample numbers are set on a case-by-case basis)

Project Size (1,000m^3)		Number of Sample Stations
Greater Than	**Less Than or Equal To**	
0	10	6
10	50	7-12
50	100	13-18
100	264	19-22
264	509	23-28
509	+	Case by Case

Table A2. Number of Sediment Samples Recommended to be Collected for Dredging Projects (or Strata) of Different Sizes in OSPAR countries (these numbers assume a reasonably uniform sediment in the area to be dredged)

Project Size (1,000m^3)		*Number of Sample Stations*
Greater Than	*Less Than or Equal To*	
0	25	3
25	100	4-6
100	500	7-15
500	2,000	16-30
2,001	+	extra 10 per million cu m.

Choosing stations randomly within a sampling area or strata

Figure A1 shows the blocks constructed for a relatively simple unstratified project. If this project has about 20,000 m^3 of sediment to be dredged and eight samples are to be taken, the project area should be overlaid with a grid containing at least 40 blocks (eight samples times five). The blocks are constructed to cover the project completely, a block is included if at least half the block area falls within the dredged area. Each block is assigned a number and the sample blocks are randomly selected (using random number tables or a random number generator) and sediment samples are collected from approximately the centre of each of these blocks. The minimum number of blocks for this project is 40 but this was increased to 44 since this gave a convenient coverage of the area to be dredged. In this case, blocks 2, 3, 27, 34, 18, 20, 41, and 12 were selected at random.

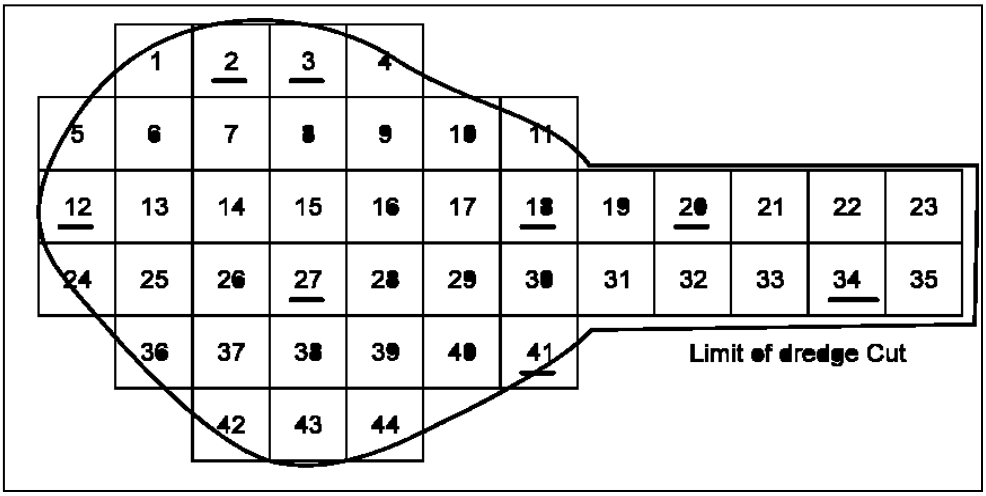

Figure A1. Selecting random samples: Put a grid over area to be sampled – use five times as many blocks as the number of samples (x), then select X block numbers at random to set station locations

An example of a stratified project

Figure A2 shows a situation with 'likely contaminated' and 'probably clean' areas. There is a harbour area that, aside from obvious marine activity, includes other contaminant sources. The approach channel has no clear contaminant sources. Historical data show high levels in the 'likely contaminated' area, lower levels in the 'Suspect' area, and very low levels of all contaminants in the 'probably clean' area. This structure suggests constructing three strata, the inner harbour, the suspect area, and the remainder of the approach channel. The total project is about 200,000 m^3 with 90,000 m^3 in the inner harbour, 36,000 m^3 in the suspect area, and 74,000 m^3 in the approach channel.

Since there is good historical information on this project, the results in the harbour ('likely contaminated') and channel ('probably clean') will be viewed as confirmatory; therefore, the final number of samples is one-half the basic sample number. For allocation of the samples the harbour should be divided into at least 45 blocks for 9 samples, the suspect area into at least 50 blocks for 10 samples, and the channel into at least 40 blocks for 8 samples. The blocks to be sampled are then chosen at random within each stratum. This example illustrates the way stratification may be employed where general knowledge of the dredging site conditions can be combined with historical data. Historical data can often provide an objective basis for drawing the strata boundaries to provide a more precise estimate of the contaminant distribution.

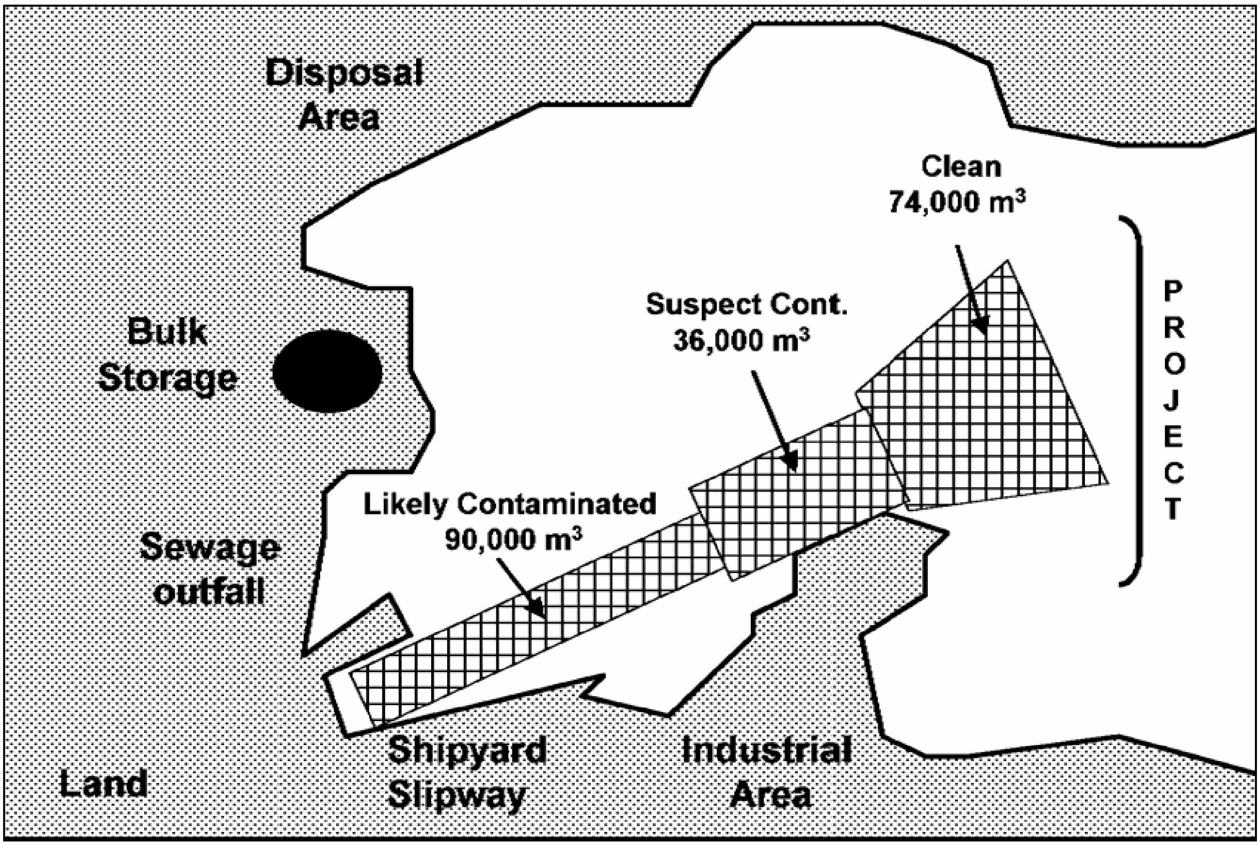

Figure A2. Site with "likely contaminated" and "contaminant-free" zones

Case Study #2. Sampling and Analysis Plan for Shipyard at Bremerton, WA, USA

Project Description

The shipyard X proposes to upgrade Pier D by dredging two mooring basins, along each side of Pier D, to accommodate larger vessels. Each mooring basin will be 50 m wide by 320 m along the pier and dredged to a design depth of -15 m. Existing bottom depths are the order of -12 m. Estimated total dredging quantity for both basins is approximately 156,700 m^3, including side slopes and 1-ft over-depth. Dredging will be by clamshell and barge. Depending on the results of the sediment characterization proposed in this sampling plan, disposal will be either open water or upland to a regional landfill by offloading and truck haul. It is possible that each site may receive some of the dredged materials.

The sampling and analysis plan is based on a specific United States Regional Guidance document found at the Website: www.nwp.usace.army.mil/ec/h/hr/Final

Site History

The proposed dredging area is likely to have sediment contamination. Limited available data show that sediments to be dredged at Pier D consist of a 0.5- to 1.25-m surface layer of black, soft silts and fine sands (mud) overlying a more dense, grey silty fine-to-medium sand. A pilot sediment characterization study was conducted at Pier D and results indicated elevated concentrations of DDT and silver. Based on these limited results, a chemical and biological sediment characterization will be conducted by collecting and analysing representative core samples for each of the two mooring basins to be dredged. A tiered chemistry/biological testing approach will be used. These results will be provided to the involved agencies as the basis to identify the acceptable disposal option(s).

The Pier D area was last dredged in the 1940s to a design depth of -12 m, as part of an area-wide dredging project for the shipyard. The most recent hydrographic survey shows that less than 4 ft of infill has since occurred. Between 1910-1923, fill extended the natural shoreline to the currently existing quay wall at the head of Pier D. The area was beginning to be developed by this time, with a coaling pier in use about 60 m east of Pier D and commercial oil tank farms in use on property about 300 m north-west of the shipyard. The shipyard purchased this property in 1942 and used it for barracks, steel storage, and parking.

Objectives

The sediment characterization objectives and constraints are as follows:

- to characterize sediments to be dredged to enable the involved agencies to designate approved disposal option(s);

- to optimize the prospect of identifying all Dredged Material Management Units acceptable for disposal at the open-water disposal site while assuring that unacceptable sediments are disposed of at an approved upland site; and

- to collect, handle, and analyse representative sediment core samples characterizing the full dredging area in accordance with protocols, timing, and QA/QC requirements.

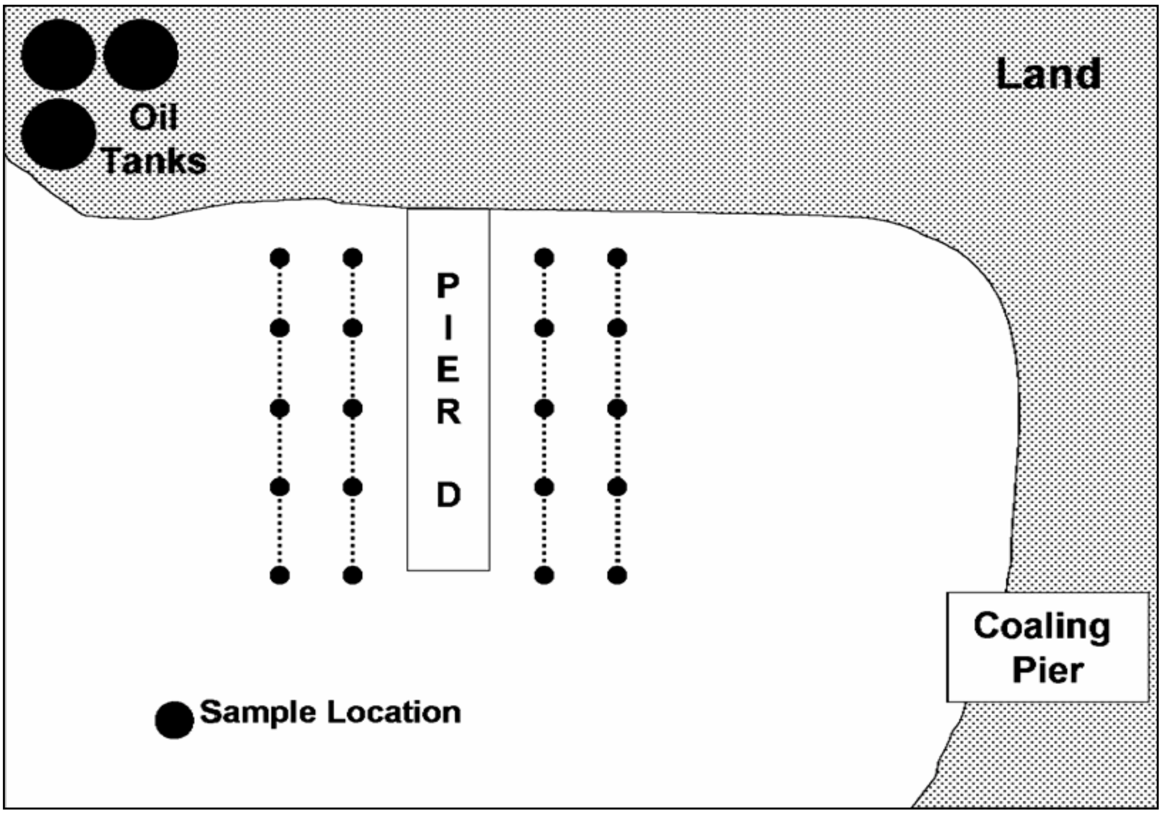

Figure A3. Map of sediment sampling plan

Sampling and Compositing Scheme

The basic approach for establishing the sampling array and compositing scheme included the following criteria:

- array sediment grid units in rows parallel to the dock consistent with the dredging plan;

- arrange sediment grid units in two rows along each side of the pier to provide testing of at least surface sediments both near and away from the dock;

- maintain common lateral boundaries between surface and subsurface sediment units as much as practicable to enable full depth dredging where allowed by testing results; and

- where possible, utilize the same sediment bore location for characterizing both surface and subsurface sediments.

Number of Samples and Analyses

The Pier D dredging area is considered an area of high concern for sediment contamination. Therefore, full sediment characterization requirements for a high concern dredging area are outlined below:

Surface Sediments (0 to 1 m): One core section and one laboratory analysis for each 3655 cubic meters.

Surface Sediments (>1 m): One core section for each 3655 m^3 and one laboratory analysis for each 11,000 m^3.

The estimated total volume of materials to be dredged from both basins is 156,700, including 1-ft over-depth.]

Depth Interval (meters)	Volume (meters^3)	Number of Core Sections	Number of Analyses
0-1	71,400	20	20
> 1	85,300	24	8 (composites)
Total:	156,700	44	28

Schedule

The field-sampling schedule is constrained by the shortest sample holding time (seven days). To safely meet the holding times for composited samples, the field samples will be composited and delivered for laboratory testing within three days of sampling the first core section within each composite. Sampling will generally proceed by completing all coring within a given subsurface composite (up to three sampling locations) before proceeding to bore locations for the next composite. Based on a review of the limited available sediment data and expected logistic considerations, it is projected that up to three full-depth sediment bores can be completed per sampling day. The entire core-sampling programme will be completed within 10 working days. Cleanup and other preparation of sample coring and handling equipment, acquisition of appropriate EPA-approved decontaminated sample containers from the analytic laboratories, on-site establishment of positioning references and tide gauge by the surveyor, and mobilization of the drill barge to the site will precede initiation of core sampling.

Equipment and Collection Techniques

Samples will be collected using a barge-mounted, hollow-stem auger-drilling rig equipped with a Gregory sampler. The hydraulically operated barge coring system acquires marine sediment cores up to 2 ft long in shallow water. The Gregory sampler uses compressed nitrogen to push the sampling tube into the sediments. Shelby tubes will be used for sampling and will be made of stainless steel. Tubes are 0.6 m long with 7.6-cm outside diameters and were selected based on the type of sediments expected at the project site.

This method of sampling, retrieval, and easing advancement at 2-ft intervals will be utilized until the total sample depth (-15 m) is reached.

Sample Transport and Custody

At the end of each day, the cores will be transferred to the laboratory facility. Chain-of-custody procedures will commence onboard the sampling barge and will track delivery of each of the cores to the analytical laboratory. Specific procedures are as follows:

- samples will be packaged and shipped in accordance with Department of Transportation regulations;

- coolers will be clearly labelled with sufficient information (name of project, time and date container was sealed, person sealing the cooler and the analytical laboratory name and address) to enable positive identification;

- a sealed envelope containing chain-of-custody forms will be enclosed in a plastic bag and taped to the inside lid of the cooler; and

- signed and dated chain-of-custody seals will be placed on all coolers prior to shipping.

Upon transfer of sample possession to the laboratory, the persons transferring custody of the coolers will sign the chain-of-custody form. Upon receipt of samples at the laboratory, the shipping container seal will be broken and the receiver will record the condition of the samples.

APPENDIX 2 - FIELD PREPARATIONS CHECKLIST

- ○ Protocols written for logistical considerations (who, when, where, how) and equipment checklists (samplers, containers, coolers, etc.) for each sampling activity.
- ○ Instructions written for sampling, positioning, labelling, transportation, and storage.
- ○ Data entry (chain of custody) forms and labels prepared.
- ○ Schedule and sampling plan posted so that all personnel are aware of what is expected and when.
- ○ Contingency plans written for backup sampling sites or protocols, personnel, and equipment.
- ○ Qualified personnel available for the safe operation of the vessel and any equipment (positioning, sampler, etc.).
- ○ The study plan approved by relevant stakeholders. (A complex plan should be reviewed by a statistician).
- ○ Sampling stations plotted with the appropriate co-ordinates on the map.

APPENDIX 3 - DEFINITIONS AND ABBREVIATIONS

Definitions

For the purpose of this London Convention guidance, the following definitions apply.

Chain-of-custody: The documentation that establishes the control of a sample between the time it is collected and the time it is analysed to demonstrate that no tampering or contamination of the sample occurred during that period.

Composite sample: A sample that is formed by combining material from more than one sample or subsample.

Contaminant: Any undesirable agent, substance, or material that is present in sediments, water, or tissue.

Control sediment: Sediment that is essentially free of contaminants and is used routinely to assess the acceptability of a biological test.

Core sample: A column of sediment which, when analysed, represents the vertical distribution of the physical, chemical and/or biological characteristics of the sediment.

Dredged material: Sediments that are excavated or dredged from freshwater, estuarine and marine waters.

Quality assurance (QA): Standardized processes or qualitative measures designed to ensure consistent and reliable output from laboratory or field test systems. QA is also a programme within a laboratory, intended to provide precise and accurate results in scientific and technical work. It includes selection of proper procedures, sample collection, selection of limits, evaluation of data, quality control (QC) and qualifications and training of personnel.

Quality control (QC): Standardized specifications or quantitative measures (e.g., control limits, tolerances) designed to interface with QA processes to ensure conformance with stated output objectives. (QC) is usually specific actions within the programme of quality assurance. It includes standardization, calibration, replication, control samples, and statistical estimates of limits for the data. (Environment Canada 1999, "Guidance Document on Application and Interpretation of Single-species Tests in Environmental Toxicology " Environmental Protection Series EPS 1/RM/34, Ottawa.)

Reference sediment: Option A: Sediment collected near the site of concern that may be used as an indicator of localized sediment conditions exclusive of the specific pollutant of concern. ISO

Replicate samples (field): A series of samples, collected at the same sampling station, using the same methods but independent of one another (not composited but stored in separate jars). Used to estimate the sampling error or to improve the precision of estimation. Replicate samples can also be used to help gauge the heterogeneity of the sediment.

Replicate samples (laboratory): A series of samples or sub-samples coming from a sampling station, which are analysed or tested (as in a toxicity test) separately as discrete samples. They are used to measure the variation in the analytical processes or the test population.

Sampling station: The physical location where samples are collected. The stations are usually best defined by co-ordinates.

Sediment: Particulate material such as sand, silt, or clay suspended in or settled on the bottom of a water body.

Split Sample: Sample that has been partitioned into two equal, or unequal parts, with or without prior homogenization of the sample, with the intention of producing representative sub-samples.

Storage Container: Container used to store field-collected samples. It may or may not be the sample container.

Sub-sample: A representative part of a sample that is studied to gain information about the characteristics and infer properties of the sample.

Testable hypothesis: A working explanation of a phenomenon. It is a statement of an expected result that can be tested either to nullify the hypothesis (show explanation is incorrect), suggest other testable hypotheses (other explanations), or lead to provisional acceptance.

Toxicity test: An experiment designed to determine the effect of a material or substance on a population of a given species under defined conditions.

Travel Blank: A randomly selected sample container that has been treated and handled identically to those containers used for samples collected for analysis. The empty container is filled with clean water (or sediment) and submitted with the field-collected samples for which it serves as a travel blank for either the chemical or toxicological analyses. The purpose of a travel blank is to assess any variation (or effects) that may be attributed to the actual transportation of the samples to the laboratory.

List of Acronyms

ASTM	American Society for Testing and Materials
CEDA	Central Dredging Association
EC	Environment Canada
ED	European Datum
GIPME	Global Investigation of Pollution in the Marine Environment (UNESCO-IOC)
IADC	International Association of Dredging Companies
ISO	International Organisation for Standardisation
LC72	London Convention 1972
QA/QC	Quality Assurance, Quality Control
TOC	Total Organic Carbon
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UTM	Upland Testing Manual, USACE document
WAG	Waste Assessment Guidance
WGS	World Geodetic System

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Mudroch, A. and S.D. MacKnight. 1994. CRC handbook of techniques for aquatic sediment sampling, 2nd Ed. CRC Press, Boca Raton, FL.

Office of Policy, Planning and Evaluation. Statistical Policy Branch. 1989. Methods for evaluating the attainment of cleanup standards. Volume I: soils and solid media. Washington, DC.

PIANC. 2000. Site investigation requirements for dredging works, PTC II/WG23, Supplement to Bulletin 103.

Radian Canada and L.H. Keith. 1992. National contaminated sites remediation programme guidance manual for sampling, analysis and data management. Volume 1. In house guidance manual for Environmental Protection Service, Environment Canada. 154 pp.

Steel, R.G.D. and J.H. Torrie. 1980. Principles and procedures of statistics. McGraw-Hill, New York, NY.

U.S. Environmental Protection Agency/ U.S. Army Corps of Engineers. 1991. Evaluation of dredged material proposed for ocean disposal: Testing manual, EPA-503/8-91/001, Office of Water, (WH-556F), Washington, D.C.
Web site: www.epa.gov/OWOW/oceans/gbook/index.html

U.S. Environmental Protection Agency. 1994. Methods for measuring the toxicity and bioaccumulation of sediment associated contaminants with freshwater invertebrates. Draft 2/4/94. Office of Science and Technology, United States Protection Agency, Washington, D.C.
Web site: www.epa.gov/owow/oceans/gbook

U.S. Environmental Protection Agency. 1995. QA/QC Guidance for Sampling and analysis of sediments, water, and tissues for dredged material evaluations (chemical evaluations). EPA 832-B-95-002. Office of Water, Washington, D.C.

U.S. Environmental Protection Agency/ U.S. Army Corps of Engineers. 1998. Evaluation of dredged material proposed for discharge in waters of the U.S.: Testing manual. EPA-823-B-98-004, Office of Water (4305), Washington, D.C.
Web site: www.epa.gov/ostwater/itm

U.S. Environmental Protection Agency. 2001. Methods for Collection, Storage and Manipulation of Sediments for Chemical and Toxicological Analyses: Technical Manual. EPA 823-B-01-002. U.S. Environmental Protection Agency, Office of Water, Washington, D.C.

Zar, J.H. 1984. Biostatistical analysis. Prentice-Hall, Englewood Cliffs,

4.2 Generic guidance, reports

IADC/CEDA (1997): Environmental Aspects of Dredging, Guide 3: Investigation, Interpretation and Impact. 67 pages, ISBN 90-75254-08-3

GIPME (2000): Guidance on Assessment of Sediment Quality. London, IMO publication No. 439/00

LC (2000): London Convention (1972), Guidelines for Assessment of Dredged Material

LC (2002): London Convention (1972), Guidelines for the Sampling of Sediment intended for Disposal at Sea. Doc. LC/SG 25/11/Add.1

OSPAR (1998): OSLO/PARIS Commission: Sediment Quality Criteria. Doc. SEBA 98/9/3

OSPAR (1999): OSLO/PARIS Commission, Dredged Material Guidelines

OSPAR (2002): OSPAR Report on Dumping of Wastes at Sea. OSPAR Agreement 2002-1, Part II.4. (OSPAR website, “Data Reporting”, Explanatory notes.doc)

PIANC (1996): Handling and Treatment of Contaminated Dredged Material from Ports and Inland Waterways. Vol.1, Report of Working Group no. 17 of PTC I, Suppl. to Bulletin no. 89, 76 pages

PIANC (1998): Management of aquatic disposal of dredged material. Report of Working Group 1 of the Permanent Environment Committee, 44 pages, ISBN 2-87223-105-6

PIANC (2004, in prep.): Generic Biological Assessment Guidelines for Dredged Material

Report of Working Group 8 of the Permanent Environment Committee

QUASIMEME: Bulletins and Newsletters (several per year)

UNEP have developed Reference Methods for Marine Pollution Studies

USACE (1995): Guidance on Assessment of Sediment quality

4.3 Collection of standard chemical analytical methods

There are several main systems in use for these analyses, for instance:

- in Europe, a European standard system is used (EN);
- several international and national collections may be consulted – e.g. QUASIMEME holds a ‘library’ of analytical methods used in Europe; and
- world-wide the ISO system is continuously developed (ISO).

National methods:

Australia
ANZECC/ARMCANZ 2000a, Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Environment and Conservation Council/Agriculture and Resource Management Council of Australia and New Zealand, October 2000.

Germany
German Standard Methods for the Examination of Water, Waste Water and Sludge.
German Institute of Normalisation (DIN), Wiley-VCH, ISBN 3-527-30345-6

Japan
Japan Standard Association (1998): Japanese Industrial Standard Testing Methods for Industrial Wastewater JIS K0102-1998, Japan Standard Association.

United States
USEPA 1986, Test Methods for Evaluating Solid Waste, SW-846, USEPA Office of Solid Waste and Emergency Response, Washington DC.
USEPA 1991, Evaluation of Dredged Material Proposed for Ocean Disposal — Testing Guide, EPA-503/8-91/001, USEPA and US Army Corps of Engineers.
USEPA / USACE 1998, Evaluation of dredged material proposed for discharge in waters of the U.S.: Testing manual. EPA-823-B-98-004, Office of Water (4305), Washington, DC.
USEPA 1994b, QA/QC Guidance for Sampling and Analysis of Water, Sediments and Tissues for Dredged Material Evaluations, Phase I — Chemical Evaluations, EPA Office of Water.

Others

EURACHEM: Quantifying Uncertainty in Analytical Measurement, ISBN 0-948926-08-2, 1995.
EN ISO / IEC 17025: General Requirements for the Competence of Testing and Calibration Laboratories, 2000;
ISO Guide 43: Development and Operation of Laboratory Proficiency Testing", 1984
ISO 9001: Quality Systems – Model for Quality Assurance in Design/Development, Production, Installation and Servicing, 1987;
ISO 5725 (Parts 2 and 4): Accuracy (Trueness and Precision) of Measurement Methods, 1994;

4.4 Biological methods - Guidances available
(Adapted from PIANC 2004, in prep.)

American Society for Testing and Materials. 2000. Standard Guide for Conducting Sediment Toxicity tests with Polychaetous Annelids. Method E 1611-00. ASTM, West Conshohocken, PA.

National Ocean Disposal Guidelines for Dredged Material, Commonwealth of Australia, Canberra, 2002 - http://www.ea.gov.au/coasts/pollution/dumping

ASTM 1994, Annual Book of ASTM Standards, Section 11, Water and Environmental Technology, Vol. 11.04, Biological Effects etc. American Society For Testing and Materials, Philadelphia (updated annually in September)

SETAC (2003 ?) Porewater Toxicity Testing: Biological, Chemical and Ecological Considerations - Review of Methods and Applications and Recommendations for Future areas of Research. Marion Nipper eds.

Herbst.T and Nendza.M Inventory of Marine Biotest Methods for the Evaluation of Dredged Material and Sediments (2000) Federal Environmental Agency, Research Report 298 25 753, Berlin

Environment Canada RM/34 - Guidance Document on Application and Interpretation of Single-Species Tests in Environmental Toxicology. EPS Report series, Ottawa. - Reviews many topics in environmental toxicology and might be useful to a person who wished to become familiar to the field. It includes some specific examples of using toxicity tests in the field.

Environment Canada RM/35 - Reference method for determining acute lethality of sediment to marine or estuarine amphipods (1998) EPS Report Series, Ottawa. (other tests also available).

Environment Canada RM/40 - Sublethal toxicity tests to assess sediments intended for disposal at sea (2001)EPS Report Series Ottawa.

Environment Canada RM/42 - Use of statistical methods in toxicity testing (2004). EPS Report Series, Ottawa.

Programme of Global Investigation of Pollution in the Marine Environment (GIPME). 2000. Guidance on assessment of sediment quality. Publication 439/00, International Maritime Organization/IMO, London, UK.

Ho, K.T., Burgess, R.M., Pelletier, C., Serbst, J.R., Ryba, S.A., Cantwell, M.G., Kuhn, A. & Raczelowski, P. (2002). An overview of toxicant identification in sediments and dredged materials. Mar. Poll. Bull. (in press).

Long, E. R., D. D. MacDonald, S. L. Smith, F. D. Calder. 1995. Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments. Environmental Management vol. 19(1): 81-97.

RIKZ, 2000a. The 10d marine amphipod Corophium volutator mortality sediment toxicity test. Standard Operating Procedure; Species – 01. National Institute for Coastal and Marine Management/RIKZ. The Hague, the Netherlands.

RIKZ. 2000b. Microtox solid phase (Vibrio fischeri) sediment toxicity test. Standard Operating Procedure; Species – 02. National Institute for Coastal and Marine Management/RIKZ. The Hague, the Netherlands.

RIKZ. 2000c. The 14d marine urchin Echinocardium cordatum mortality and behaviour sediment toxicity test. Standard Operating Procedure; Species – 03. National Institute for Coastal and Marine Management/RIKZ. The Hague, the Netherlands.

RIKZ. 2000d. Determination of 2,3,7,8-TCDD Toxic Equivalents (TCDD-TEQs) in sediments with DR-CALUX® (Chemical Activated Luciferase gene eXpression) bioassay. Technical report RIKZ SPECIE-07/1.2. National Institute for Coastal and Marine Management/RIKZ, The Hague, the Netherlands.

Ringwood, A. H., M.E. DeLorenzo, P.E. Ross, and A.F. Holland. 1997. Interpretation of Microtox solid-phase toxicity tests: the effects of sediment composition. Environ. Toxicol. Chem 16: 1135-1140.

Thain, J.E., 1991. Biological effects of contaminants: oyster (Crassostra gigas) embryo bioassay. In: Techniques in marine environmental sciences No. 11, International Council for the Exploration of the Sea, Copenhagen, Denmark.

4.5 Action levels (examples)

Belgium
See OSPAR Commission (2004) document

Canada
See *Disposal at Sea Regulations* (2001)

France
See OSPAR Commission (2004) document

Germany
Directive for the Management of Dredged Material in Coastal Waters (Handlungsanweisung Baggergut Kueste), Federal Institute of Hydrology, Koblenz, 1998 (see also OSPAR Commission document)

Italy
Pellegrini D. Onorati F., Virno Lamberti C., Merico G., Gabellini M. and Ausili A. (2002). Technical and scientific aspects of environmental protection related to dredging marine and brackish bottoms: Port Dredging. ICRAM Journal No 1.

Netherlands
See OSPAR Commission (2004) document

OSPAR Commission
OSLO/PARIS Commission (2004): Overview of national action levels for dredged material developed by Contracting Parties to the OSPAR Convention (draft). Doc. Xx

Portugal
Regulation on Dredging and Dredged Material Deposition in the Sea. Diário da República-II Série N°. 141, 21 June 1995 (under revision).

For detailed information contact persons or institutions listed in Appendix 6.

4.6 International Internet addresses for further information

CEDA	Central Dredging Association	www.dredging.org
CEN	European Committee for Standardisation	www.cenorm.be
IMO	International Maritime Organization	www.imo.org
ISO	International Organisation for Standardisation	www.iso.ch
LC	London Convention 1972	www.londonconvention.org
OSPAR	Oslo/Paris Commission	www.ospar.org
PIANC	International Navigation Association	www.pianc-aipcn.org
QUASIMEME	Quality Assurance Laboratory Performance Studies for Environmental Measurements in Marine Samples	www.quasimeme.marlab.ac.uk

APPENDIX 5 - OSPAR AGREEMENT 2002-1

OSPAR CONVENTION FOR THE PROTECTION OF THE MARINE ENVIRONMENT OF THE NORTH-EAST ATLANTIC

OSPAR Report on Dumping of Wastes at Sea
OSPAR Agreement 2002-1
[Extract of document]

2 PART II - Additional information

Contracting Parties should provide data and information concerning the items below, where a tabular reporting format is inappropriate, in their reports on amounts of waste dumped at sea.

4. Quality Assurance of Analyses of Dumped Material

It is important that Quality Assurance procedures are instituted for the analysis of samples taken of wastes and other material dumped in the maritime area. Please provide the following information:

a. Do the laboratories carrying out the analyses undertake:	All	None	Some
(i) the analysis of blank samples and laboratory reference materials with each batch of samples of waste and other material dumped in the maritime area that is analysed by that laboratory;			
(ii) periodic comparative analysis of laboratory reference materials and certified reference materials;			
(iii) the compilation of quality control charts based upon the data resulting from the analyses of the laboratory reference materials and certified reference materials, and the use of those quality control charts to monitor analytical performance in relation to all samples of dumped wastes or other materials;			
(iv) periodic participation in interlaboratory comparison exercises, including, where possible, international comparison exercises;			
(v) periodic participation in national and, where possible, international laboratory proficiency schemes, under which: • participating laboratories are asked to analyse samples of substances which are provided by the organisers of the scheme; • the composition of those samples is not disclosed in advance; • the results of the scheme for each participating laboratory are made available to all participating laboratories.			

b. If reporting "Some" in the table above, please indicate which parts of the data set are not subject to the full range of QA procedures.

c. Describe any practical action taken to apply the QA procedures described above (e.g. participation in inter-laboratory comparison exercises and international QA/QC schemes).

d. Are any special difficulties encountered in applying Quality Assurance procedures[20]?

[20] The following publications provide useful guidance which may be taken into account in applying Quality Assurance procedures:

(a) ISO Guide 43: Development and Operation of Laboratory Proficiency Testing", 1984

(b) ISO 9001: "Quality Systems – Model for Quality Assurance in Design/Development, Production, Installation and Servicing", 1987;

(c) EN ISO / IEC 17025: General Requirements for the Competence of Testing and Calibration Laboratories, 2000;

(d) ISO 5725 (Parts 2 and 4): "Accuracy (Trueness and Precision) of Measurement Methods", 1994;

(e) EURACHEM: "Quantifying Uncertainty in Analytical Measurement" (ISBN 0-948926-08-2), 1995.

APPENDIX 6 - CORRESPONDENCE GROUP

SUBMITTING COUNTRIES:

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Environment Canada
Ottawa

GERMANY
Helge Bergmann
Federal Institute of Hydrology
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Contributions to this report from:

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Advisor

WORLD ORGANIZATION OF DREDGING ASSOCIATIONS (WODA)
Neville Burt
CEDA Environment Committee Chairman

Any suggestions from the readership for improvement are welcome, and should be provided to:

London Convention
The Secretary
4 Albert Embankment
London SE1 7SR
United Kingdom

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ANNEX 8

UP-DATED LONG-TERM PROGRAMME FOR THE LONDON CONVENTION 1972 AND THE PROMOTION OF THE 1996 PROTOCOL THERETO (2004-2005)

(Agenda item 12)

GOAL 1 Outreach to prospective new Contracting Parties

1.1 New communication materials

2005/07 Product 1: **Up-date of London Convention Web-site (on-going)**

Basis:	LC/SG 23/11, §3.16
Reference:	LC 26/15, annex 9, point 3
Task Manager:	Secretariat/ web-master (consultant)
Target Date:	28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005) / 27th Consultative Meeting (2005)

2005/07 Product 2: **Compilation of Guidelines in one publication**

Basis:	26th Consultative Meeting
Reference:	LC 26/15, §9.8
Task Manager:	Secretariat
Target Date:	2005
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

2005/07 Product 3: **Review of information about the Convention in UN publications**

Basis:	26th Consultative Meeting
Reference:	LC 26/15, §§9.2 – 9.5
Task Manager:	Secretariat
Target Date:	2005
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

2005/07 Product 4: **Up-date of the 1991 publication "The London Dumping Convention, the first Decade and Beyond"**

Basis:	24th Consultative Meeting
Reference:	LC 25/16, §10.4.2
Task Manager:	Secretariat
Target Date:	2005
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

1.2 Reports from Contracting Parties and the Bureau (on-going)

2005/07 Product 5: **Promotion of London Convention and Protocol in international meetings**

Basis:	LC 24/17, chapter 10; LC 26/5/1, §§12.3 and 12.4
Reference:	LC 25/16, §12.13 and annex 6; LC 26/15, §§9.9 – 9.23
Task Manager:	Focal points/Contracting Parties/Bureau
Target Date:	2005
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

GOAL 2 Preparation for the entry into force of the 1996 Protocol

2.1 Development of compliance procedures and mechanisms under Article 11.1 of the Protocol

2005/07 Product 6: **Review of initial text for compliance procedures and mechanisms**

Basis: Report of WG on Reporting and Compliance (LC 25/6, §3.9-3.32)
Reference: LC 25/16, §3.33-3.34; LC 26/15, §3.15.2
Task Manager: Consultative Meeting / Meeting of Contracting Parties under Protocol
Target Date: 2005
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005) / (A) Meeting of Contracting Parties under Protocol

2.2 Development of draft procedures and criteria for emergency situations under Articles 8.2 and 18.1.6 of the Protocol

2004/05 Product 7: **Review of Draft Procedures and Criteria**

➢**Final stage:** **Obtain advice of the IMO Maritime Safety Committee**

Basis: Report from Drafting Group on Emergency Procedures (LC 25/16, §3.48)
Reference: LC 25/16, §3.51-52.3; LC 26/15, §3.26.2
Task Manager: Secretariat
Target Date: December 2004
Reporting: Secretariat
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005) / (A) Meeting of Contracting Parties under Protocol

2.3 Technical, administrative and legal assistance (as and when required)

2005/06 Product x: **Respond to requests for a transitional period towards full compliance with the London Protocol**

Basis: Article 26 of the Protocol
Reference: LC 26/15, annex 10
Task Manager: Consultative Meeting / Meeting of Contracting Parties / Bureau
Target Date: ..
Reporting: Requesting State
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005) / (R) Meeting of Contracting Parties under Protocol

GOAL 3 Compliance issues

3.1 Compliance with the reporting requirements under Article VI.4 of the London Convention (on-going)

2005/07 Product 8: **Reporting requirements under Article VI(4)**

➢**Stage 1:** **Submit dumping reports**

Basis: Article VI(4) of the Convention / Article 9.4 of the Protocol
Reference: LC 26/15, §4.12
Task Manager: Contracting Parties whose reports were still outstanding for the years 2001 to 2002
Target Date: by 1 February 2005
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

➢**Stage 2:** **Prepare first draft compilation reports on activities in 2001 and 2002**

Basis: LC 26/15, §4.11
Reference: LC 26/15, §4.11
Task Manager: Secretariat
Target Date: March 2005
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

➢Stage 3: Consider first draft compilation reports on activities in 2001 and 2002

Basis: LC 26/15, §4.11
Reference: LC 26/15, §4.11
Task Manager: Scientific Group (See also product 9, stage 7)
Target Date: 28th Meeting of SG (2005)
Reporting: 27th Consultative Meeting (2005)
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

2005/07 Product 9: Implementation of the 2004 Strategy to improve reporting under the Convention

➢Stage 1: Develop electronic format for reporting dumping activities

Basis: Short-term and Long-term Strategy (LC/SG 27/15, annex 7)
Reference: LC 26/15, §4.7.2, annex 6
Task Manager: Secretariat + Belgium
Target Date: by 1 February 2005
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

➢Stage 2: Write to Ministers of Contracting Parties urging them to report dumping activities

Basis: Short-term and Long-term Strategy (LC/SG 27/15, annex 7)
Reference: LC 26/15, §4.7.3, annex 6; LC 26/5/1, §12.2
Task Manager: Bureau
Target Date: by 1 February 2005
Reporting: 27th Consultative Meeting (2005)
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

➢Stage 3: List Contracting Parties that have not reported for the past 5 years

Basis: Short-term and Long-term Strategy (LC/SG 27/15, annex 7)
Reference: LC 26/15, §4.7.3, annex 6
Task Manager: Secretariat
Target Date: 27th Consultative Meeting (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) Every Consultative Meeting

➢Stage 4: Obtain dumping reports submitted to regional conventions

Basis: LC 26/15, §4.7.3
Reference: LC 26/15, §4.7.3
Task Manager: Secretariat
Target Date: by 15 March 2005
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

➢Stage 5: Involve UNEP with overcoming reporting problems (target completion date 2006)

Basis: Short-term and Long-term Strategy (LC/SG 27/15, annex 7)
Reference: LC/SG 27/15, annex 7
Task Manager: Secretariat
Target Date: 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

➢Stage 6: Develop a database on dumping reports

Basis: Short-term and Long-term Strategy (LC/SG 27/15, annex 7)
Reference: LC/SG 27/15, annex 7
Task Manager: Secretariat
Target Date: March 2006
Reporting: Secretariat
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

➢**Stage 7:** **Assessment of dumping reports by correspondence group**
Basis: Short-term and Long-term Strategy (LC/SG 27/15, annex 7)
Reference: LC/SG 27/15, annex 7
Task Manager: Correspondence Group to be established at 28th meeting of SG
Target Date: 29th meeting of SG (2006)
Reporting: correspondence group
Review (R)/Adoption (A): (R) 28th Consultative Meeting (2006)

3.2 Contribution of the London Convention to the Global Assessment of the State of Marine Environment (GMA process) (on-going)

2005/06 Product 10: **Monitor and report on the establishment of the GMA process**
Basis: LC 26/15, §10.6
Reference: LC 25/16, §5.17
Task Manager: Secretariat & Chair of Scientific Group
Target Date: 28th meeting of SG (2005)
Reporting: Secretariat/Chair Scientific Group
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

2005/07 Product 11: **Contracting Parties to submit their field monitoring reports**

➢**Stage 1:** **Distribute circular letter inviting Contracting Parties to report on monitoring**
Basis: LC 26/15, §10.13
Reference: LC 26/15, §10.13
Task Manager: Secretariat
Target Date: by 1 January 2005
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

➢**Stage 2:** **Contracting Parties to submit their field monitoring reports**
Basis: LC 26/15, §10.13
Reference: LC 26/15, §10.13
Task Manager: Contracting Parties
Target Date: In time for 28th meeting of SG (2005)
Reporting: Contracting Parties
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

➢**Stage 3:** **United Kingdom to discuss reporting on monitoring with OSPAR Commission**
Basis: LC 26/15, §10.14
Reference: LC 26/15, §10.14
Task Manager: United Kingdom
Target Date: ASAP
Reporting: United Kingdom
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

2005/07 Product 12: **Continue work on the contribution to the GMA – process**
Basis: LC 26/15, §10.7 (preliminary overview by Secretariat)
Reference: LC 26/15, §10.7
Task Manager: Scientific Group
Target Date: 2006
Reporting: Scientific Group
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005) / (A) 28th Consultative Meeting

3.3 Reporting procedure of observed dumping incidents which may be in violation of international dumping treaties (London Convention 1972 and the 1996 Protocol thereto)

2005/07 Product 13: **Promotion of reporting procedure of observed dumping incidents**

➢**Stage 1:** **Put French and Spanish language versions of "Incident Information Forms" on London Convention Web-site**
Basis: LC 24/17, §§3.8 –3.13, annex 3
Reference: LC 26/15, §4.4.1
Task Manager: Secretariat
Target Date: by 15 December 2004
Reporting: Secretariat
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

➢**Stage 2:** **Facilitate web-based submission of incident reports**
Basis: LC 24/17, §§3.8 –3.13, annex 3
Reference: LC 26/15, §4.4.2
Task Manager: Secretariat with assistance of United States
Target Date: by 31 January 2005
Reporting: Secretariat
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

➢**Stage 3:** **Contracting Parties to raise awareness that incident reports can be submitted**
Basis: LC 24/17, §§3.8 –3.13, annex 3
Reference: LC 26/15, §4.4.3
Task Manager: Contracting Parties
Target Date: on-going
Reporting: Contracting Parties
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

GOAL 4 CO_2 sequestration in geological structures

4.1 Ensure consistency with the London Convention and Protocol

2005 Product 14: **United Kingdom to convene correspondence group to consider legal issues**

➢**Stage 1:** **Elaborate the questions to be addressed**
Basis: LC 26/15, §6.38.1
Reference: LC 26/15, §6.38.1
Task Manager: United Kingdom
Target Date: December 2004
Reporting: Correspondence group/United Kingdom
Review (R)/Adoption (A): (R) 28th meeting of SG (2005) / (A) 27th Consultative Meeting (2005)

➢**Stage 2:** **Prepare factual description of options for geological sequestration**
Basis: LC 26/15, §6.38.2
Reference: LC 26/15, §6.38.2
Task Manager: Correspondence group
Target Date: February 2005
Reporting: Correspondence group
Review (R)/Adoption (A): (R) 28th meeting of SG (2005) / (A) 27th Consultative Meeting (2005)

➢**Stage 3:** **Contracting Parties to prepare views on each of the legal issues identified**
Basis: LC 26/15, §6.38.3
Reference: LC 26/15, §6.38.3
Task Manager: Contracting Parties
Target Date: July 2005
Reporting: Correspondence group
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

4.2 Make an initial assessment of risks and benefits and identify gaps in knowledge

2005/06 Product 15: **Prepare groundwork for initial assessment**

➢**Stage 1:** **Invite correspondence group to prepare for initial assessment**
Basis: LC 26/15, §6.43
Reference: LC 26/15, §6.43
Task Manager: Secretariat
Target Date: January 2005
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

➢**Stage 2:** **Correspondence group to collect initial information**
Basis: LC 26/15, §6.43
Reference: LC 26/15, §6.43
Task Manager: Correspondence group
Target Date: April 2005
Reporting: Correspondence group
Review (R)/Adoption (A): (R) 28th meeting of SG (2005) / (R) 27th Consultative Meeting (2005)

2005 Product 16: **United Kingdom to convene a one-day CO_2 seminar prior to 28th meeting of Scientific Group**
Basis: LC 26/15, §6.44
Reference: LC 26/15, §6.44
Task Manager: United Kingdom
Target Date: 20 May 2005
Reporting: United Kingdom
Review (R)/Adoption (A): (R) 28th meeting of SG (2005) / (R) 27th Consultative Meeting (2005)

4.3 Relation to work on CO_2 sequestration carried out in other fora

2005/06 Product 17: **Communicate with other fora for sharing relevant information**
Basis: LC 26/15, §6.46.1
Reference: LC 26/15, §6.46.1
Task Manager: Secretariat
Target Date: 2005
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)/ (R) 27th Consultative Meeting (2005)

2005/07 Product 18: **Contracting Parties to ensure effective in-house co-ordination on marine protection issues relating to CO_2 sequestration**
Basis: LC 26/15, §6.46.2
Reference: LC 26/15, §6.46.2
Task Manager: Contracting Parties
Target Date: Continuous
Reporting: Contracting Parties
Review (R)/Adoption (A): Not applicable

GOAL 5 Develop guidance and address technical and scientific issues to implement the London Convention and Protocol

5.1 Waste Assessment Guidance

5.1.1 Review of the 1997 Generic Guidelines[21] (target date completion 2006)

2005/06 Product 19: **Submission of draft amendments to the Generic Guidelines**
Basis: LC/SG 23/1, §2.31
Reference: LC/SG 27/15, §§2.48 – 2.51
Task Manager: Contracting Parties/Secretariat
Target Date: In time for 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th Meeting of SG (2005) and 27th Consultative Meeting (2005)

[21] Guidelines for the assessment of wastes or other matter that may be considered for dumping (LC 19/10, annex 2)

5.1.2 Experience with practical implementation of the Generic Guidelines (on-going)

2005/07 Product 20: Submission of experiences and case studies

Basis:	LC 19/10, §4.8
Reference:	LC 26/15, Annex 9, point 1
Task Manager:	Every Contracting Party
Target Date:	In time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

5.1.3 Review of the 2000 "Specific Guidelines" and development of "pre-screening criteria" (target completion date 2006)

2005/06 Product 21: Specific Guidelines for Assessment of Inert, Inorganic Geological Material: development of *pre-screening* criteria

➢**Stage 1: Provide comments**

Basis:	LC/SG 27/15, §§2.19 to 2.31 and Annex 4
Reference:	LC 26/15, Annex 9, point 1
Task Manager:	United States
Target Date:	by 31 December 2004
Reporting:	Mr. John Lishman (United States)
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

➢**Stage 2: Continue review of *pre-screening* criteria**

Basis:	LC/SG 27/15, §§2.19 to 2.31 and Annex 4
Reference:	LC 26/15, §6.5 and annex 9, point 1
Task Manager:	WG on pre-screening criteria
Target Date:	28th meeting of SG (2005)
Reporting:	Scientific Group
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005) / (R) 27th Consultative Meeting (2005)

2005/06 Product 22: Review of Specific Guidelines to clarify these for improving communication to and use by developing countries

Basis:	LC 26/5/1, §12.6
Reference:	LC 26/15, §12.8
Task Manager:	Scientific Group
Target Date:	28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005) / (R) 27th Consultative Meeting (2005)

5.1.4 National Action Levels and their application (on-going)

2005/07 Product 23: Submission of experiences and case studies

Basis:	LC 26/15, annex 9, point 1
Reference:	LC 26/15, annex 9, point 1
Task Manager:	Every Contracting Party
Target Date:	in time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

5.1.5 Review of the 1997 Advice on Management of Spoilt Cargoes (target date 2006)

2005/06 Product 24: Review of Advice on spoilt cargo management

➢**Stage 1: Contact IMO and MEPC 53**

Basis:	LC 26/15, §6.57
Reference:	LC 26/15, §6.57
Task Manager:	Secretariat
Target Date:	In time for MEPC 53 (July 2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

➢**Stage 2:** **Collect information on other spoilt cargoes of perishable goods than bananas**

Basis: LC 26/15, §6.57
Reference: LC 26/15, §6.57
Task Manager: Secretariat
Target Date: ASAP
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

➢**Stage 3:** **Contracting Parties to enquire at home on the scale and seriousness of spoilt cargoes occurring**

Basis: LC 26/15, §6.57
Reference: LC 26/15, §6.57
Task Manager: Contracting Parties
Target Date: In time for 28th meeting of SG (2005)
Reporting: 28th meeting of SG (2005)
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

➢**Stage 4:** **Consultative Meeting to address outstanding legal and policy issues**

Basis: LC 26/15, §§6.50 - 6.51
Reference: LC 26/15, §§6.50 - 6.51
Task Manager: Secretariat/Chairman
Target Date: In time for 27th Consultative Meeting (2005)
Reporting: Contracting Parties
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

5.1.6 2004 Guidelines for sampling and analysis of dredged material (target completion date 2005)

2005 Product 25: **Preparation of publication of the 2004 Guidelines**

Basis: LC 26/15, §5.5
Reference: LC 26/15, §5.5
Task Manager: Secretariat
Target Date: April 2005
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

5.1.7 Guidance on the development of Action Lists and Action Levels (target completion date 2007)

2005/07 Product 26: **Develop guidance on Action Lists and Action Levels**

➢**Stage 1:** **Assign Working Group members to prepare specific sections of a "white paper" providing an overview and analysis of existing methods and approaches**

Basis: LC/SG 27/15, §2.14 +§2.18, annex 3
Reference: LC 26/15, §5.7, annex 9
Task Manager: Lead countries United Kingdom and United States
Target Date: December 2004
Reporting: Lead countries
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

➢**Stage 2:** **Collect and assemble sections of the "white paper" into a first draft of the overview and analysis**

Basis: LC/SG 27/15, §2.14 +§2.18, annex 3
Reference: LC 26/15, §5.7, annex 9
Task Manager: Lead countries United Kingdom and United States
Target Date: February 2005
Reporting: Lead countries
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

➢**Stage 3:** **Prepare an inventory of action levels for analysis based on the overview report on action levels for dredged materials developed under the OSPAR Convention**

Basis: LC/SG 27/15, §2.14 +§2.18, annex 3
Reference: LC 26/15, §§5.6 - 5.7, annex 9
Task Manager: Lead country Belgium
Target Date: February 2005
Reporting: Lead country
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

➢**Stage 4:** **Lead countries to present a progress report on this activity**

Basis: LC/SG 27/15, §2.14 +§2.18, annex 3
Reference: LC 26/15, §5.7, annex 9
Task Manager: Lead countries United Kingdom and United States
Target Date: In time for 28th meeting of SG (2005)
Reporting: Lead countries
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

5.1.8 Experience with practical implementation of the Specific Guidelines (on-going)

2005/07 Product 27: **Submission of experiences and case studies**

Basis: LC/SG 27/15, §§2.53 – 2.54
Reference: LC/SG 27/15, §§2.53 – 2.54
Task Manager: Every Contracting Party
Target Date: In time for 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of the SG (2005)

5.1.9 Risk assessment procedures in waste management (on-going)

2005/07 Product 28: **Submission of experiences and case studies**

Basis: LC/SG 27/15, §§2.61 – 2.63
Reference: LC/SG 27/15, §§2.61 – 2.63
Task Manager: Every Contracting Party
Target Date: In time for 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

5.1.10 Application of biological assessment techniques (on-going)

2005/07 Product 29: **Submission of reports on experiences**

Basis: LC/SG 27/15, §§2.58 – 2.60
Reference: LC/SG 27/15, §§2.58 – 2.60
Task Manager: Every Contracting Party
Target Date: In time for 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

5.1.11 Alternative waste management options (on-going)

2005/07 Product 30: **Submission of case studies on the application of the waste prevention audit under the Generic Guidelines**

Basis: LC/SG 27/15, §§2.65 – 2.66
Reference: LC 26/15, annex 9, point 1
Task Manager: Every Contracting Party
Target Date: In time for 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005)

5.2 Monitoring and Assessment

5.2.1 Reports and assessment of monitoring activities (on-going)

2005/07 Product 31: **Submission of reports**

Basis:	LC/SG 27/15, §7.1
Reference:	LC 26/15, annex 9, point 2
Task Manager:	Every Contracting Party
Target Date:	In time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

2005/06 Product 32: **Bauxite Residues: Report on final results of EIA and long-term outlook for practical solutions**

Basis:	LC/SG 27/15, §§7.7 – 7.12
Reference:	LC SG 27/15, §12.3
Task Manager:	Japan
Target Date:	In time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

5.2.2 New techniques in assessing impacts of sea disposal on the marine environment (on-going)

2005/07 Product 33: **Presentation of case studies**

Basis:	LC/SG 25/15, §7.15
Reference:	LC/SG 25/15, §7.15
Task Manager:	Every Contracting Party
Target Date:	In time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

5.2.3 National and regional strategies (on-going)

2005/07 Product 34: **Submission of reports on national and regional strategies**

Basis:	LC/SG 27/15, §7.18
Reference:	LC/SG 27/15, §7.18
Task Manager:	Every Contracting Party
Target Date:	In time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

5.2.4 Antifouling paint compounds and endocrine disrupters in materials disposed at sea (on-going)

2005/07 Product 35: **Submission of reports/case studies on national and regional strategies**

Basis:	LC/SG 22/13, §10.6
Reference:	LC/SG 27/15, §7.14
Task Manager:	Every Contracting Party
Target Date:	In time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

5.3 Habitat Modification/Enhancement

5.3.1 Beneficial use of dredged material (on-going)

2005/07 Product 36: **Submission of reports**

Basis:	LC/SG 27/15, §§8.1 – 8.3
Reference:	LC/SG 27/15, §§8.1 – 8.3
Task Manager:	Every Contracting Party
Target Date:	In time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

5.3.2 Experience with habitat enhancement activities (on-going)

2005/07 Product 37: Submission of reports

Basis:	LC/SG 27/15, §§8.1 – 8.3
Reference:	LC/SG 27/15, §§8.1 – 8.3
Task Manager:	Every Contracting Party
Target Date:	In time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

5.4 Coastal Management and Prevention of Marine Pollution

5.4.1 Sewage treatment facilities and sewage sludge management (on-going)

2005/07 Product 38: Submission of case studies

Basis:	LC/SG 27/15, §§9.1 – 9.7
Reference:	LC/SG 27/15, §§9.1 – 9.7
Task Manager:	Every Contracting Party
Target Date:	In time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

5.4.2 Industrial process and waste management (on-going)

2005/07 Product 39: Submission of case studies

Basis:	LC/SG 27/15, §§9.1 – 9.7
Reference:	LC/SG 27/15, §§9.1 – 9.7
Task Manager:	Every Contracting Party
Target Date:	In time for 28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

5.5 Science Day (on-going)

2005 Product 40: Science Day: experiences with "placement activities"

Basis:	LC/SG 24/11, §8.1
Reference:	LC 26/15, §5.15
Task Manager:	All delegations
Target Date:	28th meeting of SG (2005)
Reporting:	Not applicable
Review (R)/Adoption (A):	28th meeting of SG (2005)

GOAL 6 Matters related to the management of radioactive wastes

6.1 Guidance on the protection of the environment from the effects of ionizing radiation (on-going)

2005/07 Product 41: Development of a mechanism for environmental protection from the effects of ionizing radiation

Basis:	21st Consultative Meeting
Reference:	LC 26/15, §§8.1 – 8.3
Task Manager:	IAEA
Target Date:	In time for 27th Consultative Meeting (2005)
Reporting:	IAEA
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

6.2 Status of Resolution LC.51(16) on the prohibition of dumping of radioactive wastes (target completion date 2005)

2005 Product 42: Report by the Russian Federation

Basis:	Declaration of non-acceptance of amendments (LC 26/2, Annex 3)
Reference:	LC 26/15, §§8.4 – 8.10
Task Manager:	Russian Federation
Target Date:	27th Consultative Meeting (2005)
Reporting:	Russian Federation
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

GOAL 7 Interpretation of the London Convention 1972

7.1 Interpretation of Industrial waste

7.1.1 Exceptions to the definition of industrial waste: inert, inorganic geological material

➢ *See Product 21*

7.2 Guidance on placement of matter for a purpose other than the mere disposal thereof

<u>2005 Product 43:</u> **Submission of reports on placement activities**

Basis:	LC 22/14, §5.16
Reference:	Product 40 and LC 26/15, §6.15
Task Manager:	Contracting Parties
Target Date:	In time for 27th Consultative Meeting (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

7.3 Article III exemption for "normal operations of vessels" (Co-operation with MEPC) (target completion date 2007)

<u>2005 Product 44:</u> **Contracting Parties, being Parties to MARPOL, to identify examples or cases which they regard as "dumping" instead of normal operations of vessels and submit these both to Scientific Group and MEPC**

➢Stage 1: **Submission to Scientific Group**

Basis:	LC 26/15, §6.10.4
Reference:	LC 26/15, §6.10.4
Task Manager:	Every Contracting Party concerned
Target Date:	In time for 28th meeting of SG (May 2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005)

➢Stage 2: **Submission to MEPC 53**

Basis:	LC 26/15, §6.10.4
Reference:	LC 26/15, §6.10.4
Task Manager:	Every Contracting Party concerned
Target Date:	In time for MEPC 53 (July 2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

➢Stage 3: **Collaboration with MEPC to clarify the boundaries between MARPOL and the London Convention and Protocol on "dumping" and "normal operations of vessels"**

Basis:	LC 26/15, §6.10.3
Reference:	LC 26/15, §6.10.3
Task Manager:	Bureau
Target Date:	2005
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

GOAL 8 Technical co-operation and assistance

8.1 Long-Term Strategy for Technical Co-operation and Assistance under the London Convention and implementation thereof (on-going)

2005/07 Product 45: Review of the Long-Term Strategy

Basis: LC/SG 26/12, annex 5, point 3
Reference: LC 26/15, annex 9, point 3
Task Manager: Scientific Group
Target Date: 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

2005/07 Product 46: Collect more comprehensive information on developing countries' perception of Convention and Protocol

Basis: LC 26/5/1, §12.1
Reference: LC 26/15, §5.24
Task Manager: Secretariat/Scientific Group
Target Date: 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

8.2 Implementation of technical co-operation projects (on-going)

2005/07 Product 47: SEA-WASTE Network on Integrated Waste Management in Southern and Eastern Africa

Basis: LC/SG 24/11, §3.19
Reference: LC 26/15, §7.15
Task Manager: Secretariat
Target Date: 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

2005/06 Product 48: Completion of the Waste Assessment Guidance Training Set in 2006

Basis: LC/SG 21/13, §§4.16 - 4.20
Reference: LC 26/15, §§7.16 and 7.17
Task Manager: WAG-TS correspondence group[22] / Secretariat / consultant
Target Date: by 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 28th meeting of SG (2005) / 27th Consultative Meeting (2005)

2005/06 Product 49: Development of a PDF-Block B Grant Request for submission to GEF/UNEP in 2006

Basis: LC 21/13, annex 3; LC 26/5/1, §12.5
Reference: LC 26/15, §§7.18 – 7.22
Task Manager: Secretariat
Target Date: 28th meeting of SG (2005)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 27th Consultative Meeting (2005)

2007 Product 50: Update of Waste Assessment Guidance Training Set from 2007 onwards

Basis: LC 26/15, annex 9, point 3
Reference: LC 26/15, §§7.16 and 7.17
Task Manager: Scientific Group
Target Date: by 30th meeting of SG (2007)
Reporting: Secretariat
Review (R)/Adoption (A): (R) 30th meeting of SG (2007) / 29th Consultative Meeting (2007)

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[22] Waste Assessment Guidance Training Set correspondence group. It consists of Canada, the Netherlands, United Kingdom, United States and WODA.

2007 Product 51: **Convene workshops utilizing the WAG Training Set from 2007 onwards**

Basis:	LC 26/15, annex 9, point 3
Reference:	LC 26/15, §§7.16 and 7.17
Task Manager:	Scientific Group / users of WAG Training Set
Target Date:	by 30th meeting of SG (2007)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 30th meeting of SG (2007) / 29th Consultative Meeting (2007)

2005/07 Product 52: **Prepare advice on technical co-operation issues (on-going)**

Reference:	LC 26/15, annex 9, point 3

8.3 Development of a suite of approaches for organizing Workshops (target completion date 2006)

2005/06 Product 53: **Development of a suite of approaches for organizing Workshops**

Basis:	LC 26/15, §7.11
Reference:	LC 26/15, §7.11
Task Manager:	Scientific Group
Target Date:	28th meeting of SG (2005)
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 28th meeting of SG (2005) / 27th Consultative Meeting (2005)

8.4 Application of London Convention expertise in other areas of marine environmental protection (on-going)

2005/06 Product 54: **Provide a London Convention input for the 2006 review of the UNEP Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)**

Basis:	LC 26/15, annex 9, point 3; LC 24/17, §7.5
Reference:	LC 26/15, §11.2
Task Manager:	Secretariat/Chairman
Target Date:	2006
Reporting:	28th meeting of SG (2005)
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

2005/07 Product 55: **Consider a London Convention contribution for assistance to Somalia based on the UNEP fact-finding mission results**

Basis:	LC/SG 27/15, §§4.13 – 4.19
Reference:	LC 26/15, §5.18
Task Manager:	UNEP/Secretariat
Target Date:	2005
Reporting:	UNEP/Secretariat
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

GOAL 9 Relations with other organizations in the field of marine environmental protection

9.1 Development of collaborative arrangements with other relevant international organizations (on-going)

2005 Product 56: **Collaborative arrangements with the United Nations Environment Programme (UNEP)**

Basis:	Discussions at 24th and 25th Consultative Meetings
Reference:	LC 26/15, §§11. 2 –11.3 and 11.10
Task Manager:	Secretariat/Chairman
Target Date:	2005
Reporting:	Secretariat
Review (R)/Adoption (A):	(R) 27th Consultative Meeting (2005)

<u>2005 Product 57:</u> **Collaborative arrangements with the International Ocean Institute (IOI)**

<u>Basis</u>: Discussions at 25th Consultative Meeting
<u>Reference</u>: LC 26/15, §§11. 4 –11.7 and 11.10
<u>Task Manager</u>: Secretariat/Chairman
<u>Target Date</u>: 2005
<u>Reporting</u>: Secretariat
<u>Review (R)/Adoption (A)</u>: (R) 27th Consultative Meeting (2005)

<u>2005 Product 58:</u> **Collaborative arrangements with the Environmental Crime Prevention Programme (ECPP)**

<u>Basis</u>: LC 26/15, §8.17 and §12.7
<u>Reference</u>: LC 26/15, §8.17 and §12.7
<u>Task Manager</u>: Secretariat/Chairman
<u>Target Date</u>: 2005
<u>Reporting</u>: Secretariat
<u>Review (R)/Adoption (A)</u>: (R) 27th Consultative Meeting (2005)

<u>2005/06 Product 59:</u> **Exploration of collaborative arrangements with the Intergovernmental Oceanographic Commission (UNESCO-IOC)**

<u>Basis</u>: Discussions at 25th Consultative Meeting
<u>Reference</u>: LC 26/15, §11.10
<u>Task Manager</u>: Secretariat/Chairman
<u>Target Date</u>: 2006
<u>Reporting</u>: Secretariat
<u>Review (R)/Adoption (A)</u>: (R) 27th Consultative Meeting (2005)

<u>2005/06 Product 60:</u> **Exploration of collaborative arrangements with the Food and Agriculture Organization (FAO)**

<u>Basis</u>: Discussions at 25th Consultative Meeting
<u>Reference</u>: LC 26/15, §11.10
<u>Task Manager</u>: Secretariat/Chairman
<u>Target Date</u>: 2006
<u>Reporting</u>: Secretariat
<u>Review (R)/Adoption (A)</u>: (R) 27th Consultative Meeting (2005)

9.2 Advice from international organizations on specific issues (on-going)

<u>2005 Product 61:</u> **Consideration of requesting advice on current work programme items from GESAMP**

<u>Basis</u>: LC 26/15, §11.19
<u>Reference</u>: LC 26/15, §11.19
<u>Task Manager</u>: Scientific Group/Secretariat
<u>Target Date</u>: 2005
<u>Reporting</u>: Scientific Group/Secretariat
<u>Review (R)/Adoption (A)</u>: (R) 27th Consultative Meeting (2005)

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ANNEX 9

AMENDED FUTURE WORK PROGRAMME OF THE SCIENTIFIC GROUP (TWENTY-EIGHTH, TWENTY-NINTH AND THIRTIETH MEETINGS)

(Agenda item 12)

		2005 28th	**2006 29th**	**2007 30th**	**TARGET COMPLETION DATE**
1	**WASTE ASSESSMENT GUIDANCE:**				
	- Review of the Generic Guidelines (WAG)	XX	XXX		2006
	- Review of Specific Guidelines for inert materials and bulky items	XX	XX		2006
	- Spoilt cargoes management	XX	XX		2006
	- Development of "pre-screening" criteria	XXX	XXX		2006
	- Guidance on the development of Action List levels	XXX	XXX	XXX	2007
	- National Action Levels and their application	XX	XX	XX	ON-GOING
	- Experience with practical implementation of the WAG	XX	XX	XX	ON-GOING
	- Application of biological assessment techniques	XX	XX	XX	ON-GOING
	- Alternative waste management options	XX	XX	XX	ON-GOING
2	**MONITORING AND ASSESSMENT:**				
	- Reports and assessment of monitoring	XXX	XXX	XXX	ON-GOING
	- Contribution to the GMA-process	XX	XX	XX	ON-GOING
	- New techniques	X	X	X	ON-GOING
	- National and regional strategies	X	X	X	ON-GOING
	- Antifouling paint compounds and other compounds of concern (e.g., PBDEs) in materials disposed at sea	XX	XXX	XX	ON-GOING

		2005 28th	2006 29th	2007 30th	TARGET COMPLETION DATE
3	**TECHNICAL CO-OPERATION:**				
	- Complete new modules of the WAG Training Set	XX	XXX		2006
	- Update WAG Training Set			X	ON-GOING
	- Workshops utilizing WAG Training Set			XXX	ON-GOING
	- Advice on technical co-operation issues	XX	XX	XX	ON-GOING
	- Update LC Web-site	XXX	XXX	XXX	ON-GOING
	- Collaboration with UNEP	XX	XX	XX	ON-GOING
	- Implementation and update of TC Strategy	XXX	XXX	XXX	ON-GOING
	- Application of LC expertise in other areas of marine environmental protection (e.g., MARPOL 73/78, UNEP/GPA, Regional Sea Conventions)	X	XX	X	ON-GOING
4	**HABITAT MODIFICATION/ ENHANCEMENT:**				
	- Beneficial use of waste materials	XX	XX	XX	ON-GOING
	- Experience with habitat enhancement	XX	XX	XX	ON-GOING
5	**DUMPING REPORTS:**				
	- Review and improvement of reporting	XXX	XXX	XXX	ON-GOING
	- Collaboration with UNEP on reporting	XX	XX		2006

		2005 28th	**2006 29th**	**2007 30th**	**TARGET COMPLETION DATE**
6	**COASTAL MANAGEMENT AND PREVENTION OF MARINE POLLUTION:**				
	- Co-operation with MEPC on the proper management of vessel generated wastes	XX	XXX	XXX	2007
	- Sewage treatment/sludge disposal	X	X	X	ON-GOING
	- Industrial process and waste management	X	X	X	ON-GOING
7	**CO_2 SEQUESTRATION IN GEOLOGICAL STRUCTURES**	XXX	XXX	XXX	ON-GOING
8	**SCIENCE/TECHNICAL SESSION: ISSUE FOCUSED DAY**	XXX	XXX	XXX	

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ANNEX 10

LIST OF SUBSTANTIVE ITEMS AGREED FOR INCLUSION IN THE AGENDA FOR THE 27th CONSULTATIVE MEETING

(Agenda item 12)

1 Consideration of the report of the Scientific Group

- Waste assessment guidance
- Pre-screening criteria
- Guidance for the development of Action Lists and Action Levels
- Spoilt cargo management and vessel wastes
- CO_2 sequestration
- Monitoring and assessment
- Outreach activities

2 Compliance issues

- Compliance reporting
- Strategies for compliance

3 Preparation for the entry into force of the 1996 Protocol

- Compliance procedures and mechanisms
- Procedures and criteria for emergency situations
- Co-operation with regional agreements
- Technical, administrative and legal assistance

4 Technical co-operation and assistance

- Long-term Strategy and the implementation thereof
- Workshop proposals

5 Matters related to the management of radioactive wastes

- Resolution LC.51(16)
- Guidance on the protection of the environment from the effects of ionizing radiation

6 Interpretation of the London Convention 1972

- Industrial waste
- Placement of matter for a purpose other than the mere disposal thereof
- Normal operations of vessels (co-operation with MEPC)

7 CO_2 sequestration

- Consistency with the London Convention/Protocol
- Initial assessment of environmental risks/benefits
- Relation to work carried out in other fora

8 Outreach to prospective new Contracting Parties

- New communication materials
- Reports from Contracting Parties and the Bureau

9 Relations with other organizations in the field of marine environmental protection

- UNEP, IOI, IOC, ECPP, FAO

10 Review and up-date of the Long-term Programme for the period 2005 to 2007

- Progress review and up-date, i.e. tailoring of goals and products

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