

Headquarters
P.O. Box 3000
Johnstown Castle Estate
County Wexford
Ireland

DUMPING AT SEA PERMIT

Permit Register Number:	S0004-01
Permit holder:	Dublin Port Company, Dublin Port Offices, Alexandra Road, Dublin Port, Dublin 1.
Location of loading:	Dublin Port
Location of dumping:	Burford Bank, Outer Dublin Bay.

DUMPING AT SEA ACTS 1996 TO 2010

DUMPING AT SEA PERMIT

Decision of the Agency, under Section 5(1) of the
Dumping at Sea Acts 1996 to 2010.

Reference number: S0004-01

The Agency in exercise of the powers conferred on it by the Dumping at Sea Acts 1996 to 2010, for the reasons hereinafter set out, hereby grants this dumping at sea permit to Dublin Port Company, in respect of Dublin Port, subject to conditions, as set out in the schedule attached hereto.

The permit authorises the loading and dumping at sea of dredged material from Dublin Port subject to conditions.

A copy of the Decision is attached.

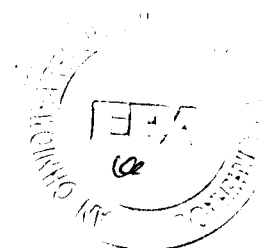
***Loading and dumping at sea of a substance or material, in accordance with the Dumping
at Sea Acts 1996 to 2010***

GIVEN under the Seal of the Agency this 28th day of July 2011.

**PRESENT when the seal of the Agency
was affixed hereto:**



Dr. Karen Creed, Authorised Person



INTRODUCTION

This introduction is not part of the permit and does not purport to be a legal interpretation of the permit.

This permit is for the loading of dredged material from Dublin Port and the dumping of the material at the Burford Bank in outer Dublin Bay. The proposed Burford Bank site has been used by Dublin Port and other permit holders since 1996. Dublin Port was last granted a Dumping at Sea Permit in 2007 which permitted for the first time the dumping of material by level bottom capping (LBC) as a means of mitigating the release of contaminated dredged sediment into the marine environment. This disposal strategy was developed in line with international best practice guidance on the management of contaminated marine sediments.

Under this permit, a maximum of 4,000,000 tonnes of dredged material shall be loaded and dumped at sea over a six year period. The permit holder is required to manage the permitted activities to ensure the protection of the marine environment. Sediment from contaminated areas shall be dumped at slack water and then capped with clean sediment dredged from uncontaminated areas. The permit includes mitigation measures to minimise the release of contaminated sediment into the surrounding waters and monitoring requirements to evaluate the impact of the works and the stability of the cap. There are provisions for remedial action in the event of a non-compliance with any conditions of the permit. The permit holder is required to submit reports on the loading and dumping activities and monitoring results to the Agency.

The permit sets out in detail the conditions under which Dublin Port Company will carry out loading and dumping at sea.

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Glossary of Terms

All terms in this permit should be interpreted in accordance with the definitions in the Dumping at Sea Acts 1996 to 2010, unless otherwise defined in the section.

AER	Annual Environmental Report.
Agreement	Agreement in writing.
Annually	All or part of a period of twelve consecutive months.
Application	The application by the permit holder for this permit.
Attachment	Any reference to Attachments in this permit refers to attachments submitted as part of this permit application.
BIM	Bord Iascaigh Mhara
Capping	Is the term used to describe the covering of dredged material deposited at a dumping site with a layer of clean coarse sediment, usually sand. Its objective is to isolate the dredged material from the water column.
CEN	Comité Européen De Normalisation – European Committee for Standardisation.
Chart	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this permit.
Competent laboratory	A testing facility meeting the general management and technical requirements of EN ISO/IEC-17025 standard, or other equivalent standards accepted at international level and utilising methods of analysis, including laboratory, field, and on-line methods, which are validated and documented in accordance with the above standard(s) for the specific tests.
Day	Any 24 hour period.
Documentation	Any report, record, results, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this permit.
Dumping	(a) any deliberate disposal in the maritime area (including side-cast dredging, plough dredging, water injection dredging and other such dredging techniques) of a substance or material from or in conjunction with a vessel or aircraft or offshore installation, (b) any deliberate disposal in the maritime area of vessels, aircraft or offshore installations.

Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this permit.
Environmental damage	As defined in Directive 2004/35/EC.
EPA	Environmental Protection Agency.
Exclusive economic zone	The outer limit of the exclusive economic zone is the line every point of which lies at a distance of 200 nautical miles from the nearest point of the baseline.
Harbour Authority	As defined in Section 1 of the Dumping at Sea Acts 1996 to 2010.
IFI	Inland Fisheries Ireland
Incident	The following shall constitute as incident for the purposes of this permit: <ul style="list-style-type: none">(i) an emergency;(ii) any loading or dumping at sea activity which does not comply with the requirements of this permit;(iii) any indication that environmental pollution has, or may have, taken place;(v) a complaint of an environmental nature.
Inland waters	All sea areas which lie on the landward side of the baseline of the territorial seas.
Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to perform its function adequately.
Master	The person having the command or charge of the vessel.
Noise-sensitive location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic.
Permit Holder	Dublin Port Company, Dublin Port Offices, Alexandra Road, Dublin Port, Dublin 1.
Sample(s)	Unless the context of this permit indicates to the contrary, the term sample(s) shall include measurements taken by electronic instruments.
SFPA	Sea Fisheries Protection Agency
Slack Water	The state of a tidal current when its speed is near zero, especially the moment when a reversing current changes direction and its speed is zero. The term also is applied to the entire period of low speed near the time of turning of the current when it is too weak to be of any practical importance in navigation. The relation of the time of slack water to the tidal phases varies in different localities.

Standard Method	A National, European or internationally recognised procedure (e.g., I.S. EN, ISO, CEN, BS or equivalent); or an in-house documented procedure based on the above references; a procedure as detailed in the current edition of "Standard Methods for the Examination of Water and Wastewater" (prepared and published jointly by A.P.H.A., A.W.W.A. & W.E.F.), American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA; or an alternative method as may be agreed by the Agency.
The Agency	Environmental Protection Agency.
The Maritime Area	Comprises <ol style="list-style-type: none">(i) the inland waters and territorial seas of the State, and the seabed and subsoil beneath them,(ii) any area for the time being standing designated by order under section 2 of the Continental Shelf Act 1968 for the purposes of that Act, and the waters above it, and(iii) the exclusive economic zone of the State.
Triennially	Once every three years.

Decision & Reasons for the Decision

The Environmental Protection Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this permit, the loading and dumping activities will comply with and will not contravene any of the requirements of Section 5 of the Dumping at Sea Acts 1996 to 2010.

In reaching this decision the Environmental Protection Agency has considered the application and supporting documentation received from the applicant, all submissions received from other parties and the report of its inspector.

Part I Schedule of Activities Permitted

In pursuance of the powers conferred on it by the Dumping at Sea Acts 1996 to 2010, the Environmental Protection Agency (the Agency), under Section 5 of the said Acts, grants this Dumping at Sea Permit to Dublin Port Company, Dublin Port Offices, Alexandra Road, Dublin Port, Dublin 1. The permit authorises the loading and dumping at sea activities described below, subject to conditions listed in Part II, with the reasons therefor and the associated schedules attached thereto.

Part II Conditions

Condition 1. Scope

- 1.1 Statutory Obligations
 - 1.1.1 This permit is for the purposes of loading and dumping at sea under the Dumping at Sea Acts 1996 to 2010, only and nothing in this permit shall be construed as negating the permit holder's statutory obligations or requirements under any other enactments or regulations.
 - 1.1.2 This permit may be technically amended, as and when considered necessary by the Agency.
- 1.2 The material or substance to which this permit relates shall be dredged material loaded from that part of the sea specified in *Schedule A: Limitations* of this permit.
- 1.3 For the purposes of this permit, the location of the loading authorised by this permit is in that part of the sea specified in *Schedule A: Limitations* of this permit. The permitted loading activity shall be carried on only within the areas outlined.
- 1.4 For the purposes of this permit, the location of the dumping site authorised by this permit is in that part of the sea specified in *Schedule A: Limitations* of this permit. Any reference in this permit to "dumping site" shall mean the area thus outlined. The permitted dumping activity shall be carried out only within the area outlined.
- 1.5 Loading and dumping at sea shall be limited as set out in *Schedule A: Limitations* of this permit.
- 1.6 Loading and dumping at sea shall be controlled and operated as set out in this permit. All programmes required to be carried out under the terms of this permit become part of this permit.
- 1.7 No change to the loading and dumping activities authorised by this permit shall be carried out or commenced without the written agreement of the Agency.

Reason: To clarify the scope of this permit.

Condition 2. Management of the Loading and Dumping at Sea Activities

- 2.1 The permit holder shall adopt all reasonably practicable measures to minimise the noise impact of the permitted activities. Noise from the permitted activities shall not cause a nuisance at any NSLs.
- 2.2 The permit holder shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience as required and shall be aware of the requirements of this permit.
- 2.3 The permit holder shall ensure that a nominated, suitably qualified and experienced person is present at all times when activities covered by this permit are ongoing.
- 2.4 The permit holder shall notify the Agency at least two weeks prior to the commencement of the loading and dumping activities.
- 2.5 Documentation

The permit holder shall issue a copy of this permit to all relevant personnel whose duties relate to any condition of this permit.
- 2.6 Corrective Action

The permit holder shall initiate an investigation and corrective action in the event of a reported non-conformity with this permit to the satisfaction of the Agency.

2.7 Communications Programme

The permit holder shall, within one month of the date of grant of this permit, establish and maintain a Public Awareness and Communication Programme to ensure members of the public can obtain information at reasonable times.

Reason: *To make provision for management of the loading and dumping at sea activities on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the marine environment.*

Condition 3. Loading and Dumping at Sea Activities

- 3.1 Loading and dumping activities must be completed within **six years** of the date of commencement of activities.
- 3.2 Loading shall be carried out by trailing suction hopper dredger.
- 3.3 The permit holder shall take all reasonably practicable measures during loading to limit the release of suspended solids into the water column.
- 3.4 During each campaign, loading and dumping shall be conducted in sequence commencing with the material from the North Quay Extension (B006) and River Area A (B007), followed by the Alexandra Basin East (B008), Oil Berths (B009), South Quays (B012), Ferryport (B010) and River Area B (B011).
- 3.5 Material from the North Quay Extension (B006) shall be loaded on an incoming tide.
- 3.6 Dumping shall be effected by release through the hull of the vessel.
- 3.7 Dumping of material from the North Quay Extension (B006) and River Area A (B007) shall be carried within 30 minutes either side of slack water.
- 3.8 Material from the North Quay Extension (B006) and River Area A (B007) shall be dumped in a line formation no greater than 100 m long with dumping commencing at the south end of the dumping site.
- 3.9 During each campaign, material dumped in accordance with Condition 3.8 shall be capped without undue delay with a capping layer of clean coarse material from River Area B (B011). A sufficient quantity of material from River Area B (B011) shall be dumped to provide and maintain, at a minimum, an cap thickness of 0.5 m over a 150 m × 250 m area.
- 3.10 Information relating to the activity shall be automatically recorded during each dumping voyage and shall as a minimum contain details of the following:
 - (i) The name of the vessel;
 - (ii) The source of the substance or material (latitude and longitude coordinates in degrees and decimal minutes);
 - (iii) The date, time, location and position (latitude and longitude coordinates in degrees and decimal minutes) at which the voyage for the purposes of dumping began;
 - (iv) The date, time and position (latitude and longitude coordinates in degrees and decimal minutes) at which dumping began;
 - (v) The date, time and position (latitude and longitude coordinates in degrees and decimal minutes) at which dumping ended;
 - (vi) The quantity, stated in metric tonnes, of the substance or material dumped;
 - (vii) The date, time and position (latitude and longitude coordinates in degrees and decimal minutes) at which the vessel completed the voyage for the purpose of dumping;
 - (viii) Logged vessel track record data (latitude and longitude coordinates in degrees and decimal minutes).

- 3.11 Prior to the commencement of the permitted activity, the permit holder shall consult with the Marine Survey Office of the Department of Transport to ensure that all vessels used in connection with the loading and dumping activities specified in this permit meet the requirements of the Marine Survey Office. The permit holder shall ensure that the vessels used in connection with this permit are fully certified for the entire period of loading and dumping activities specified in this permit.
- 3.12 The permit holder shall permit authorised officers to be on board the vessel. The permit holder shall permit and facilitate the carrying out by the authorised officer of his functions under the Dumping at Sea Acts 1996 to 2010, and shall comply with the provisions of those Acts in relation to the authorised officer and those functions.

Reason: *To provide for appropriate controls on loading and dumping at sea activities to ensure the protection of the marine environment.*

Condition 4. Control and Monitoring

- 4.1 The permit holder shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out below and in accordance with *Schedule B: Monitoring* of this permit.
- 4.1.1 Analyses and measurements shall be undertaken by competent staff in accordance with documented operating procedures.
- 4.1.2 Analysis for compliance purposes, including any sub-contracted analysis, shall be done by a competent laboratory.
- 4.2 The permit holder shall ensure that:
- (i) sampling and analysis for all parameters listed in the Schedules of this permit; and
 - (ii) any reference measurements for the calibration of automated measurement systems; shall be carried out by an appropriate Standard Method.
- 4.3 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this permit, may be amended with the agreement of the Agency following evaluation of test results.

Reason: *To provide for the protection of the marine environment by way of monitoring of the impacts associated with the loading and dumping at sea activities.*

Condition 5. Incident Prevention and Emergency Response

- 5.1 Incidents
- In the event of an incident the permit holder shall immediately:
- (i) identify the date, time and place of the incident;
 - (ii) as soon as practicable notify the Agency, in a format prescribed, and other relevant authorities;
 - (iii) carry out an investigation to identify the nature, source and cause of the incident and any impact arising therefrom;
 - (iv) isolate the source of any such impact;
 - (v) evaluate the environmental pollution, if any, caused by the incident;
 - (vi) identify and execute measures to minimise the impact and the effects thereof.

- 5.2 The permit holder shall provide a report of the investigation into the incident to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency. The report shall include a proposal to:
- (i) identify and put in place measures to avoid recurrence of the incident; and
 - (ii) identify and put in place any other appropriate remedial actions.

Reason: *To provide for the protection of the marine environment.*

Condition 6. Aftercare Management

- 6.1 Aftercare Management Plan
- 6.1.1 The permit holder shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for the aftercare management of the dumping site. This plan shall be submitted to the Agency for agreement within twelve months of the date of grant of the permit.
 - 6.1.2 The plan shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the agreement of the Agency.
 - 6.1.3 The permit holder shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment and Financial Provision when implementing Condition 6.1.1 above.
 - 6.1.4 The permit holder shall carry out such tests and investigations, as requested by the Agency, to confirm that there is no continuing risk to the environment.

Reason: *To make provision for the proper aftercare management of the dumping site ensuring protection of the environment.*

Condition 7. Notification, Records and Reports

- 7.1 The permit holder shall notify the Agency by both telephone and either email or webform, to the Agency's headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any incident (as defined in this permit). The permit holder shall include as part of the notification, the date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any impacts.
- 7.2 In the case of any incident relating to any impact on water, the permit holder shall notify the Marine Institute, Sea Fisheries Protection Authority, Inland Fisheries Ireland, Bord Iascaigh Mhara and any other relevant authorities as soon as practicable after such an incident.
- 7.3 In the case of any incident relating to archaeology, marine mammals or migratory fish, the permit holder shall notify the National Parks and Wildlife Service, Marine Institute, Sea Fisheries Protection Authority and Inland Fisheries Ireland and any other relevant authorities as soon as practicable after such an incident.
- 7.4 The permit holder shall make a record of any incident. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident. The record shall include all corrective actions taken to manage the incident, and the effect on the marine environment, and avoid recurrence. The permit holder shall, as soon as practicable following incident notification, submit to the Agency the incident record.
- 7.5 The permit holder shall record all complaints related to the loading and dumping activities. Each such record shall give details of the date and time of the complaint, the name of the complainant (if provided), and give details of the nature of the complaint. A record shall be kept of the response made and any corrective action undertaken in the case of each complaint. This record shall be made available to the Agency upon request.

- 7.6 The permit holder shall as a minimum keep the following documents:
- (i) the permit(s) relating to the dumping site;
 - (ii) the previous years' AERs for the dumping site;
 - (iii) records of all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this permit and any previous permits dating back at least three years;
 - (iv) all correspondence with the Agency;
 - (v) complaints register;
 - (vi) up to date drawings/plans showing the location of the loading areas and dumping site authorised by this permit.
- This documentation shall be available to the Agency for inspection at all reasonable times and shall be submitted to the Agency, as required, in such a format as may be requested, including electronic submittal of the information or a summary of such information.
- 7.7 The permit holder shall submit electronically to the Agency, by the 31st March of each year, an AER covering the previous calendar year. This report shall include as a minimum the information specified in *Schedule C: Annual Environmental Report* of this permit and shall be prepared in accordance with any relevant guidelines issued by the Agency or as otherwise prescribed by the Agency.
- 7.8 A full record, which shall be open to inspection by authorised officer of the Agency at all times, shall be kept by the permit holder on matters relating to each load of the substance or material intended to be dumped, and put on board the vessel. This record shall be maintained continually and shall as a minimum contain those details specified in Condition 3.10 of this permit. This information shall be submitted as required by and as may be prescribed by the Agency as part of the annual environmental report and immediately on request by an authorised officer.
- 7.9 All reports shall be certified accurate and representative by the permit holder, manager or a nominated, suitably qualified and experienced deputy.
- 7.10 The permit holder shall notify the Agency in writing upon completion of the loading and dumping activities to which this permit relates.

Reason: <i>To provide for the collection and reporting of adequate information on the loading and dumping at sea activity.</i>

Condition 8. Financial Charges and Provisions

- 8.1 Agency Charges
- 8.1.1 The permit holder shall pay to the Agency a contribution or such sum, as the Agency from time to time determines having regard to variations in the extent of reporting, auditing, inspections, sampling and analysis or other functions carried out by the Agency, towards the cost of monitoring the discharges as the Agency considers necessary for the performance of its functions under the Dumping at Sea Acts 1996 to 2010.
 - 8.1.2 The cost of any other tests, sampling, analysis and monitoring which the Agency may require in relation to the loading and dumping of the substance or material the subject of this permit shall be borne by the permit holder. Furthermore, the cost of any tests, sampling, analysis and monitoring surveys carried out by an authorised officer or by or on behalf of the Agency in relation to the sampling of a substance or material the subject of this permit shall also be borne by the holder of the permit.
- 8.2 The Permit Holder shall indemnify the Agency and its authorised officers against all cost occurred by him as a result of a breach of any of the conditions of this permit.

8.3 Environmental Liabilities

- 8.3.1 The permit holder shall as part of the AER, provide an annual statement as to the measures taken or adopted at the loading areas and the dumping site in relation to the prevention of environmental damage, and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events or accidents/incidents, as may be associated with loading and dumping at sea.
- 8.3.2 The permit holder shall arrange for the completion, by an independent and appropriate qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) to address the liabilities from loading and dumping at sea. A report on this assessment, to the satisfaction of the Agency, shall be submitted as part of the second AER (required under Condition 7.7). The ELRA shall be reviewed as necessary to reflect any significant change to the volume or character of the material/substance to be loaded and dumped at sea, and in any case every three years following initial agreement. The results of the review shall be notified as part of the AER.
- 8.3.3 As part of the measures identified in Condition 8.3.1, the permit holder shall, to the satisfaction of the Agency, make financial provision to cover any liabilities identified in Condition 8.3.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least triennially. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 8.3.1.
- 8.3.4 The permit holder shall have regard to the most recent Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Conditions 8.3.2 and 8.3.3 above.

<p>Reason: <i>To provide for adequate financing for monitoring and financial provisions for measures to protect the marine environment.</i></p>
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SCHEDULE A: Limitations**A.1 Dumping at Sea of Dredged Material**

Maximum quantity (tonnes)
4,000,000

**A.2 Location of Loading Areas****North Quay Extension (B006)**

	Longitude	Latitude
(i)	53°20.79' N	06°13.63' W
(ii)	53°20.78' N	06°13.63' W
(iii)	53°20.74' N	06°12.98' W
(iv)	53°20.73' N	06°12.98' W

River Area A (B007)

	Longitude	Latitude
(i)	53°20.78' N	06°13.63' W
(ii)	53°20.75' N	06°13.64' W
(iii)	53°20.72' N	06°13.22' W
(iv)	53°20.70' N	06°13.09' W
(v)	53°20.64' N	06°12.85' W
(vi)	53°20.72' N	06°12.75' W

Alexandra Basin East (B008)

	Longitude	Latitude
(i)	53°20.72' N	06°12.75' W
(ii)	53°20.69' N	06°12.45' W
(iii)	53°20.82' N	06°12.43' W
(iv)	53°20.83' N	06°12.74' W
(v)	53°20.72' N	06°12.62' W
(vi)	53°20.73' N	06°12.74' W

Oil Berths (B009)

	Longitude	Latitude
(i)	53°20.69' N	06°12.45' W
(ii)	53°20.82' N	06°12.43' W
(iii)	53°20.85' N	06°12.39' W
(iv)	53°20.84' N	06°12.25' W
(v)	53°20.80' N	06°12.23' W
(vi)	53°20.69' N	06°12.24' W
(vii)	53°20.68' N	06°12.18' W

Ferryport (B010)

	Longitude	Latitude
(i)	53°20.68' N	06°12.18' W
(ii)	53°20.70' N	06°12.19' W
(iii)	53°20.71' N	06°12.02' W
(iv)	53°20.88' N	06°12.00' W
(v)	53°20.89' N	06°11.92' W
(vi)	53°20.80' N	06°11.87' W
(vii)	53°20.69' N	06°11.88' W
(viii)	53°20.71' N	06°11.57' W
(ix)	53°20.67' N	06°11.40' W
(x)	53°20.70' N	06°11.45' W
(xi)	53°20.75' N	06°11.49' W
(xii)	53°20.86' N	06°11.49' W
(xiii)	53°20.88' N	06°11.58' W

River Area B (B011)

	Longitude	Latitude
(i)	53°20.65' N	06°09.00' W
(ii)	53°20.57' N	06°09.05' W
(iii)	53°20.72' N	06°12.75' W
(iv)	53°20.64' N	06°12.85' W

South Quays (B012)

	Longitude	Latitude
(i)	53°20.64' N	06°12.89' W
(ii)	53°20.63' N	06°12.90' W
(iii)	53°20.55' N	06°11.87' W
(iv)	53°20.54' N	06°11.87' W

A.3 Location of Dumping Site

	Longitude	Latitude
(i)	53°20.07' N	06°03.00' W
(ii)	53°20.07' N	06°01.82' W
(iii)	53°19.17' N	06°01.82' W
(iv)	53°19.17' N	06°02.71' W
(v)	53°19.38' N	06°03.00' W

SCHEDULE B: Monitoring**B.1 Monitoring at Loading Areas** ^{Note 1}

Parameters	Frequency	Monitoring Locations	Analysis Method/Technique
Granulometry ^{Note 2} Organic carbon Zinc Nickel Copper Lead Arsenic Cadmium Lithium Aluminium Chromium Mercury Dibutyl tin Tributyl tin Polychlorinated biphenyls ^{Note 3} Polyaromatic hydrocarbons ^{Note 4}	<ul style="list-style-type: none"> • 2012 • 2015 	8 grab samples of surface sediments taken from the following locations specified in Drawing No. 32-1010-05/D1 in Appendix D of the permit application: SL1, SL4, SL5, SL7, SL9, SL11, SL15, SL17.	Standard method ^{Note 5}

Note 1: The frequency, methods and scope of monitoring, sampling and analyses may be amended in accordance with Condition 4.3.

Note 2: Monitoring of granulometry shall include but not be limited to the following fractions: >2 mm, <2 mm, >63 µm and <63 µm.

Note 3: ICES 7 polychlorinated biphenyls: PCB 28, 52, 101, 138, 153, 180, 118.

Note 4: Polyaromatic hydrocarbons: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Dibenzo(ah)anthracene, Benzo(ghi)perylene, Indeno(123-cd)pyrene.

Note 5: Sampling and analyses shall be conducted in accordance with the analytical and quality requirements set out in: *M. Cronin et al. 2006. Guidelines for the Assessment of Dredge Material for Disposal in Irish Waters. Marine Environment & Health Series, No. 24. Marine Institute.*



B.2 Monitoring at Dumping Site ^{Note 1}

Parameters	Frequency	Monitoring Locations	Analysis Method/Technique
Bathymetry	<ul style="list-style-type: none"> • Within 10 days after completion of each campaign • 1 month after completion of each campaign • Annually following the final campaign 	Survey to cover the area referred to in Condition 3.9 plus 100 m on all sides. An additional 100 m shall be surveyed in the direction of the residual flow.	Bathymetric survey: <ul style="list-style-type: none"> - Survey lines to run perpendicular to direction of the residual flow - Vertical resolution ≥ 20 cm - Horizontal control by DGPS or RTK - Line interval at 25 m - survey information shall be submitted in hardcopy and AutoCAD format as: (i) soundings chart plotted to chart datum, (ii) contoured chart at 200 mm intervals plotted to chart datum, (iii) xyz digital file.
Granulometry ^{Note 2} Organic carbon Zinc Nickel Copper Lead Arsenic Cadmium Lithium Aluminium Chromium Mercury Dibutyl tin Tributyl tin Polychlorinated biphenyls ^{Note 3} Polyaromatic hydrocarbons ^{Note 4}	<ul style="list-style-type: none"> • 1 month after completion of each campaign • Annually following the final campaign 	3 representative samples to be taken at the middle, northern end and southern end of the area referred to in Condition 3.9.	Standard method ^{Note 5}

Note 1: The frequency, methods and scope of monitoring, sampling and analyses may be amended in accordance with Condition 4.3.

Note 2: Monitoring of granulometry shall include but not be limited to the following fractions: >2 mm, <2 mm, >63 μ m and <63 μ m.

Note 3: ICES 7 polychlorinated biphenyls: PCB 28, 52, 101, 138, 153, 180, 118.

Note 4: Polyaromatic hydrocarbons: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Dibenzo(ah)anthracene, Benzo(ghi)perylene, Indeno(123-cd)pyrene.

Note 5: Sampling and analyses shall be conducted in accordance with the analytical and quality requirements set out in: *M. Cronin et al. 2006. Guidelines for the Assessment of Dredge Material for Disposal in Irish Waters. Marine Environment & Health Series, No. 24. Marine Institute.*

SCHEDULE C: Annual Environmental Report

Annual Environmental Report Content ^{Note 1}
<p>Register/log of loading and dumping at sea activities.</p> <p>OSPAR dumping report.</p> <p>Marine positional log (latitude and longitude coordinates given in degrees and decimal minutes).</p> <p>Reported incidents summary.</p> <p>Complaints summary.</p> <p>Monitoring Summary.</p> <p>Statement of measures in relation to prevention of environmental damage and remedial actions (Environmental Liabilities).</p> <p>Environmental Liabilities Risk Assessment Review (every three years or more frequently as dictated by relevant on-site change including financial provisions).</p> <p>Any other items specified by the Agency.</p>

Note 1: Content may be revised subject to the agreement of the Agency.

Sealed by the seal of the Agency on this the 28th day of July 2011.

PRESENT when the seal of the Agency
Was affixed hereto:



Dr. Karen Creed, Authorised Person

