

INSPECTOR'S REPORT
WASTE LICENCE REGISTER NUMBER W052

(1) Summary:

Name of Applicant	Drogheda Port Company
Facility Name(s)	Stagrennan Polder
Facility Address	Stagrennan Polder, Stagrennan, Drogheda, Co Louth
Description of Principal Activity	The temporary storage of dredged sands and gravels extracted from the deepening of River Boyne under the Capital Dredging Scheme
Quantity of waste (tpa)	1,120,000 tonnes (total)
Environmental Impact Statement (EIS) Required	Yes
Number of Submissions Received	1
INSPECTOR'S RECOMMENDATION	The proposed decision as submitted to the Board be approved

Notices	Issue Date(s)	Reminder(s)	Response Date(s)
Article 14 (2) (b) (i)			
Article 14 (2) (b) (ii)	6 August 1998 21 August 1998		13 August 1998 25 August 1998
Article 14 (2) (a)	27 August 1998		
Article 16	1 September 1998		6 October 1998

Applicant Address	Drogheda Port Company, Maritime House, The Mall, Drogheda
Planning Permission Status and Date Granted (if appropriate)	Foreshore Licence (granted 21 May 1998)
Planning Authority	Not applicable
For Local Authority applicants, is the facility within its own functional area	Not applicable
Is the facility an existing facility	No
Prescribed date for application	20 May 1998
Date Application received	23 July 1998
For Certified Sites, Have Matters in the EIS relating to environmental pollution been considered as required by Article 21 of SI 133 of 1997	Not applicable
Location of Certificate in Application	Not applicable
Confidential Information Submitted	No
Location of Planning Documents in Application	Not applicable
Location of EIS in Application	Included as separate volumes which accompanied the application

FACILITY VISITS:

DATE	PURPOSE	PERSONNEL	OBSERVATIONS
26/5/98	Pre-application visit	Duncan Laurence	
18/8/98	Check Site Notice/site visit	Duncan Laurence	Site notice in compliance with SI 133 of 1997

(2) Class/Classes of Activity

The class(es) of activities for which the applicant has applied are marked (X) below. The principal activity is indicated by (P).

Waste Management Act, 1996				
THIRD SCHEDULE Waste Disposal Activities		FOURTH SCHEDULE Waste Recovery Activities		
1.	Deposit on, in or under land (including landfill).	1.	Solvent reclamation or regeneration.	
2.	Land treatment, including biodegradation of liquid or sludge discards in soils.	2.	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).	
3.	Deep injection of the soil, including injection of pumpable discards into wells, salt domes or naturally occurring repositories.	3.	Recycling or reclamation of metals and metal compounds.	
4.	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.	4.	Recycling or reclamation of other inorganic materials.	X
5.	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.	5.	Regeneration of acids or bases.	
6.	Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule.	6.	Recovery of components used for pollution abatement.	
7.	Physico-chemical treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule (including evaporation, drying and calcination).	7.	Recovery of components from catalysts.	
8.	Incineration on land or at sea.	8.	Oil re-refining or other re-uses of oil.	
9.	Permanent storage, including emplacement of containers in a mine.	9.	Use of any waste principally as a fuel or other means to generate energy.	
10.	Release of waste into a water body (including a seabed insertion).	10.	The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system,	
11.	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.	11.	Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.	
12.	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.	12.	Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.	
13.	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.	13.	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.	P

Class Description:

The descriptions provided by the applicant for these activities are set out below:

Third Schedule

Not applicable

Fourth Schedule

13 Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced

This involves the storage for a period of between three to five years of sands and gravels obtained from the River Boyne as part of the Capital Dredging Scheme. The applicant proposes that all the deposited materials will be removed and the Stagrennan Polder - which is flooded at high tide - restored to its former bathymetry within five years of the completion of the Capital Dredging Scheme.

4 Recycling or reclamation of other inorganic materials

The proposal involves the dewatering of the dredged material by way of one or more lagoons. Once appropriate commercial outlets for the materials have been identified, the dredged sands and gravels will be removed from the facility for commercial sale. The applicant considers that the material is suitable for use as aggregates in concrete production, for road embankments or as general fill.

(3) Facility Location

A location map showing the facility to which the application relates is provided in Appendix 1.

The facility, comprising an approximate rectangle of about 250m x 1000m, is located in the intertidal area to the south of the River Boyne, about 1.5 km east of Drogheda Town. It is situated immediately on the border between the areas of jurisdiction of Drogheda Corporation and Louth County Council but, due to it being located below the highwater mark, the development control aspects have been treated as being within the area of jurisdiction of the Department of the Marine.

The facility is part of the flood plain of the Boyne, being a remnant of a series of polders which, in the past, stretched up to Drogheda town itself. The polders upstream of the facility have all been subject to historic filling. The facility is delineated on the north side by a training wall, constructed in the last century, which defines the navigable channel of the river. The facility itself is principally composed of mud-flats, where, depending upon the tide, waters enter and leave via a weir at the western end of the training wall. The other boundaries of the facility are areas of recent filling activities to the west, a small strip of land parallel to the roadside verge of the Drogheda-Mornington road to the south and, to the east, an arm of the training wall and further inter-tidal mud flats, which separates the facility from Harbourville House itself.

There are three residential properties located within 200 metres of the facility on the south bank of the River Boyne, one of which - Harbourville House - appears to be used as bed and breakfast accommodation. However, the area's character is dominated by the industrial activities of Premier Periclase Ltd, situated on the north bank and opposite the proposed facility. In the direction of Drogheda town, the land use is mainly light industry, with an increasingly rural aspect to the south and east.

Whilst the River Boyne is an important salmonid watercourse, the intertidal stretch up to the bridges at Drogheda are not covered by the European Communities (Quality of Salmonid Waters) Regulations 1988. Hence the proposed facility is located outside the area covered by the River Boyne Water Quality Management Plan. The Stagrennan Polder is also located outside the Special Protection Area (as specified in the European Communities (Conservation of Wild Birds) Regulations 1985 (SI 291 of 1985) and subsidiary regulations) of the river mouth and estuary of the Boyne, as well as being excluded from the area designated as a proposed Natural Heritage Area, which covers the remainder of the estuary from the east of the facility to the Irish Sea.

(4) Waste Types and Quantities

Total quantities and types of wastes accepted by the facility are shown below.

YEAR	NON-HAZARDOUS WASTE (tpa)	HAZARDOUS WASTE (tpa)	TOTAL ANNUAL QUANTITY OF WASTE (tpa)
1999	1,120,000 tonnes	Not applicable	1,120,000 tonnes
2000	Not applicable	Not applicable	Not applicable

The total quantities of waste deposited at the facility and the amount to be deposited prior to closure are shown below.

	NON-HAZARDOUS WASTE (tonnes)	HAZARDOUS WASTE (tonnes)	TOTALS (tonnes)
Already deposited	Not applicable	Not applicable	Not applicable
To be deposited	1,120,000 tonnes	Not applicable	1,120,000 tonnes

The expected life of the facility and the expected maximum annual tonnage are indicated below.

Expected Life of Facility (years)	5 years
Maximum Annual Tonnage (tpa)	1,120,000 tonnes

(5) Facility Operation/Management

Where Schedules or Conditions are referred to hereafter they are those listed in the Proposed Decision.

- **Summary Description**

The operation of the polder is part of the Capital Dredging Scheme of the River Boyne. The Scheme involves the deepening of the River Boyne by approximately 1 metre between Tom Roe's Point (about 1 km downstream of the proposed facility) to the area where the Boyne meets deep water at the coast. A new docking facility is currently under construction at Tom Roe's Point, and this, in conjunction with the deepening of the channel, will allow considerably larger vessels to gain access to the port facilities on the Boyne. The entire Dredging Scheme, including the Polder itself, has been subject to an Environmental Impact Statement, and is subject to a Foreshore Licence issued by the Department of Marine in May 1998.

A waste licence has been deemed necessary on the principal grounds that the dredging materials from the Capital Dredging Scheme fall within the definition of "waste" under the Waste Management Act 1996 and that, since 20 May 1998, a waste licence is required for activities located on the foreshore (defined in the Waste Management (Licensing) Regulations (SI 133 of 1997) as land outside the area of jurisdiction of the local authority (see Schedule 1, Item 12 of SI 133 of 1997)). Section 40(6) of the Waste Management Act 1996 requires that any condition contained in a Foreshore Licence which pertains to environmental pollution prevention shall cease to have effect when a waste licence is granted. Hence this application, if granted, will over-ride matters of environmental pollution already contained in the Department of Marine's licence.

Whilst the licensee - Drogheda Port Company - retains overall control of the project, the dredging activity itself, along with the operation of the proposed facility, will be undertaken by an as yet to be appointed contractor. Kirk McClure Morton have been appointed as consulting engineers on the project.

- **Waste Handling**

It is proposed that dredgings are transported to the facility by pipeline. They are then deposited in one or more lagoons which are to be constructed at the facility. Improvements proposed to the weir on the westerly end of the training wall are, in conjunction with lagoon(s) built within the Polder itself, intended to entrap the deposited dredgings allowing settlement. The result will be a significant reduction in suspended solids in the supernatant liquid discharged over the weir. Conditions 4.13 and 7.3 (et seq), in conjunction with environmental monitoring under Condition 9.7 of the proposed decision, require that a control structure is to be built into the weir, which is then to be operated to ensure that liquid containing unacceptably high suspended solids is not discharged to the River Boyne.

The application makes clear that the deposit of the dredgings in the Polder is temporary. Commercial outlets are to be located for the deposited materials which are, by their nature, coarse and suitable for construction purposes. However, a commercial outlet has yet to be finalised for these materials and hence two options for removal are presented in the application: (a) removal by sea, using a temporary berth constructed at the facility or (b) road transportation. A sand and gravel washing facility may also feature as part of the removal process and is subject to control under the proposed decision (see Conditions 4.4, 4.13 and 8.4).

- **Waste Acceptance Procedures**

The only wastes to be accepted under Condition 5 of the proposed decision are dredgings from the Capital Dredgings Project, along with hardcore for the purposes of the construction of hardstandings and site roads. As part of the EIS, samples of the dredging materials were obtained at defined intervals from the River Boyne and were subject to analysis by Forbairt. This suggests confidence as to the type of dredgings (particularly in respect of their potential marketability) and also contamination levels. Whilst certain contamination was observed from samples taken in proximity to the Drogheda quays, no significant contamination appeared from samples taken further downstream. As it is now not proposed that dredging will extend to the quays, terminating instead about 1 km downstream of the proposed storage facility, this evidence would indicate that contaminated materials are unlikely to be deposited at the facility. Condition 5.4 of the proposed decision envisages that a scheme of testing of the sediments in the Polder be agreed with the Agency prior to the commencement of waste deposition.

- **Nuisance Control**

The nature of the materials to be deposited should ensure that no odour or vermin nuisance will occur at the facility. Limited noise impacts are inevitable (see noise section below)

- **Hours of Operation**

The application proposes tracked machinery in operation on the Polder between 8.00 am and 8.00 pm, albeit that the piped discharge of the dredgings may occur throughout the night. This restriction is set out in Condition 5.8 of the proposed decision. To further reduce impacts, that Condition also forbids the operation of

mobile plant within 400 metres of Harbourville house on weekday evenings, on Saturday afternoons and on Sundays.

(6) Facility Design

- **Development**

The existing boundaries of the facility delineate and substantially contain the maximum areas of waste deposition. Although works are proposed on the weir in the application, the exact mode of operation of the facility has been left to the dredging sub-contractor. As such a person has yet to be appointed, Condition 4.3 of the proposed decision requires this information to be submitted to the Agency for its agreement.

- **Infrastructure**

The training wall to the North, in conjunction with the area of mud between the facility and Harbourville House to the east, provide natural boundaries at these locations. However, a security fence is proposed to the south and west and this is subject to Condition 4 of the proposed decision. Site offices and other accommodation, access roads constructed of hardcore, fuel storage and the construction of lagoons are all envisaged by the application. However, the specifics of the infrastructure on site remain to be decided when the dredging sub-contractor is appointed. Hence Condition 4.13 envisages that that all these works will be agreed with the Agency prior to waste deposition.

- **Liner Details**

Given the nature of the wastes, the location of the Polder and conceptual basis of the design of the dewatering facility, it is not proposed to line the site.

- **Leachate Management**

This matter is dealt with under surface water - see below

- **Landfill Gas Management**

It is not envisaged that landfill gas will be generated at the facility.

- **Capping System**

No capping system is envisaged for the reason that the wastes are essentially inert by nature and will be removed at a later date.

(7) Decommissioning and Aftercare

The deposited wastes will be entirely removed from the facility in a period up to five years. The Polder is then to be returned to its natural state. This is a requirement of Condition 8.4 of the proposed decision. Condition 9.5 stipulates that a comprehensive site survey of levels be undertaken prior to waste deposition so that a base line bathymetry can be defined. Condition 8.3 requires a detailed restoration plan be submitted to the Agency for approval prior to the removal of deposited wastes.

(8) Emissions to Air

It is not expected that significant air emissions will occur from the facility. However dust monitoring is required by Condition 9.1 of the proposed decision, whilst Condition 7.1 sets emission limits.

(9) Emissions to Groundwater

The Polder is in direct hydraulic continuity with the Rover Boyne and the rest of the flood plain. Being inter-tidal, the aquatic environment is saline in nature. Given these circumstances and the composition of the materials being deposited, no emission to groundwater of environmental significance is expected.

(10) Noise Emissions

Noise impacts from all stages of the development are possible, although these are considered to be limited. This is partly a consequence of the industrial nature of the areas - particularly the presence of Premier Periclase - and also due to the fact that there are only three residences within 200 metres of the south bank of the Boyne. Condition 7.1 of the proposed decision sets day and night time noise limits of 55 and 45 dB(A), which the application has confirmed as being achievable. Noise impacts are also addressed by way of restrictions on hours of operation (see above). Finally, if the option for a gravel washing plant is decided upon, this may have additional noise impacts. Whilst certain noise impact information was provided in the application, Condition 4.4 of the proposed decision requires additional predictive work prior to the establishment of this plant and also acoustic screening if required.

(11) Emissions to Sewer

No emissions to sewer are envisaged from the facility

(12) Emissions to Surface Waters

It is proposed that the supernatant liquid from the settlement process be discharged over the weir situated on the north west end of the training wall. The weir is to be heightened and a flow control structure put in place. The latter - in conjunction with the regulation of the incoming dredgings - will prevent liquids with unacceptably high suspended solids levels being discharged to the River Boyne. Monitoring in both the lagoon in proximity to the discharge and in the Boyne itself will establish whether or not the discharge is acceptable. These elements are all required by, respectively, Conditions 4.3, 7.3 (et seq) and 9.6 and 9.8 of the proposed decision. The exact details of environmental monitoring will be agreed under condition 9.3. The application proposes two hour sampling - using a boat for the Boyne samples - initially. The proposed decision envisages that this is to be substantially reduced, on the agreement of the Agency, provided the results do not show adverse impacts.

(13) Ecology

The Polder is not within the area of proposed designation of a Natural Heritage Area of the Boyne estuary. It is also located outside the Special Protection Area of the estuary, being situated on an area designated for potential industrial use.

The facility will inevitably have a significant impact on the ecology of the Polder. It is a roosting and food source for a variety of bird species. The fauna and flora in the mud of the Polder will also be virtually destroyed by the operation. The discharge of supernatant liquid would, if contaminated with high levels of suspended solids, affect the presence of migratory fish in the River Boyne.

The application envisages that, although these impacts are locally serious, they are to be mitigated by two elements of the overall dredging project. Firstly, the deposit of dredgings is to be temporary, not extending past five years. Secondly, the area lost at the Polder is to be off-set by the reclamation of other areas of the estuary and the creation of additional wildlife habitats. A significant amount of the flood plain of the Boyne between the facility and the sea has been colonised by vigorously growing *Spartina* reed grass, originally introduced for land reclamation purposes. It is proposed to remove this grass and cause other areas of the flood plain to regenerate into a more "natural" and beneficial habitat. This matter is covered by the Foreshore Licence issued by the Department of the Marine.

Section 16 the EIS contains the results of detailed computer modelling of the expected extent of the plume of suspended solids from the proposed facility. Provided the suspended solids levels are kept within defined levels, it is demonstrated that the plume will be (a) limited in its extent, becoming rapidly diluted with the flows from the River Boyne itself and (b) that it follows the south bank of the Boyne closely. This theoretical work is required by Conditions 9.3 and 9.6 of the proposed decision to be substantiated by monitoring in the River Boyne. Sampling locations have been defined upstream and downstream of the discharge. Samples are then taken both across the channel at these locations and also at varying depths. Should suspended solids be found to be emitted above defined limits - as compared to background - Condition 7.3 of the proposed decision requires discharges from the weir to cease. Further limits set by that Condition in respect of the weir also prevent the actual discharge itself from passing above defined limits. These requirements will all serve to preclude damage to migratory fish who utilise the Boyne to gain access to breeding grounds in the upper catchments.

(14) Other Significant Environmental Impacts of the Development
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None

(15) Waste Management, Air Quality and Water Quality Plans

The Boyne Water Quality Management Plan does not extend to the area of the Boyne below the bridges at Drogheda.

(16) Submissions/Complaints

Appendix 2 contains a list of all submissions received relating to the application. The dates received and the details of the individual, department, group or organisation making the submission are provided.

An overview of all submissions received in relation to the waste licence application is provided. This includes a summary of all issues raised in the submissions and clearly shows how these issues are dealt with in the proposed decision.

Eastern Regional Fisheries Board - letter dated 22 September 1998

Opposed in principle to the entire Capital Dredgings Scheme for the River Boyne, due to its potential damage to fisheries and, in particular, mussel harvesting.

RESPONSE

The matter of the acceptability of the Capital Dredging Scheme as a whole was dealt with by the Department of the Marine, who granted a Foreshore Licence for the project. Mussel harvesting is only to occur much further downstream of the proposed facility. Due to this distance, and also the fact that the activities of the dredger will remove the river bed across the channel, the waste management activities on the Polder will have a minimal affect on these issues.

- *Appears to be a “lack of concern” about suspended solids in the waste licence application and their impact on the River Boyne. There may be plume right across the River, and the 50 mg/l level above background is too high, particularly as a suspended solids level of less than 25 mg/l is prescribed by EU Directive 78/659 and the European Community (Quality of Salmonid Waters Regulations) 1988 (SI 293 of 1988).*

RESPONSE

This matter was greatly clarified in the response to the Agency’s Article 16 notice. Condition 9 of the proposed decision requires monitoring across the entire channel of the Boyne be undertaken. It requires that, should suspended solids discharges from the facility exceed defined limits, discharges should cease and should not recommence until levels have been substantially reduced.

The EU Directive and national Regulations being referred to (a) pertain only to fresh waters and (b) refer to a yearly average of suspended solids being no more than 25 mg/l. Being an average, the legislation clearly embraces that suspended solids may exceed the level of 25 mg/l on occasions. It should also be noted that suspended solids in the Boyne are high on occasion anyway but do not appear to have a detrimental effect on migratory fishlife.

- *The Fisheries Board is anxious that stricter monitoring be carried out on the Boyne and wish this to be done by an independent source*

RESPONSE

A stricter monitoring regime than proposed in the original application is contained in Condition 9 of the proposed decision. This draws from proposals made in response to the Article 16 notice, but the decision gives the Agency control of such matters as monitoring frequencies etc and is, in fact, more stringent than the subsequent proposals from the applicant. Condition 9.13 requires that environmental monitoring be done by a source other than the licensee or the dredging sub-contractor.

- *Concerns raised about the risk of collapse of the lagoon walls. Bunding walls should be constructed “with regards to maximum impermeability” and that “certain building standards” should be imposed with regards to strength and stability*

RESPONSE

Condition 9.8 of the proposed decision requires the stability of the training walls to be monitored, whilst Condition 4.13 and Schedule F require additional contingency proposals to be included. Details of the construction of lagoon walls within the Polder are required to be forwarded to the Agency for its agreement under Condition 4.13. It is also understood that coarse dredging materials will be piled against the training wall in a manner which protects its structural integrity. Full particulars are to be agreed with the Agency under Condition 4.13.

Signed _____

Date:

Duncan Laurence (Dr),
Inspector I

APPENDIX 1

FIGURE 1. SITE LOCATION PLAN

FIGURE 2. SITE PLAN

APPENDIX 2

**FIGURE 2925.11/J9/01
SURFACE WATER MONITORING POINTS**

APPENDIX 3
SUBMISSIONS/COMPLAINTS