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County Wexford, Ireland

WASTE LICENCE

Waste Licence

Register Number: 12-1

Licensee: Cork Corporation

Location of Facility: South City Link Road, Cork

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Reasons for the Decision

The Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence any emissions from the activity will comply with and not contravene any of the requirements of Section 40(4) of the Waste Management Act, 1996.

In reaching this decision the Agency has considered the application and supporting documentation received from the applicant, all submissions and the objection received and the reports of its inspectors.

Part I: Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency), under Section 40(1) of the said Act hereby grants this Waste Licence to Cork Corporation, City Hall, Cork, to carry on the waste activities listed below at Kinsale Road Landfill, South City Link Road, Cork, subject to 11 No. conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

Licensed waste disposal activities, in accordance with the Third Schedule of the Waste Management Act, 1996

- Class 1:* Deposit on, in or under land (including landfill).
- Class 2:* Land treatment, including biodegradation of liquid or sludge discards in soils.
- Class 4:* Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
- Class 5:* Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
- Class 7:* Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) 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).
- Class 11:* Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 12:* Repackaging prior to submission to any activity referred to a preceding paragraph of in this Schedule.
- Class 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.

Licensed waste recovery activities, in accordance with the Fourth Schedule of the Waste Management Act, 1996

- Class 2:** Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):
- Class 3:** Recycling or reclamation of metals and metal compounds.
- Class 4:** Recycling or reclamation of other inorganic materials.
- Class 10:** The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.
- Class 11:** Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
- Class 12:** Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 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.

INTERPRETATION

Act	The Waste Management Act, 1996 (No. 10 of 1996).
Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Adequate lighting	20 lux measured at ground level.
Agreement	Agreement in writing.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
Application	The application by the licensee for this waste licence, including any other material submitted to the Agency in writing by the licensee between the date of the application and the date of grant of this licence.
BATNEEC	Best Available Technology Not Entailing Excessive Cost as defined in section 5 (2) of the Act.
Commercial waste	As defined in Section 5 (1) of the Act.
Condition	A condition of this licence. In any case where this licence refers to a numbered condition, the reference shall be taken to mean the condition and any sub-condition therein which the context of the reference requires that reference is made to
Containment boom	A boom which can contain spillages and prevent these from entering drains or watercourses.

Cover material	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials; or other cover material the use of which has been subject to a proposal made by the licensee for the Agency's agreement.
Daytime	0800 hrs to 2200 hrs.
Documentation	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence
Emission	As defined in Section 5 (1) of the Act.
Emission Limit Value	Those limits, including concentration limits and deposition levels established in Schedule G.
Environmental Pollution	As defined in Section 5 (1) of the Act.
European Waste Catalogue (EWC)	The EWC is a harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 94/3/EC and any subsequent amendment published in the Official Journal of the European Community.
Facility	That area or areas defined under Condition 1.2
Hazardous Waste	As defined in Section 4 (2) of the Act.
Household Waste	As defined in Section 5 (1) of the Act.
Industrial waste	As defined in Section 5 (1) of the Act.
Incident	Any reference to an incident in this licence means an incident as defined in Condition 3.1.
Landfill	As defined in Section 5 (1) of the Act.
Landfill Gas	Gases generated from the landfilled waste.
Leachate	Any liquid percolating through the deposited waste and emitted from or contained within a landfill as defined in Section 5 (1) of the Act.
LEL (Lower Explosive Limit)	The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.
Licence	A Waste Licence issued in accordance with the Act.
Licensee	Cork Corporation, City Hall, Cork.
List I/II Organics	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC
Liquid Waste	Any waste in liquid form and containing less than 20% dry matter

Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Mobile Plant	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works
Monthly	At least 12 times per year, at approximately monthly intervals.
Municipal Waste	Municipal waste as defined in Section 5 (1) of the Act.
Night-time	2200 hrs to 0800 hrs.
Non-hazardous waste	Non-Hazardous Waste is any waste which is not a hazardous waste as defined in the Act.
Quarterly	A period of three calendar months, the first period of which commences on the date of grant of this licence
PM₁₀	Particulate matter less than 10µm aerodynamic diameter
Recovery	As defined in Section 4 (4) of the Act.
Sanitary Authority	Cork County Council
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment.
Specified Emissions	Those emissions listed in Schedule G of this licence.
Specified Engineering Works	Those engineering works listed in Schedule E of this licence.
Trigger Level	A parameter value which when achieved or exceeded requires certain actions to be taken.
TSP	Total Suspended Particulates
Waste	As defined in Section 4(1) of the Act.
Waste disposal activity	Includes the activities referred to in Section 4 of the Act and listed in the Third Schedule thereto.
Waste recovery activity	Includes the activities referred to in Section 4 of the Act and listed in the Fourth Schedule thereto.
Working Day	7:30 to 19:00 Monday to Friday, 7:00 to 18:00 Saturday, 7:00 to 10:00 Sunday and Bank Holidays
Working Face	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.

Part II CONDITIONS

CONDITION 1 SCOPE

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Schedule A and required by the licence.
- 1.2. Within one month of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, a Site Plan, showing the facility boundary outlined in green, incorporating the area outlined in red on Dwg. No. LDF-LF1-97, Revision B (dated 16/9/1997) and the shaded areas indicating former landfill areas as shown in Dwg. No. 03.Rev A entitled "Areas of old landfilling Activity" received by the Agency on 28th October 1998. Any reference in this licence to "facility" shall mean the area thus outlined in green.
- 1.3. Every plan, programme or proposal submitted to the Agency for agreement pursuant to any condition of this licence shall include a proposed timescale for its implementation. The Agency may modify or alter any such plan, programme or proposal in so far as it considers such modification or alteration to be necessary. Every plan, programme or proposal shall be carried out within the timescale fixed by the Agency but shall not be undertaken without the agreement of the Agency.
- 1.4. This licence is for the purposes of waste licensing under the Waste Management Act 1996 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.5. Where the Agency considers that a non-compliance with the Conditions of this licence has occurred, it may serve a notice on the licensee specifying:
 - a) that only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice;
 - b) that the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice; and,
 - c) that the licensee shall carry out any other requirement specified in the notice.

When the notice has been complied with, the licensee shall provide written confirmation that the requirements of the notice have been carried out. No waste, other than that which is stipulated in the notice, shall be accepted at the facility until written confirmation is received from the Agency that the notice is withdrawn.

Reason: *To clarify the scope of this licence.*

CONDITION 2 MANAGEMENT OF THE ACTIVITY

2.1 Environmental Management System

2.1.1 The licensee shall within eighteen months from the date of grant of this licence, submit to the Agency for its agreement a proposal for a documented Environmental Management System (EMS) for the facility. Following the agreement of the Agency, the licensee shall establish and maintain such a system. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for agreement.

2.1.2 The EMS shall include as a minimum those elements specified in the Conditions 2.2 to 2.8 below:

2.2 Schedule of Environmental Objectives and Targets

2.2.1 The licensee shall, within twelve months from the date of grant of this licence, submit to the Agency for its agreement a Schedule of Objectives and Targets. The objectives should be specific and the targets measurable.

2.2.2 The Schedule shall address a five year period as a minimum and shall be reviewed and submitted annually to the Agency for its agreement.

2.3 Environmental Management Programme

2.3.1 The licensee shall, within twelve months from the date of grant of this licence, submit to the Agency for its agreement an Environmental Management Programme (EMP). The EMP shall include a time-scale for achieving the Schedule of Objectives and Targets and shall comply with any other guidance issued by the Agency.

2.3.2 The EMP shall include, as a minimum, the information specified in Schedule B: Content of the Environmental Management Programme. The EMP shall be reviewed and submitted to the Agency for its agreement annually.

2.4 Corrective Action

2.4.1 The licensee shall establish and maintain written Corrective Action Procedures to ensure that corrective action is taken should specified requirements to this licence not be fulfilled.

2.5 Awareness and Training

2.5.1 The licensee shall establish and maintain Awareness and Training Procedures for identifying training needs and for providing appropriate training, for personnel whose work is related to the licensed facility. Written records of training shall be maintained.

2.6 Management Structure

2.6.1 Within nine months from the date of grant of this licence, the licensee shall submit written details of the management structure of the facility for the agreement of the Agency. Any proposed changes in the management structure shall be submitted in writing to the Agency for its agreement. Written details of the management structure shall include the following information:

- a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence;
- b) a named contact person for communications with the Sanitary Authority;
- c) details of the responsibilities for each individual named under a) above;
- d) details of the relevant experience, competence and qualifications held by each of the persons nominated under a) above; and
- e) contingency arrangements for the absences of the named persons from the facility.

2.7 Communications

2.7.1 Within twelve months from the date of grant of this licence, the licensee shall submit for agreement to the Agency a Communications Programme to ensure that members of the public can obtain information concerning the environmental performance of the facility at all reasonable times.

2.8 Annual Environmental Report

2.8.1 The licensee shall submit to the Agency for its agreement, within twelve months from the date of grant of this licence, and within one month of the end of the year thereafter, an Annual Environmental Report (AER).

2.8.2 The AER shall include as a minimum the information specified in Schedule C: Content of Annual Environmental Report and shall be prepared in accordance with any relevant written guidance issued by the Agency.

2.9 The licensee shall employ a suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a suitably qualified and experienced deputy, shall be present at all times during the operation of the facility.

2.10 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and/or experience, as required and shall be aware of the requirements of this licence.

<p>Reason: To make provision for management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.</p>

CONDITION 3 NOTIFICATION AND RECORD KEEPING

3.1 The licensee shall make written records of the following incidents:

- a) any emission which results in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any relevant enactment;
- b) any emission which does not comply with the requirements of this licence;
- c) any trigger level specified in this licence or in the EMS which is attained or exceeded;

- d) where the Q-rating indicates a disimprovement in water quality since the last survey;
 - e) any malfunction of any environmental control system;
 - f) any indication that contamination has, or may have, taken place;
 - g) the cessation of waste activities at the construction and demolition facility for a period in excess of 28 days, and their recommencement;
 - h) the by-passing of the reed beds from the stormwater retention pond in storm events;
 - i) any occurrence with the potential for environmental pollution; and,
 - j) any emergency.
- 3.2 The written record shall include all aspects described in Condition 10.6.
- 3.3 Unless otherwise instructed in writing by the Agency, the licensee shall:
- a) notify the Agency by telephone, and by facsimile if available, as soon as practicable and in any case not later than 10.00 am the following working day after the occurrence of any incident; and
 - b) submit the written record required by this condition to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident.
- 3.4 Should any further actions be taken after the date of written notification, as a result of an incident occurring, the licensee shall forward a written report of those actions to the Agency as soon as practicable and no later than ten days after the initiation of those actions.
- 3.5 Unless otherwise agreed by the Agency, all documentation submitted to the Agency shall:
- (a) be sent to the Agency's headquarters;
 - (b) comprise one original and three copies;
 - (c) be formatted in accordance with any written instruction or guidance issued by the Agency;
 - (d) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;
 - (e) be submitted in accordance to the relevant reporting frequencies specified by this licence;
 - (f) be certified as accurate and representative by the licensee; and
 - (g) in the case of results of any environmental monitoring, be accompanied by a written interpretation setting out their significance.
- 3.6 Copies of all environmental monitoring data obtained by the licensee which relates to the facility shall be forwarded to the Agency at the frequencies set out in Schedule D to this licence.

- 3.7 In the event of any incident which relates to discharges to surface water, the licensee shall notify the Southern Regional Fisheries Board as soon as practicable by telephone and in writing (by facsimile if available) and in any case not later than 10:00am on the following working day after such an incident.
- 3.8 Unless otherwise agreed in writing with the Agency, all documentation required to be maintained under this licence, shall be retained by the licensee.
- 3.9 Unless otherwise agreed in advance in writing with the Agency, the licensee must give at least fourteen days notice to the Agency of the following events:
- a) the cessation of waste disposal activities at the facility for a period in excess of twenty-eight days;
 - b) the re-commencement of waste disposal activities at the facility following a period of cessation referred to at a) above.
- 3.10 The licensee shall provide additional copies of any documentation referred to in this licence to the Agency upon written request, within the time specified in writing by the Agency.
- 3.11 The licensee shall keep the following documents at the facility office referred to in Condition 4.5.
- a) the current waste licence relating to the facility;
 - b) any previous waste licence in respect of the facility;
 - c) the current EMS for the facility;
 - d) the previous year's AER for the facility;
 - e) all written procedures produced by the licensee which relate to the licensed activities.
- 3.12 The licensee shall maintain a written record for each load of waste arriving at the facility. The licensee shall record the following:
- a) the name of the carrier;
 - b) the vehicle registration number;
 - c) the name of the producer(s)/collector(s) of the waste as appropriate;
 - d) a description of the waste;
 - e) the quantity of the waste, recorded in tonnes;
 - f) the name of the person checking the load; and,
 - g) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.
- 3.13 A written record shall be kept of each consignment of leachate and/or contaminated stormwater removed from the facility by tanker;
- a) the name of the carrier;
 - b) the date and time of removal of leachate and/or contaminated stormwater from the facility;
 - c) the volume of leachate and/or contaminated stormwater, in cubic metres, removed from the facility on each occasion;
 - d) the name and address of the Waste Water Treatment Plant to which the leachate and/or contaminated stormwater was transported;
 - e) any incidents or spillages during removal or transportation.

- 3.14 The licensee shall maintain a written record of all complaints relating to the operation of the activity. Each such record shall give details of the following:
- a) date and time of the complaint;
 - b) the name of the complainant;
 - c) details of the nature of the complaint;
 - d) actions taken on foot of the complaint and the results of such actions; and,
 - e) the response made to each complainant.

Reason : To provide for the notification of incidents, to update information on the activity and to provide for the keeping of records.

CONDITION 4 SITE INFRASTRUCTURE

4.1 The licensee shall establish all infrastructure referred to in this licence prior to the commencement of the licensed activities or as agreed in advance with the Agency.

4.2 Site Notice Board

4.2.1 Within three months of the date of grant of this licence, a Site Notice Board shall be provided and maintained by the licensee on the facility, so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the identification board shall be 1200 mm by 750 mm.

4.2.2 The board shall clearly show:

- a) the name and telephone number of the facility;
- b) the normal hours of opening;
- c) the name, address and telephone number of the licence holder;
- d) an emergency out of hours contact telephone number;
- e) the name, address and telephone number of the operator of the facility;
- f) the licence reference number;
- g) where and when environmental monitoring information relating to the facility can be obtained.

4.3 Site Security

4.3.1 Security and stockproof fencing and gates shall be installed and maintained as described in Dwg. No. 13 97-01101 Rev B received by the Agency on the 28th April 1999 within six months of the date of grant of this licence.

4.3.2 Within six months of the date of grant of this licence, the licensee shall carry out a review of the site security arrangements for the site and submit to the Agency for its agreement a report to include any improvements considered necessary.

4.3.3 The licensee shall remedy any defect in the gates and/or fencing as follows:

- a) a temporary repair shall be made by the end of the working day; and,
- b) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days or as otherwise agreed in writing with the Agency.

4.3.4 Gates shall be locked shut when the facility is unsupervised.

4.4 Site Roads and Hardstanding

4.4.1 The primary access road, haul and perimeter roads shall be provided and maintained to the specification described in attachment D.1 of the application.

4.4.2 A hardstanding area shall be provided and maintained at the location entitled "proposed 20x 20m vehicular hard standing" and shown on Drawing No. 15 Rev C received by the Agency on the 28th April 1999 within twelve months of the date of grant of licence.

- 4.5 The licensee shall provide and maintain an office on the facility, at the location shown in on Dwg. No. LDF-LF1-97, Revision B (dated 16/9/1997) or at the proposed new administration/operations building shown in Drawing No. 15 Rev C. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.
- 4.6 The licensee shall provide and maintain a working telephone and facsimile machine in the office specified in Condition 4.5 above.
- 4.7 A Waste Inspection Area and Waste Quarantine Area shall be provided and maintained at the location shown in Drawing No. 15 Rev C within twelve months of the date of grant of licence. The licensee shall ensure that this area shall be constructed and maintained in a manner suitable and be of a size appropriate for the inspection of waste and subsequent quarantine if required. The waste inspection area and the waste quarantine area shall be suitably and clearly segregated from each other.
- 4.8 The vehicular hardstanding, waste inspection and quarantine areas referred to in Conditions 4.4.2 and 4.7 shall:
- 4.8.1 be constructed with a hard impervious base graded to a longitudinal cross-sectional fall;
- 4.8.2 be contained by an impervious bund not less than 100 mm high; and,
- 4.8.3 drain to a sump.
- 4.9 The licensee shall provide and maintain a weighbridge and weighbridge house at the facility within twelve months of the date of grant of licence. The exact location of the weighbridge and the weighbridge house shall be agreed in writing with the Agency.
- Until this date, the existing weighbridge shall be maintained as outlined in Attachment D.1.d of the waste licence application.
- 4.10 Vehicle Cleaning
- 4.10.1 The licensee shall maintain a dry wheel shake out unit at the facility in accordance with the specification shown in Drawing No. 35 Rev B received by the Agency on the 28th April 1999. All waste vehicles shall use the wheel shake out unit.
- 4.10.2 Within two months of the date of grant of this licence, the licensee shall provide a review of vehicle cleaning facilities at the construction and demolition facility and at the landfill facility and shall provide a report to the Agency for its agreement outlining the temporary measures to minimise dust nuisance.
- 4.10.3 Within nine months of the date of grant of this licence, the licensee shall install a wheelwash unit immediately after the dry wheel shake out unit at a location to be agreed with the Agency. Upon completion of this works all waste vehicles shall use the wheel shake out unit and wheelwash.
- 4.10.4 The dry wheel shake out unit and the wheelwash cleaner unit when installed shall be inspected on a daily basis and drained as required. Accumulated silt shall be removed and disposed of at the working face.
- 4.10.5 Drainage from the wheel cleaning areas will be directed to an oil separator prior to discharge to the surface water swale.
- 4.11 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.

4.12 The licensee shall maintain a septic tank treatment system at the facility for the treatment of sewerage arising on-site. Unless otherwise agreed in writing with the Agency the location of the treatment plant shall be as shown on Drawing No. 15 Rev C.

4.13 Fuel Storage

4.13 .1 The licensee shall establish and maintain a bunded fuel storage area at the facility within three months of the date of grant of this licence. Unless otherwise agreed in writing with the Agency the location of the fuel storage area shall be as shown on Drawing No. 15 Rev C. Fuels shall only be stored at the agreed location.

4.13 .2 All tank and drum storage areas shall be rendered impervious to the materials stored therein. In addition, tank and drum storage areas (including waste oil storage in the civic waste facility) shall, as a minimum be bunded, either locally or remotely, to a volume not less than the greater of the following:

(a) 110% of the capacity of the largest tank or drum within the bunded area; or

(b) 25% of the total volume of substance which could be stored within the bunded area.

4.13 .3 All drainage from bunded areas shall be diverted for collection and safe disposal.

4.13 .4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.

4.13 .5 The integrity and water tightness of all the bunds, tanks and containers and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated by the licensee and shall be reported to the Agency within six months of the date of grant of this licence. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. The licensee shall also submit to the Agency for its agreement in each case a written report on the storage of fuels on site. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.

4.13 .6 All tanks and containers shall be labelled to clearly indicate their contents.

4.14 Civic Waste Facility

4.14 .1 The licensee shall, not later than six months from the date of grant of licence submit to the Agency for agreement a decommissioning plan, including a time schedule for the decommissioning of the civic waste facility. This plan shall cater for the rendering safe or removal for disposal/recovery of any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

4.14 .2 The licensee shall provide and maintain a civic waste facility at the location shown in Dwg No. 15 Rev C received by the Agency on the 28th April 1999 within twelve months of the date of grant of licence.

4.14 .3 Within two months of the date of grant of this licence, a temporary waste oil storage tanker shall be install to supplement the existing waste oil storage at this facility.

4.14 .4 The licensee shall maintain a CFC gas extraction unit at the civic waste facility as outlined in Article 16 response received by the Agency on 28th October 1998. The CFC gas extraction unit shall relocated be as shown in Dwg No. 15 Rev C received by the Agency on the 28th April 1999 within twelve months of the date of grant of licence.

4.14.5 The licensee shall, within six months of the date of grant of this licence, submit proposals to the Agency, for its agreement, regarding the acceptance and handling of additional appropriate hazardous waste types at the civic waste facility.

4.14.6 All hazardous wastes accepted at the civic waste facility shall be recovered or disposed of at appropriate facilities.

4.15 Specified Engineering Works

4.15.1 The licensee shall submit written proposals for all Specified Engineering Works, as defined in Schedule E: Specified Engineering Works, to the Agency for its agreement two months prior to any such works being carried out. No such works shall be carried out without the prior agreement of the Agency.

4.15.2 All specified engineering works shall be supervised by a competent person(s) agreed in writing in advance by the Agency and that person, or persons, shall be present at all times during which relevant works are being undertaken.

4.15.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The validation report shall include the following information

- a) a description of the works;
- b) as-built drawings of the works;
- c) records and results of all tests carried out (including failures);
- d) where relevant a drawing and sections showing the location of all samples and tests carried out;
- e) daily records sheets/diary;
- f) name(s) of contractor(s)/individual(s) responsible for undertaking the engineering works;
- g) name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;
- h) records of any problems and the remedial works carried out; and
- i) any other information requested in writing by the Agency.

4.16 Lining Systems

4.16.1 All stormwater and dilute leachate retention ponds and reed bed systems shall be lined to the satisfaction of the Agency. Details on the lining systems proposed shall be submitted to the Agency for its agreement within three months of the date of grant of this licence.

4.16.2 All lagoon structures on-site shall be inspected and certified fit for purpose on an annual basis by an independent and appropriately qualified chartered engineer. Any remedial works recommended in this report must be implemented within a time-scale to be agreed with the Agency.

4.17 Leachate Management

4.17.1 Unless specified otherwise in this licence or as otherwise agreed with the Agency, leachate management at the facility shall be carried out as described in the information entitled "Outline of proposed leachate collection drain Kinsale Road Landfill" and received by the Agency on the 11th May 1999.

4.17.2 The level of leachate in the pump sumps shall be continuously monitored as outlined in Attachment D4, Article 16 information received by the Agency on the 28th October, 1998.

4.17.3 The licensee shall submit proposals to the Agency for agreement within three months of the date of grant of this licence, (i) to cover the temporary HDPE lined stormwater/leachate retention facility and (ii) to install a spur line at the eastern section of the leachate collection drain as indicated on Dwg. No. SK-.01 Rev B received by the Agency on the 11th May 1999.

4.17.4 Leachate Collection System - Infrastructure Works

The licensee shall install the following infrastructure outlined in "Outline of proposed leachate collection drain Kinsale Road Landfill" and received by the Agency on the 11th May 1999 within six months of the date of grant of this licence:

- (i) leachate cut off drain at the southern boundary of the facility incorporating PS3 and PS4 as indicated on Dwg. No.2 Rev B.
- (ii) a leachate conditioning plant and associated works.
- (iii) connection pipework with Tramore River Valley Sewer.

The licensee shall install the following infrastructure outlined in "Outline of proposed leachate collection drain Kinsale Road Landfill" and received by the Agency on the 11th May 1999 within sixteen months of the date of grant of this licence:

- (iv) leachate collection drain and proposed sheet pile wall and spur line on eastern section of collection drain.
- (v) extension to connection pipework with Tramore River Valley Sewer

The licensee shall install a temporary HDPE lined stormwater/leachate retention facility at the location identified on Dwg. No. 18 received by the Agency on the 28th April 1999 within twelve months of the date of grant of this licence. A freeboard of 0.5m shall be maintained in this facility at all times.

4.17.5 All tanks for the storage and/or treatment of untreated leachate shall be fully enclosed except for inlet and outlet piping.

4.17.6 Within three months of the date of grant of this licence, a proposal for odour abatement of the off-gas from the leachate conditioning plant shall be submitted to the Agency for its agreement. These proposals shall include information on the installation, maintenance and monitoring of emissions from the odour abatement plant.

4.18 Surface Water Management

4.18.1 Within three months of the date of grant of this licence the licensee shall submit to the Agency for its agreement a management programme for the control of surface water run off from the facility. These proposals shall include as a minimum:

- (i) A phased introduction of capping whereby surface water run off from each restored phase can be determined independently prior to discharge to the "stormwater retention pond".

- (ii) The certification of the surface water drainage network and the quality of the surface water run off from each phase shall be carried out by an appropriately qualified engineer/chemist. No surface water run-off shall be discharged to the stormwater retention pond until this certification has been agreed with the Agency.
- (iii) Control measures shall be introduced whereby the "stormwater retention pond" can be isolated and its contents (a) discharged to the leachate management infrastructure prior to ultimate discharge to sewer or (b) tankered off site.
- (iv) Details on the realignment of the Tramore River which shall be made in consultation with the South Western Regional Fisheries Board.
- (v) Details on the operation of the Reed Bed system in accordance with the terms of this licence.

4.18 .2 The licensee shall within three months from the date of grant of this licence submit to the Agency for approval a proposal for the location of:

- (i) two temporary monitoring locations along the western and eastern sections of the stormwater swale;
- (ii) one permanent surface water monitoring location along the western boundary of the facility upgradient of the Blackash Road former landfill site;
- (iii) one permanent surface water monitoring location along the south-eastern boundary of the facility; and
- (iv) four permanent monitoring locations on the discharge lines from the stormwater retention pond and the two reed bed systems.

4.19 There shall be no recirculation of leachate or dilute leachate or contaminated surface water at the facility within the waste.

4.20 Groundwater Management

4.20 .1 The licensee shall within three months from the date of grant of this licence submit to the Agency for agreement a proposal for the design and location and time of installation of:

- (i) at least seven monitoring locations within the area along the entire line of the leachate collection drain.

4.20 .2 The Licensee shall within nine months from the date of grant of this licence submit proposals to the Agency for its agreement for the examination of the extent of contaminated groundwater and surface water/sediments occurring as a result of historical landfilling. These proposals shall include a time-scale for removal of the source of contamination and for any remediation deemed necessary.

4.21 Landfill Gas Management:

4.21 .1 Within six months of the date of grant of this licence, a proposal for the active collection and flaring of landfill gas and/or utilisation of landfill gas as an energy resource from all areas within the facility that are not included on the Dwg. No 22 "Details of Gas Collection system" shall be submitted to the Agency for its agreement.

4.21 .2 Landfill Gas Flare

- (i) Flare unit efficiency shall be tested within six months of the date of grant of this licence and once every three years thereafter.
- (ii) Within twelve months of the date of grant of the licence, a proposal for the upgrading of the open gas flare unit to an enclosed flare unit shall be submitted to the Agency for its agreement in the event that quantities of landfill gas at former landfill areas are suitable for flaring.

4.21 .3 Landfill Gas Combustion Plant

- (i) Within four months of the date of grant of licence, the licensee shall install continuous carbon monoxide monitors on the outlets of the two gas engines.
- (ii) Within twelve months of the date of grant of this licence, the licensee shall submit proposals regarding the utilisation of heat energy from this plant at other premises/facilities at and in the vicinity of the facility.

4.21 .4 The licensee shall maintain all gas wells, pipework, valves, pumps, flares and other infrastructure that form part of the landfill gas management scheme in a safe and fully operational manner.

4.22 Capping

4.22 .1 The sequence for the temporary restoration of the facility shall be in accordance with Dwg. No. 18 received by the Agency on the 28th April 1999 unless otherwise agreed with the Agency. The licensee shall submit details of the proposed intermediate capping system to the Agency for agreement within six months of the date of grant of this licence.

4.22 .2 The active landfill site shall be capped as follows: a minimum 300mm gas collection layer, a minimum 600mm thick barrier clay layer with a permeability of 10^{-9} m/s or equivalent agreed by the Agency, 300mm free draining material, geotextile / filter barrier, all overlain by a minimum 1 metre of subsoil and topsoil (where topsoil is a minimum of 150mm in depth).

4.22 .3 Reprocessed C+D waste material may be used in the capping system as sub soil, free-draining material and in the gas collection layer. The licensee shall submit evidence to the Agency that the reprocessed waste material is fit for the purpose that it is intended. Reference should be made to any specific reference standards (BS, CEN, DETR) or any future guidance produced by the Agency. Following agreement with the Agency this reprocessed waste material may be used in the capping system.

4.22 .4 The licensee shall provide a six monthly report to the Agency on the quantity of capping materials stockpiled at the facility. In the event that the stockpile fails to contain the requisite volume of capping materials for the next twelve months, the report required by this condition shall contain a proposal for the Agency's agreement for alternative sources of capping materials or for the utilisation of geosynthetic materials.

4.23 Firewater Retention Pond

4.23 .1 Within nine months of the date of grant of this licence, a report shall be made to the Agency for its agreement in respect of the firewater retention facilities available at the facility.

4.24 Construction and Demolition Waste Recovery Area.

4.24 .1 The area shall be located as shown on Dwg. No. 23 Rev B, received by the Agency on the 28th April 1999, unless otherwise agreed with the Agency.

4.24 .2 Within three months of the date of grant of this licence, the licensee shall submit a proposal for the design of the area. This proposal shall include any hardstandings required, appropriate bunding to provide visual and noise screening, locations of stockpiles and present and proposed surface water drainage from this area.

4.24 .3 Within three months of the date of grant of this licence, the licensee shall install a weighbridge to weigh waste being accepted at this facility. Until this date, all incoming waste shall be weighed at the existing weighbridge.

4.25 All buildings constructed on the facility shall have regard to the guidance given in the Department of Environments 1994 publication "Protection of New Buildings and Occupants from Landfill Gas" and any subsequent revisions.

Reason: To provide for the protection of the environment.

CONDITION 5 WASTE ACCEPTANCE AND HANDLING

5.1 No hazardous wastes shall be disposed of in the landfill other than the waste type and quantities specified in Table E.1.2.

5.2 Subject to Condition 5.1 only those Waste Types and quantities listed in Table E.1.1, E.1.2, E.1.3 of the waste licence application and in Schedule H shall be disposed of at the facility unless the prior agreement of the Agency has been obtained.

5.3 No construction and demolition waste shall be disposed of at the facility.

5.4 Waste types only as outlined in D.1.p of the waste licence application shall be accepted at the Civic Waste Facility unless subject to the prior written agreement of the Agency.

5.5 Unless otherwise agreed with the Agency, Waste Acceptance Procedures shall be carried out in accordance with Attachment E2 of the waste licence application, September 1997.

5.6 Waste shall only be accepted at the facility between the hours of 08:00 and 18:00 Monday to Friday, 8:00 to 17:00 Saturday, 7:00 and 9:00 Sunday and Bank Holidays, unless subject to the prior written agreement of the Agency.

5.7 Construction and Demolition Facility

5.7 .1 Only construction and demolition waste or other inert material shall be accepted at this facility. Materials which are capable of being recovered for re-use or recycling shall be extracted from the waste. Materials recovered in this way shall be stored temporarily in containers prior to removal from this area.

- 5.7.2 The maximum tonnage to be processed at the construction and demolition facility shall not exceed 2,000 tonnes per day, unless subject to the prior agreement of the Agency.
- 5.7.3 All stockpiles shall be adequately contained to minimise dust generation.
- 5.7.4 Within two months of the date of grant of this licence, the licensee shall review the measures in place to minimise dust generation at this facility and shall provide a report to the Agency for its agreement, making recommendations on the necessity of installing a sprinkling irrigation system for the control of dust nuisance from the facility. Any remedial works recommended in this report must be implemented within a time-scale to be agreed with the Agency.
- 5.7.5 The Construction and Demolition Waste activity shall continue for a period not exceeding twelve months after the cessation of the disposal activities at the facility.
- 5.8 Acceptance of Cement Bound Asbestos
- 5.8.1 Cement Bound Asbestos shall only be accepted at the facility from known customers or new customers subject to initial waste characterisation off-site. The written records of this off-site waste profiling shall be retained by the licensee for all active customers and for a two year period following termination of licensee/customer agreements.
- 5.8.2 The licensee shall ensure that all asbestos received at the facility shall be double bagged. The inner bag shall be coloured red and the outer bag shall be transparent. All bags used should be securely sealed and marked to clearly indicate their contents.
- 5.8.3 Within three months of the date of grant of this licence, the licensee shall record the location of all asbestos being deposited at the facility to an accuracy of 0.5 metre.
- 5.8.4 Representative samples of cover material shall be taken from locations across the site and analysed for asbestos fibres. A proposal for such monitoring shall be submitted to the Agency for agreement within three months of the date of the grant of the licence.
- 5.9 Waste Characterisation
- 5.9.1 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for agreement detailed written procedures for the acceptance of waste (to distinguish between inert, non-hazardous and hazardous wastes) and shall outline the procedures for dealing with hazardous wastes.
- This shall include a proposal for sludge, eluate and toxicity testing by standardised and internationally accepted procedures and carried out by a competent laboratory and shall be submitted to the Agency for its agreement within six months of the date of grant of this licence.
- 5.9.2 Testing shall be performed on a minimum of two samples per annum for all industrial sludges/solids being accepted at the facility and the results included in the AER.
- 5.10 A record of all inspections shall be maintained. All other wastes shall be checked at the working face to ensure that they comply with the requirements of the licence. Any wastes deemed to be in contravention of this licence and/or unsuitable for disposal at this facility shall be removed for disposal at an appropriate alternative facility. Such

waste shall be stored in the Waste Quarantine Area only and may be stored for a maximum of forty eight hours.

- 5.11 The quantity of wastes to be accepted for disposal at the landfill, shall not exceed 200,000 tonnes per annum, unless otherwise agreed in advance with the Agency.
- 5.12 Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency.
- 5.13 Scavenging shall not be permitted at the facility.
- 5.14 Unless subject to the prior agreement of the Agency the following shall apply at the landfill:
- a) only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials; and,
 - b) the working face of the landfill shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and have a slope no greater than 1 in 3.
 - c) all waste deposited at the working face shall be compacted as soon as is practicable and at any rate prior to the end of the working day.
 - d) disposal of asbestos based construction materials shall be into prepared bays or trenches. Deposited wastes shall be covered immediately with at least 250mm of suitable material. At the end of the day, the waste shall be covered with a minimum of 500mm of suitable cover material
- 5.15 Notwithstanding Condition 5.14 above, the landfill shall be filled in accordance with the seven phase sequence outlined in Dwg. No. 18 received by the Agency on the 28th April 1999. The Agency shall be informed in writing at least one month prior to the licensee entering into a new phase.
- 5.16 Within three months of the date of grant of this licence, the licensee shall ensure that all previously deposited waste is covered by a temporary cover of at least 500mm so that no waste other than cover material or material suitable for specified engineering works is exposed. In the case of waste being deposited at the working face, such waste shall, by the end of each day, be covered with cover material so as to minimise any nuisances occurring and such that no other waste is exposed. Any cover material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.
- 5.17 A steel wheeled compactor or other such vehicle as agreed with the Agency shall be used for compacting all waste other than that used for restoration or construction purposes.
- 5.18 In order to prevent the formation of voids, all hollow objects and large articles deposited on the site shall be crushed, broken up, flattened or otherwise treated.
- 5.19 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over with the exception of works associated with the construction and installation of the leachate collection system or with prior agreement from the Agency.
- 5.20 No smoking shall be allowed on the facility other than in the present canteen/offices or in the proposed canteen/offices as shown in Dwg. No. 15 Rev C received by the Agency on the 28th April 1999.
- 5.21 Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as outlined in Section D.1.p of the Waste Licence application, or as

otherwise agreed by the Agency. The ultimate recovery or disposal facility for all wastes shall be agreed in advance with the Agency. All wastes removed off site for recovery or disposal shall be transported from the facility to the consignee in a manner which will not adversely affect the environment.

- 5.22 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, details regarding the composting of biodegradable wastes on-site.

Reason: To provide for the acceptance and management of wastes authorised under this waste licence.

CONDITION 6 ENVIRONMENTAL NUISANCES

- 6.1 The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by vermin and odours. Written records shall be made of all inspections and any actions taken as a result of these inspections.
- 6.2 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay.
- 6.3 All loose litter accumulated within the facility and its environs, excluding that which is deposited on the working face, shall be removed and appropriately disposed of on a daily basis.
- 6.4 Any waste placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be removed by the licensee immediately and in any event by 10:00am of the next working day, after such waste is discovered. Such waste shall be disposed of at an appropriate facility.
- 6.5 The licensee shall ensure that all waste being delivered to the facility is appropriately covered.
- 6.6 In dry weather, site roads and any other areas used by vehicles shall be sprayed with water as and when required to minimise airborne dust nuisance.
- 6.7 The licensee shall ensure that the activities shall be carried out in a manner such that odours do not result in significant impairment of, or significant interference with amenities or the environment beyond the facility boundary.
- 6.8 The licensee shall ensure that birds and flies do not give rise to nuisance at the facility or the immediate area of the facility. Within three months from the date of the grant of this licence the licensee shall submit proposals to the Agency for its agreement for bird control (incorporating the use of a falcon) and fly control at the facility. The method used by the licensee to control birds and flies at the facility shall not cause environmental pollution.
- 6.9 The licensee shall ensure that vermin and dust do not give rise to nuisance at the facility or the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution.

Reason: To provide for the control of nuisance.

CONDITION 7 EMISSIONS AND ENVIRONMENTAL IMPACTS

- 7.1 No specified emission from the facility shall exceed the emission limit values set out in Schedule G: Emissions of this licence. There shall be no other emissions of environmental significance.
- 7.2 All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer. Written records of the calibrations and maintenance shall be made and kept by the licensee.
- 7.3 The licensee shall ensure that the activities shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.
- 7.4 There shall be no clearly audible tonal or impulsive component in the noise emissions from the activity at any noise sensitive location.
- 7.5 The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of :-

7.5.1 Temperature 273K, Pressure 101.3 kPa, dry gas; 5% oxygen for gas fuels.

Emission limits for emissions to atmosphere in this licence shall be interpreted in the following way:-

7.5.2 Continuous monitoring

- (i) No 24 hour mean value shall exceed the emission limit value.
- (ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
- (iii) No 30 minute mean value shall exceed twice the emission limit value.

7.5.3 Non-Continuous Monitoring

- (i) For any parameter where, due to sampling/analytical limitations, a 30 minute samples is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.
- (ii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.
- (iii) For flow, no hourly or daily mean value shall exceed the emission limit value.

- 7.6 The following are the trigger levels for landfill gas emissions from the facility measured in any service on or immediately adjacent to the facility and/or at any other point located outside the body of the waste:
- a) Methane, greater than or equal to 1.0% v/v; and

- b) Carbon dioxide, greater than or equal to 1.5% v/v.
- 7.7 The trigger levels for TSP and PM₁₀ from the facility measured at any location on the boundary of the facility are:
- PM₁₀ greater than 50µg/m³ for a daily sample,
- TSP concentrations greater than 150µg/m³ for a daily sample.
- 7.8 Emissions to Surface Water
- 7.8.1 The licensee shall install continuous monitoring for flow, pH, TOC and conductivity on the inlet point to the stormwater retention pond.
- 7.8.2 A visual examination of the surface water discharge shall be carried out daily. A log of such inspections shall be maintained.
- 7.8.3 All flow meters shall be calibrated, operated and maintained as necessary so they will accurately reflect both the effluent discharge and the receiving water flow.
- 7.8.4 No stormwater shall be discharged to the Tramore River or the Trabeg River when its quality indicates that it exceeds the action levels specified in Condition 9.5.
- 7.8.5 No substance shall be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish.
- 7.8.6 All treatment/abatement control and monitoring equipment shall be calibrated and maintained at all times when in use, in accordance with the information submitted in Attachment D.4 of the waste licence application or as otherwise approved by the Agency.
- 7.9 Emissions to Sewer
- 7.9.1 Discharge of leachate shall be via the leachate discharge line indicated on Dwg. No. 16 received by the Agency on the 28th April 1999.
- 7.9.2 No substance shall be present in emissions to sewer in such concentrations as would constitute a danger to maintenance personnel working in the sewerage system or as would be damaging to the fabric of the sewer or as would interfere with the biological functioning of a downstream wastewater treatment works.
- 7.9.3 No emission to sewer shall take place which gives rise to any reaction within the sewer or to the liberation of by-products which may be of environmental significance. In particular the emission shall not contain any liquid matter (including petroleum spirits or organic solvents) or thing which is or may be liable to set or congeal at average sewer temperature or is capable of giving off any flammable or explosive gas or any acid, alkali or other substance in sufficient concentration to cause corrosion to sewer pipes, penstock and sewer fittings or the general integrity of the sewer.
- 7.9.4 Non-trade effluent wastewater (e.g. firewater, accidental spillage) which occurs on-site shall not be discharged to the sewer without the prior authorisation of the Sanitary Authority.
- 7.9.5 The licensee shall provide and maintain an inspection chamber in a suitable position in connection with each pipe through which the leachate is being discharged. Each such inspection chamber or manhole shall be constructed

and maintained by the licensee so as to permit the taking of samples of the discharge.

- 7.9.6 The licensee shall submit monitoring results to the Sanitary Authority on an annual basis.
- 7.9.7 The licensee shall permit authorised persons of the Agency and the Sanitary Authority to inspect, examine and test, at all reasonable times, any works or apparatus installed in connection with the trade effluent and to take samples of the trade effluent.
- 7.10 Temporary Emissions of Dilute Leachate / Contaminated Stormwater to sewer
- 7.10.1 Within two months of the date of grant of this licence written permission for the discharge of contaminated stormwater/dilute leachate to the Tramore River Valley Sewer shall be sought from the Sanitary Authority. If this is not obtained alternative arrangements shall be submitted to the Agency for approval.
- 7.10.2 Discharge of contaminated stormwater/dilute leachate shall be via the stormwater discharge line (when operational) indicated on Dwg. No. 16 received by the Agency on the 28th April 1999. Discharge procedures shall be in accordance with any written requirements of the Sanitary Authority.
- 7.11 Any leachate or other contaminated water removed from the facility shall be transported to a wastewater treatment plant whose name and location has been agreed in advance by the Agency. Permission for the disposal of leachate at that wastewater treatment plant shall be obtained from the Sanitary Authority on an annual basis. Disposal procedures for the leachate at the waste water treatment plant shall be in accordance with any written requirements of the Sanitary Authority.
- 7.12 Emission limit values for emissions to sewer in this licence shall be interpreted in the following way:-
- 7.12.1 Continuous monitoring
- (i) No flow value shall exceed the specified limit
- 7.12.2 Non-Continuous monitoring
- (i) Eight out of ten consecutive results, calculated as daily mean concentration or mass emission values on the basis of flow proportional composite sampling shall exceed 1.2 times the emission limit value.
- (ii) No grab sample shall exceed 1.2 times the emission limit value.

Reason: To control emissions from the facility and provide for the protection of the environment.

CONDITION 8 RESTORATION AND AFTERCARE

- 8.1 The Restoration and Aftercare Plans for the facility shall be based on the plan submitted as part of the waste licence application, having regard to the requirements of Conditions 1.2, 4.18 and 4.22. The final details shall be agreed, in advance of any works, in writing with the Agency. The licensee shall update these schemes when required by the Agency and submit amendments to the Agency for its agreement.

- 8.2 The final profile of the facility shall be as shown in Drawing No. 23 Rev B "Restored Contoured Plan (post Settlement)" received by the Agency on the 28th April 1999.
- 8.3 Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate. Any depressions arising after profiling shall be rectified by the emplacement of suitable capping or restoration materials.
- 8.4 No material or object that is incompatible with the proposed restoration of the site shall be present within one metre of the final soil surface levels. No asbestos waste shall be present within 2.5 metres of the final surface levels.
- 8.5 Where tree planting is proposed to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. The combined topsoil and subsoil depths shall be a minimum of 1m (of which topsoil shall be a minimum of 150mm) unless otherwise agreed in writing with the Agency.

Reason: To provide for the restoration and aftercare of the facility.

CONDITION 9 ENVIRONMENTAL MONITORING

- 9.1 The licensee shall carry out such monitoring and at such locations and frequencies as set out in Schedule F: Monitoring and as specified in the Conditions of this licence.
- 9.2 All grid references for environmental monitoring locations listed in Schedule F shall be forwarded to the Agency within three months of the date of grant of this licence.
- 9.3 Within six months of the date of grant of this licence, the licensee shall submit to the Agency an updated appropriately scaled drawing(s) showing the location of all the monitoring locations that are stipulated in this licence.
- 9.4 The licensee shall carry out a noise survey of the site operations annually. The licensee shall consult with the Agency on the timing, nature and extent of the survey and shall develop a survey programme to the satisfaction of the Agency. The survey programme shall be submitted to the Agency in writing at least one month before the survey is to be carried out. A record of the survey results shall be available for inspection by any authorised persons of the Agency, at all reasonable times.
- 9.5 The licensee shall determine normal levels for ammonia, BOD, COD, chloride, conductivity, pH, TOC and temperature and action levels for ammonia and TOC, for the water entering the stormwater lagoon prior to reed bed treatment. A proposal outlining the measures to be implemented when such action levels are reached shall be submitted to the Agency for agreement within nine months of the date of grant of this licence. This programme shall also take into account the water quality in the receiving waters upgradient of the landfill.
- 9.6 The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and off-site points as required by the Agency.
- 9.7 Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers instructions (if any) so that all monitoring results accurately reflect any emission or discharge or environmental parameter.
- 9.8 The licensee shall amend the frequency, locations, methods and scope of monitoring, sampling, analyses and investigations only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.

- 9.9 Unless otherwise agreed in writing with the Agency, a written record shall be kept of the names, qualifications and a summary of relevant experience of all persons who carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring.
- 9.10 The licensee shall maintain all sampling and monitoring points so that they may be used for the representative sampling and monitoring of emissions from the facility.
- 9.11 Within six months of the date of grant of this licence, the licensee submit a proposal concerning the monitoring of emissions from landfill gas utilisation and flaring plant to the Agency for its agreement.
- 9.12 Within six months of the date of grant of this licence, and annually thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility and provide a report on that assessment to the Agency.
- 9.13 A topographical survey including the void space shall be carried out within three months of the date of grant of this licence. This report shall be submitted to the Agency within It shall be repeated at six monthly intervals thereafter. The survey shall be in accordance with any written instructions issued by the Agency.
- 9.14 All boreholes listed in Table C.6.5 of the Article 16 extra information received by the Agency on the 28th October 1998, that are not required to fulfil the requirements of this licence shall be identified and backfilled within six months of the date of this licence.
- 9.15 The licensee shall, within three months of the date of grant of this licence, install in a prominent location on the site a wind sock, or other wind direction indicator, which shall be visible from the public roadway outside the site.
- 9.16 All on-site monitoring points as described in Condition 9 shall be tagged in site with their agreed sampling point codes within ten months of the granting of this licence.
- 9.17 Within six months of the date of grant of this licence, the licensee shall submit a proposal on monitoring of Douglas Estuary to the Agency for its agreement. The proposal shall include, as a minimum, ecological and aquatic toxicological monitoring. Particular consideration shall be given to the monitoring of the area to which the treated leachate will discharge prior to the connection with the Carrigrennan Wastewater Treatment Plant.

Reason: To ensure compliance with the requirements of other conditions of this licence by provision of a satisfactory system of measurement and monitoring of emissions.

CONDITION 10 CONTINGENCY ARRANGEMENTS

- 10.1 The licensee shall, within six months of the date of grant of this licence, submit a written emergency response procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment.
- 10.2 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.
- 10.3 All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.

- 10.4 No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency. Immediate action shall be taken to extinguish it and the appropriate authorities notified.
- 10.5 In the event that monitoring of the side slopes of the facility indicate that there may be a risk of slope failure, this will be treated as an incident and a proposal for remediation action submitted to the Agency for its agreement within one month of the date of the monitoring being carried out.
- 10.6 In the event that any monitoring, sampling or observations indicate that an incident has, or may have, taken place, the licensee shall immediately:
- a) identify the date, time and place of the incident;
 - b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission;
 - c) isolate the source of the emission;
 - d) evaluate the environmental pollution, if any, caused by the incident;
 - e) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
 - f) provide a proposal to the Agency for its agreement within one month to :
 - (i) identify and put in place measures to avoid reoccurrence of the incident, and;
 - (ii) identify and put in place any other appropriate remedial action.

Reason: To provide for the protection of the environment.

CONDITION 11 CHARGES AND FINANCIAL PROVISIONS

11.1 Agency Charges

11.1.1 The licensee shall pay to the Agency an annual contribution of £16,970 or such sum as the Agency from time to time determines, towards the cost of monitoring the activity or otherwise in performing any functions in relation to the activity, as the Agency considers necessary for the performance of its functions under the Waste Management Act, 1996. The licensee shall in 2001 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Consumer Price Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2000, the licensee shall pay a pro rata amount from the date of this licence to 31st December 2000. This amount shall be paid to the Agency within one month of the date of grant of this licence.

11.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased due to an incident occurring on or adjacent to the facility and associated with the facility, the licensee shall contribute such sums as determined by the Agency to defraying its costs.

11.2 Financial Provision for Closure, Restoration and Aftercare

11.2.1 The licensee shall from a date to be set by the Agency establish and maintain a fund, or other form of approved security, that is adequate to assure the Agency that the licensee is at all times financially capable of implementing the Decommissioning and Aftercare Plan required by Condition 8.1. The type of fund and means of its release/recovery shall be agreed in writing by the Agency prior to its establishment.

11.2.2 The fund shall be maintained in an amount always sufficient to underwrite the current Decommissioning and Aftercare Plan.

11.2.3 The licensee shall revise the cost of decommission, restoration and aftercare annually and any details of the necessary adjustments to the fund must, within two weeks of the revision, be forwarded to the Agency for agreement. Any adjustment agreed by the Agency shall be effected within four weeks of said written agreement.

11.2.4 Unless otherwise agreed any revision to the fund shall be computed using the following formula:

$$\text{Cost} = (\text{ECOST} \times \text{WPI}) + \text{CiCC}$$

Where:

Cost = Revised decommission, restoration and aftercare cost

ECOST = Existing decommission restoration and aftercare cost

WPI = Appropriate Wholesale Price Index [Capital Goods, Building & Construction (i.e. Materials & Wages) Index], as published by the Central Statistics Office, for the year since last closure calculation/revision.

CiCC = Change in compliance costs as a result of change in site conditions, changes in law, regulations, regulatory authority charges, or other significant changes.

11.3 Sanitary authority charges

- 11.3.1 Sanitary authority charges of £4,400 annually shall be made payable to the Sanitary Authority directly. Sanitary Authority charges will increase from time to time in response to increased costs in providing drainage and monitoring.

Reason: *To provide for adequate financing for monitoring and financial provisions for measures to protect the environment.*

SCHEDULE A :Waste Activities

Activities authorised by the licence shall be restricted to those described below.

Waste Management Act, 1996: Third Schedule ^{Note 1}	
Class 1.	Deposit on, in or under land (including landfill): This activity is limited to normal landfilling operations up to a maximum of 200,000 tonnes in any one year.
Class 2.	Land treatment, including biodegradation of liquid or sludge discards in soils: This activity is limited to the disposal of non hazardous sludges at the landfill up to a maximum of 12,000 tonnes per annum.
Class 4.	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons: This activity is limited to the construction and operation of leachate and stormwater retention ponds.
Class 5.	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment. This activity is limited to the disposal of certain wastes in exceptional circumstances into lined discrete cells.
Class 7.	Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) 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: This activity is limited to operation of the proposed leachate treatment plant.
Class 11.	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule. This activity refers to processing and mixing of construction/demolition waste prior to disposal at the landfill.
Class 12.	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule. This activity is limited to repackaging waste in an accident/emergency situation.
Class 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. This activity refers to storage of waste such as construction and demolition waste prior to mixing, repackaging etc. This also refers to the checking and classification of waste arriving at the site before deposition. Emergency storage will be provided for this purpose.

Note 1: Any reference to an activity Class is to be taken as being from the Third Schedule of the Waste Management Act, 1996, unless otherwise stated.

Waste Management Act, 1996: Fourth Schedule ^{Note 1}	
Class 2.	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes): This activity is limited to the trial composting of wastes accepted subject to a limit of 1000m ³ at any one time at the facility, subject to prior written approval by the Agency.
Class 3.	Recycling or reclamation of metals and metal compounds: This activity is limited to recycling, use of a number of metal and metal compounds at the construction and demolition facility and the civic waste facility.
Class 4.	Recycling or reclamation of other inorganic materials: This activity is limited to the recycling and/or reclamation of inorganic materials at the construction and demolition facility and the civic waste facility.
Class 10.	The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system: This activity is limited to the use of various suitable wastes as intermediate cover and in the

Waste Management Act, 1996: Fourth Schedule ^{Note 1}

closure/restoration stage of the landfill subject to the agreement of the Agency.

Class 11. Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:

This activity is limited to the use of processed wastes in roadways, drains etc. at the facility.

Class 12. Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule:

This activity is limited to the possible exchange of waste being delivered to the facility in exchange for processed waste subject to the agreement of the Agency

Class 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 activity is limited to temporary storage of waste prior to inspection prior to recycling, recovery and/or reuse on-site.

Note 1: Any reference to an activity Class is to be taken as being from the Fourth Schedule of the Waste Management Act, 1996, unless otherwise stated.

SCHEDULE B :Content of the Environmental Management Programme

Environmental Management Programme

Items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency, or otherwise as agreed with the Agency

Timescale for achieving the objectives and targets listed in the Schedule of Objectives and Targets

Designation of Responsibility for Achieving Targets and Objectives

Other items specified by the Agency

SCHEDULE C :Content of the Annual Environmental Report

Annual Environmental Report Content ^{NOTE 1}

Reporting Period.

Waste activities carried out at the facility.

Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year.

Calculated remaining capacity of the facility and year in which final capacity is expected to be reached.

Methods of deposition of waste.

Summary report on emissions.

Summary of results and interpretations of environmental monitoring, including plans of all monitoring locations including 12 digit grid references.

Resource and energy consumption summary.

Proposed development of the site and timescale of such development.

Volume of leachate produced and volume of leachate transported / discharged off-site.

Report on development works undertaken during the reporting period, and those proposed during the coming year.

Report on restoration of completed cells/ phases.

Site survey showing existing levels of the facility at the end of the reporting period.

Estimated annual and cumulative quantities of landfill gas emitted from the site.

Results from testing of industrial non hazardous sludges and solids being accepted at the facility.

Estimated water balance of the areas identified in Dwg. No. 17 received by the Agency on the 28th April 1999

Monthly water balance calculation and interpretation.

Meteorological Report.

Schedule of Environmental Objectives and Targets for the forthcoming year.

Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year's report.

Full title and a written summary of any procedures developed by the licensee in the year which relates to the facility operation.

Tank, pipeline and bund testing and inspection report.

Reported incidents and Complaints summaries.

Reports on financial provision made under this licence, management and staffing structure of the facility, and a programme for public information.

Any other items specified by the Agency.

NOTE 1 Content to be revised subject to the written agreement of the Agency after cessation of waste acceptance at the facility.

SCHEDULE D :Recording and Reporting to the Agency

Table D.1 Recurring Reports

Report	Reporting Frequency ^{Note1}	Report Submission Date
Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	Twelve months from the date of grant of licence and one month after the end of each year thereafter.
Record of incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	Six months from the date of grant of licence and one month after end of the three year period being reported on.
Flare Test	Every three years	Six months from the date of grant of licence and one month after end of the three year period being reported on.
Specified Engineering Works reports	As they arise	Two months prior to the works commencing.
Seven Phase Landfilling Sequence	As they arise	One month prior to entering a new phase
Monitoring of CO & PM ₁₀ continuous monitors	Monthly	Ten days after end of the month being reported on.
Monitoring of Landfill gas	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Surface Water Quality	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Groundwater Quality	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Leachate	Quarterly	Ten days after end of the quarter being reported on.
Dust /TSP/ PM ₁₀ Odour Monitoring	Quarterly	Ten days after end of the quarter being reported on.
Topographical Survey	Biannually	Three months from the date of grant of licence and one month after the end of the period being reported thereafter.
Monitoring of Landfill Gas Combustion Products	Biannually	One month after end of the period being reported on
Capping Material Stockpiles	Biannually	One month after end of the period being reported on
Meteorological Monitoring	Annually	One month after end of the year being reported on.
Noise Monitoring	Annually	One month after end of the year being reported on.
Asbestos Fibre Monitoring	Annually	One month after end of the year being reported on.
Slope stability assessment	Annually	Six months from the date of grant of licence and one month after the end of each year thereafter

Note 1: Unless altered at the request of the Agency

Table D.2 Once-off Reports

Report and Contents	Condition Number	Report Submission Date (Number of months within which to submit, from date of granting of licence, unless otherwise specified)
Scope - Revised Site Plan	1.2	1
Environmental Management System		
(i) EMS Proposals	2.1.1	18
(ii) Schedule of Objectives and Targets	2.2.1	12
(iii) Environmental Management Programme	2.3.1	12
(iv) Management Structure	2.6.1	9
(v) Communication Programme	2.7.1	12
(vi) Annual Environmental Report	2.8.1	12
Infrastructure		
(i) Review site security	4.3.2	6
(ii) Vehicle Cleaning Facilities	4.10.2	2
(iii) Civic Waste decommissioning plan	4.14.1	6
(iv) Lining Systems	4.16.1	3
(v) Leachate management/ Odour Abatement	4.17.3, 4.17.6	3
(vi) Surface Water Management	4.18.1, 4.18.2	3
(vii) Groundwater Management - Monitoring / assessment of historical contamination	4.20.1 4.20.2	3 9
(viii) Landfill Gas Management :		
Extension to landfill gas extraction	4.21.1	6
Flare Upgrade	4.21.2	12
Use of heat energy	4.21.3	12
(ix) Temporary Capping	4.22.1	6
(x) Fire Water Retention Study	4.23	9
(xi) Construction and Demolition Design Proposals	4.24	3
Waste Acceptance Procedures		
(i) C & D cleaning facilities	5.7.4	2
(ii) Monitoring Proposals (Cement bound asbestos)	5.8.3	3
(iii) Waste characterisation	5.9.1	6
(iv) Composting Proposals	5.22	6
Environmental Nuisances		
(i) Bird and Fly Control Proposals	6.8	3
Environmental Monitoring		
(i) Drawing of all Monitoring locations	9.3	6
(ii) Determination of Normal and Action Levels	9.5	9
(iii) Proposal for combustion plant gas flare emissions monitoring	9.11	6
(iv) Monitoring of the estuary	9.17	6
Contingency Arrangements		
(i) Emergency Response Procedures	10.1	6
Charges & Financial Provisions		
(i) Proposal for Financial Provision	11.2	Date to be set

SCHEDULE E : Specified Engineering Works

Specified Engineering Works
Development of Phases and future Cells of the facility including preparatory works.
Landfill cap installation, including temporary and intermediate capping, installation and all other containment works (including any containment works relating to leachate control).
Bunding of fuel and oil storage areas.
Installation of landfill gas management and monitoring systems.
Installation of leachate management, collection, detection, storage, treatment, monitoring and control systems.
Installation of groundwater control and/or monitoring systems.
Surface water management works, stormwater swale, river realignment
Restoration and Aftercare Works.
Any other works notified in writing by the Agency.

SCHEDULE F : Monitoring

Monitoring to be carried out as specified below.

F.1 Landfill Gas

Landfill gas monitoring locations shall be those as set out in Table F.1.1.

Table F.1.1 Landfill Gas Perimeter Monitoring Locations

Station	Easting	Northing
LG1-LG19	See Note 1	See Note 1
LG20-LG29	See Note 1	See Note 1
DP1-DP6	See Note 1	See Note 1

Note 1. Grid References to be supplied within 3 months of the date of grant of this licence.

Note 2. As outlined in Dwg. No. 5 9801127 "Site Investigation Location of boreholes" received by the Agency on 5/3/99.

Table F.1.2 Landfill Gas Monitoring Frequency and Technique

Parameter	Monitoring Frequency		Analysis Method ^{Note1} /Technique ^{Note2}
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH₄) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO₂)%v/v	Monthly	Weekly	Infrared analyser/ flame ionisation detector
Oxygen (O₂) %v/v	Monthly	Weekly	Infrared analyser
Atmospheric Pressure	Monthly	Weekly	Standard
Temperature	Monthly	Weekly	Standard

Note1: All monitoring equipment used should be intrinsically safe.

Note 2: Or other methods agreed in advance with the Agency.

F.2 Landfill Gas Combustion Plant

Emission Points TV01, TV02^{Note 1}

Table F.2.1 Landfill Gas Combustion Plant Monitoring Locations

Parameter	Monitoring Frequency	Analysis Method ^{Note2} /Technique ^{Note3}
Inlet		
Methane (CH₄) % v/v	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO₂)%v/v	Weekly	Infrared analyser/ flame ionisation detector
Oxygen (O₂) %v/v	Weekly	Infrared analyser
Outlet		
Volumetric Flow rate	Biannually	Pitot Tube Method
SO₂	Biannually	Flue gas analyser
NO_x	Biannually	Flue gas analyser
CO	Continuous	Flue gas analyser
Particulates	Annually	Isokinetic/Gravimetric
TA Luft Class I, II, III organics	Annually	Adsorption/Desorption / GC /GCMS ^(Note 4)
Hydrochloric acid	Annually	Impinger / Ion Chromatography
Hydrogen fluoride	Annually	Impinger / Ion Chromatography

Note1: Monitoring location to be installed within three months of the date of grant of this licence.

Note 2: All monitoring equipment used should be intrinsically safe.

Note 3: Or other methods agreed in advance with the Agency.

Note 4: Test methods should be capable of detecting acetonitrile, dichloromethane, tetrachlorethylene and vinyl chloride as a minimum.

F.3 Air Quality Monitoring

Air Quality monitoring locations shall be those as set out in Table F.3.1.

Table F.3.1 Dust, TSP, PM₁₀ and Odour monitoring locations

Station	Easting	Northing
Dust /TSP Monitoring Locations		
D1/TSP1	168081	697479
D2/TSP2	168373	700468
D3/TSP3	168600	696911
D4/TSP4	168178	692770
D5 ^{Note 1}	Note 2	Note 2
PM ₁₀ Monitoring Locations		
S1, S2, S3 ^{Note 3}	Note 2	Note 2
S4 ^{Note 1}	Note 2	Note 2
Odour Monitoring Locations		
O1	168081	697479
O2	168373	700468
O3	168600	696911
O4	168178	692770
O5 ^{Note 1}	Note 2	Note 2
Other ^{Note 4}		

Note 1: Additional monitoring location required in former landfill area. Exact location to be agreed with the Agency.

Note 2: Grid References to be supplied within three months of the date of grant of licence.

Note 3: Locations as indicated on Figure 1 received by the Agency on the 5th March 1999.

Note 4: Odour monitoring locations pre and post the odour abatement treatment system will be required upon its installation.

Table F.3.2 Dust, TSP, PM₁₀ and Odour Monitoring Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
Dust (mg/m ² /day)	Quarterly	Standard Method ^{Note 1}
TSP (mg/m ³)	Quarterly	Standard Method ^{Note 2}
PM ₁₀ (mg/m ³)	Continuous at S3 Quarterly at S1, S2, S4	See Note 2
Odour	Quarterly	See Note 3

Note 1: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute)

Note 2: As described in prEN12341 "Air Quality - field test procedure to demonstrate reference equivalence of sampling methods for PM10 fraction of particulate matter" or an alternative agreed in writing with the Agency.

Note 3: Odour measurements shall be by olfactometric measurement and analysis for mercaptans, organic acids and hydrogen sulphide to be agreed with the Agency.

F.4 Noise

Noise monitoring locations shall be those as set out in Table F.4.1.

Table F.4.1 Noise Monitoring Locations

Station	Easting	Northing
B1	168081	697479
B2	168373	700468
B3	168600	696911
B4	168178	692770
Noise Sensitive Locations ^{Note 1}		
A1-A4 inclusive	Note 2	Note 2

Note 1: Any other noise sensitive location (NSL) as may be deemed by the Agency.

Note 2: Grid references for the NSLs indicated on Dwg. No. 24 Rev B received by the Agency on the 28th April 1999 to be supplied within three months of the date of grant of licence.

Table F.4.2 Noise Monitoring Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
L(A) _{Eq} [30 minutes]	Annual	Standard ^{Note 1}
L(A) ₁₀ [30 minutes]	Annual	Standard ^{Note 1}
L(A) ₉₀ [30 minutes]	Annual	Standard ^{Note 1}
Frequency Analysis(1/3 Octave band analysis)	Annual	Standard ^{Note 1}

Note 1: "International Standards Organisation. ISO 1996. Acoustics - description and Measurement of Environmental noise. Parts 1, 2 and 3."

F.5 Surface Water, Groundwater and Leachate

Surface water monitoring locations shall be those as set out in Table F.5.1.

Table F.5.1 Surface Water Monitoring Locations

STATION	EASTING	NORTHING
EM1	Note 1	Note 1
EM2	Note 1	Note 1
EM7	Note 1	Note 1
EM8	Note 1	Note 1
EM9 (W boundary)	Note 1,2	Note 1,2
EM10 (SE boundary)	Note 1,2,	Note 1,2,

Note 1: Grid references to be supplied within three months of the date of grant of this licence.

Note 2: Monitoring locations to be agreed in advance with the Agency.

Groundwater monitoring locations shall be those as set out in Table F.5.2.

Table F.5.2 Groundwater Monitoring Locations

Station	Easting	Northing
Upgradient MWBR1, OB1, OB2, MWBR7, OB8	Note 1	Note 1
Downgradient OB7, OB3, MWBR3	Note 1	Note 1
BH1, BH12, KC8	See Note 1	See Note 1
A minimum of 7 locations down gradient of leachate collection drain labelled NW1 to NW7. ^(Note 3)	See Note 1	See Note 1

- Note 1.** Grid References to be supplied within 3 months of the date of grant of this licence.
Note 2. As outlined in Dwg. No. 5 9801127 "Site Investigation Location of boreholes" received by the Agency on 5/3/99.
Note 3. Well pairs to be installed as outlined in Volume I of the report received by the Agency on 11th May 1999. Exact locations to be agreed with the Agency. Monitoring only for levels, ammoniacal-N, EC, pH and TOC at these locations.

Leachate monitoring locations shall be those as set out in Table F.5.3.

Table F.5.3 Leachate Monitoring Locations

Leachate Inspection Manholes	Easting	Northing
LW1-LW4 ^(see Note 1)	Note 2	Note 2
P.S.1-P.S.7 ^(see Notes 1,3)	Note 2	Note 2

- Note 1:** As outlined in Dwg. No.02.Rev B 1:2500 location of monitoring boreholes received on 28th April 1999. Monitoring from these locations will not be required when PS1 to PS7 are operational.
Note 2: Grid references to be supplied to the Agency within three months of the date of grant of licence.
Note 3: P.S. 3 and 4 to be installed within 4 months of the date of grant of licence as part of leachate collection drain.

Table F.5.4 Water and Leachate - Parameters /Frequency

Parameter ^{Note 1}	SURFACE WATER Monitoring Frequency	GROUNDWATER Monitoring Frequency	LEACHATE Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Monthly ^{Note 3}	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Weekly ^{Note 4}
Ammoniacal Nitrogen	Quarterly	Monthly ^{Note 3}	Annually ^{Note 3}
BOD	Quarterly	Not Applicable	Annually
COD	Quarterly	Not Applicable	Annually
Chloride	Quarterly	Quarterly	Annually
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Monthly ^{Note 3}	Annually ^{Note 3}
pH	Quarterly	Monthly ^{Note 3}	Annually ^{Note 3}
Total Suspended Solids	Quarterly	Not Applicable	Annually
Temperature	Quarterly	Monthly	Annually
Boron	Not Applicable	Annually	Annually
Cadmium	Annually	Annually	Annually
Calcium	Annually	Annually	Annually
Chromium (Total)	Annually	Annually	Annually
Copper	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
Iron	Annually	Annually	Quarterly
Lead	Annually	Annually	Annually
List I/II organic substances ^{Note 5}	Not Applicable	Annually	Once Off
Magnesium	Annually	Annually	Annually
Manganese	Annually	Annually	Annually
Mercury	Annually	Annually	Annually
Potassium	Annually	Quarterly	Quarterly
Sulphate	Annually	Annually	Annually
Sodium	Annually	Quarterly	Quarterly
Orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Quarterly	Quarterly
Total Organic Carbon	Not Applicable	Quarterly ^{Note 3}	Not Applicable
Residue on evaporation	Not Applicable	Annually	Not Applicable
Zinc	Annually	Annually	Annually

Note 1: All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures. The testing laboratory and the testing procedures shall be agreed in writing with the Agency in advance.

Note 2: Where there is evident gross contamination of leachate, additional samples should be analysed.

Note 3: For the seven groundwater monitoring locations downgradient of the leachate collection drain monitoring for these parameters shall be on a quarterly basis. For the leachate pump sumps monitoring shall be for these parameters on a quarterly basis.

Note 4: Continuous monitoring for PS1 to PS7 inclusive when operational.

Note 5: Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (US Environmental Protection Agency method 525 or equivalent, and pesticides (US Environmental Protection Agency method 608 or equivalent).

F.6 Monitoring of Stormwater Retention Pond/ Reed Bed Treatment System

Grid Reference: Grid References for SRP1 to SRP7 to be supplied within three months of the date of grant of licence.

Table F.6.1 Monitoring of Stormwater Retention Pond / Reed Bed Treatment Plants.

Location / Parameter	Monitoring Frequency	Analysis Method/Technique ^{Note 2}
Inlet to Stormwater Retention Pond - SRP1 ^(Note 1)		
Flow	Continuous	Flow meter / recorder
TOC	Continuous	TOC meter / recorder
pH	Continuous	pH meter / recorder
Conductivity	Continuous	Conductivity Meter / recorder
Suspended Solids	Weekly ^{Note 3}	Gravimetric
Ammonia	Weekly ^{Note 3}	Standard Methods
SRP 2, SRP3, SRP5, SRP6 ^{Note 4}		
Suspended Solids	Weekly ^{Note 3}	Gravimetric
Combined Outlet (SRP7) ^{Note 5}		
Flow	Continuous	Flow meter / recorder
Visual inspection	Daily	Not applicable
Suspended Solids	Weekly ^{Note 3}	Gravimetric

Note 1: This inlet point refers to the combined surface water drainage network entering the stormwater retention pond. It should be noted that surface water run off from individually restored phases shall be monitored individually as per Condition 4.18 before each phase is acceptable for discharge to the stormwater retention pond.

Note 2: Or an equivalent method acceptable to the Agency.

Note 3: Frequency may be reduced depending on results.

Note 4: SRP2 - Outlet to reed bed no1, SRP3 - outlet to reed bed No. 2; SRP4 Overflow outlet from stormwater retention pond, SRP5 - Outlet from Reed Bed No.1, SRP6 - Outlet from Reed Bed NO.2, SRP 7- Combined outlet from Stormwater Retention Facility.

Note 5: This outlet also refers to the outlet from the stormwater retention pond (SRP4) in the case of emergency.

F.7 Monitoring of Emissions to Sewer

Emission Point Reference No.: SD1

Location: As indicated on Drawing No.16 Rev B received by the Agency on the 28th April 1999.

Table F.7.1 Sewer Monitoring - Parameters /Frequency

Parameter	Monitoring Frequency	Analysis Method/Technique ^{Note 1}
Flow	Continuous	Flow meter / recorder
Methane	Continuous	Headspace methane monitor ^{Note 2}
pH	Continuous	pH meter/recorder
Ammoniacal nitrogen	Monthly (24 hour composite)	Standard Method ^{Note 3}
Biochemical Oxygen Demand	Monthly (24 hour composite)	Standard Method ^{Note 3}
Sulphates	Monthly (24 hour composite)	Standard Method ^{Note 3}
Suspended Solids	Monthly (24 hour composite)	Gravimetric

Note 1: Or an equivalent method acceptable to the Agency.

Note 2: Exact details of monitor to be agreed with the Agency.

Note 3: "Standards Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F) 19th Ed. 1995, American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC

F.8 Meteorological Monitoring

The frequency of sampling and analysis is listed in Table F.8.1.
Monitoring Location: Data to be obtained from Cork Airport.

Table F.8.1 Meteorological Monitoring

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Force and Direction	Daily	Standard
Evaporation	Daily	Standard
Humidity	Daily	Standard
Atmospheric Pressure	Daily	Standard

F.9 Ecological Monitoring

Monitoring Locations are as outlined in Table F.9.1 below.

Table F.9.1 Ecological Monitoring: Monitoring Locations

Monitoring Location	Eastings	Northings
A - Trabeg Stream	168633	699490
B - Trabeg Stream	168685	679349
C - Tramore River	167986	693592
D - Tramore River	168197	692102
E- Tramore River (upgradient of former landfill areas)	See Note 1	See Note 1
F - Downstream of discharge point from stormwater collection pond / reed beds	See Note 1	See Note 1

Table F.9.2 Ecological Monitoring: Method/Technique

Monitoring Location	Monitoring Frequency	Analysis Method / Technique
A - F inclusive	Annual	Kick Sample

Note 1: Monitoring location E is upstream of the former landfilling areas on the Tramore River. Monitoring location F is downstream of discharge points from reed beds. Exact locations to be agreed with the Agency. Grid references to be supplied within three months of the date of grant of licence.

F.10 Asbestos Fibre Monitoring

Monitoring Locations : To be agreed with the Agency

Table F.10.1 Asbestos Fibre Monitoring

Parameter (fibres/ml)	Monitoring Frequency	Analysis Method/Technique
Asbestos Fibre Concentration	Annually	Standard Method ^{Note 1}

Note 1 : Method used shall be "Asbestos Fibre in Air" Health and Safety Executive MDHS 39/4, UK (1995) or another method agreed with the Agency. Monitoring shall be carried out by an independent laboratory agreed with the Agency.

SCHEDULE G : Emission Limits

G.1 Noise Emissions: (Measured at the noise sensitive locations in Table F.4.1).

Day dB(A) L _{Aeq} (30 minutes)	Night dB(A) L _{Aeq} (30 minutes)
55	45

G.2 Landfill Gas Concentration Limits: (Measured in any building on or adjacent to the facility).

Methane	Carbon Dioxide
20 % LEL (1% v/v)	1.5 % v/v

G.3 Emissions from Landfill Gas Combustion Plant

Emission Point reference nos: TV01, TV02

Location: Landfill Gas Combustion Plant

Volume to be emitted from each stack:3000m³/hr

Minimum discharge height for each stack:5m

Parameter	Emission Limit Value
Nitrogen oxides as (NO ₂)	500 mg/m ³
CO	650 mg/m ³
Particulates	130 mg/m ³
TA Luft Organics Class I ^(Note 1)	20 mg/m ³ (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II ^(Note 1)	100 mg/m ³ (at mass flows > 2 kg/hr)
TA Luft Organics Class III ^(Note 1)	150 mg/m ³ (at mass flows > 3kg/hr)
Hydrogen Chloride	50 mg/m ³ (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m ³ (at mass flows > 0.05 kg/h)

Note 1: In addition to the above individual limits, the sum of the concentrations of Class I, II and III shall not exceed the Class III limits.

G.4 Quality Limits for Leachate Being Discharged to Sewer

Emission Point Reference No. SD1
 Grid Reference: To be provided within three months of the date of grant of licence
 Volume to be emitted: Maximum in any one day: 432.0m³
 Maximum rate per hour: 25 m³/hr

Parameter	Emission Limit Value	
	Daily Mean Concentration (mg/l)	Daily Mean Loading (kg/day)
BOD	3,000	1296
Suspended solids	1000	432
Ammonia	300	130
Sulphate	500	216
pH	6-9	-
Dissolved Methane ^{Note 1}	0.14	-

Note 1: Dissolved methane to be calculated by calculation. Exact method to be agreed with the Agency.

G.5 Quality Limits for Discharge to Surface Water

Emission Point Reference Nos.: SRP7 - Outlet from stormwater retention/reed bed facility.
 Grid Reference: To be supplied within three months of the date of grant of licence.

Parameter	Emission Limit Value
	Daily Mean Concentration (mg/l)
Suspended solids	35

G.6 Dust Deposition Limits: (Measured at the monitoring points indicated in Table F.3.1).

Level (mg/m ² /day) ^{Note 1}
350

Note 1: 30 day composite sample with the results expressed as mg/m² /day.

SCHEDULE H :Waste Types

Waste Type ^{Note 1}	Maximum Quantity (Tonnes per Annum)
Household	68,000
Commercial	109,000
Industrial Non-hazardous Sludges	15,000
Industrial Non-hazardous Solids	500
Parks and Cleansing	7,500
Total	200,000

Note 1: Maximum quantities of waste types may be altered subject to the agreement of the Agency.

Part III - Activity Refused

In pursuance of the powers conferred on it by the Waste Management Act 1996, the Environmental Protection Agency (the Agency) proposes, under Section 40 to refuse the following classes of activity.

Refused class of activity in accordance with the Third Schedule of the Waste Management Act 1996

Class 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.

REASON: The proposed method of leachate recirculation is not appropriate for the facility and would not satisfy the requirements of Section 40 (4) of the Waste Management Act. No specific proposals for other biological transformation processes were included as part of the licence application.

Sealed by the seal of the Agency on this the 2nd day of February 2000.

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

Anne Butler Director/Authorised Person