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

WASTE LICENCE  
PROPOSED DECISION

<b>Waste Licence</b>	22-1
<b>Register Number:</b>	
<b>Applicant:</b>	Cork County Council
<b>Location of Facility:</b>	East Cork Landfill, Rossmore, Co. 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 received from other parties and the report of its inspector.

### ***Part I Activities Licensed***

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency) proposes, under Section 40(1) of the said Act to grant this Waste Licence to Cork County Council to carry on the waste activities listed below at East Cork Landfill site, Rossmore, Co. Cork subject to eleven 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 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 9:* Use of any waste principally as a fuel or other means to generate energy.
- 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 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

<b>Act</b>	The Waste Management Act, 1996 (No. 10 of 1996).
<b>Agreement</b>	Agreement in writing.
<b>Animal by-products</b>	Any carcase or part of any animal or fish or any product of animal origin not intended for direct human consumption with the exception of animal excreta and catering waste ( S.I. No. 257 of 1994).
<b>Attachment</b>	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
<b>Application</b>	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.
<b>Biodegradable waste</b>	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard.
<b>Commercial waste</b>	As defined in Section 5 (1) of the Act.
<b>Condition</b>	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.
<b>Containment boom</b>	A boom which can contain spillages and prevent these from entering drains or watercourses.
<b>Documentation</b>	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
<b>Emission</b>	As defined in Section 5 (1) of the Act.
<b>Emission Limit Value</b>	Those limits, including concentration limits and deposition levels established in Schedule G: <i>Emission Limits</i> .
<b>Environmental Pollution</b>	As defined in Section 5 (1) of the Act.
<b>Facility</b>	That area or areas defined under Condition 1.2.
<b>Hazardous Waste</b>	As defined in Section 4 (2) of the Act.
<b>Household Waste</b>	As defined in Section 5 (1) of the Act.
<b>Industrial waste</b>	As defined in Section 5 (1) of the Act.
<b>Incident</b>	Any reference to an incident in this licence means an incident as defined in Condition 3.1.
<b>Inert waste</b>	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or

biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.

<b>Landfill</b>	As defined in Section 5 (1) of the Act.
<b>Landfill Gas</b>	Gases generated from the landfilled waste.
<b>Leachate</b>	Any liquid percolating through the deposited waste and emitted from or contained within a landfill as defined in Section 5 (1) of the Act.
<b>LEL (Lower Explosive Limit)</b>	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.
<b>Licence</b>	A Waste Licence issued in accordance with the Act.
<b>Licensee</b>	Cork County Council.
<b>List I/II Organics</b>	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC.
<b>Liquid Waste</b>	Any waste in liquid form and containing less than 20% dry matter.
<b>Maintain</b>	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
<b>Mobile Plant</b>	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
<b>Monthly</b>	At least 12 times per year, at approximately monthly intervals.
<b>Night-time</b>	2200 hrs to 0800 hrs.
<b>Non-hazardous waste</b>	Non-Hazardous Waste is any waste which is not a hazardous waste as defined in the Act.
<b>Quarterly</b>	A period of three calendar months, the first period of which commences on the date of grant of this licence.
<b>Appropriate Facility</b>	A waste management facility, duly authorised under relevant law and technically suitable, other than the facility subject to this licence.
<b>Recovery</b>	As defined in Section 4 (4) of the Act.
<b>Sludge</b>	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment.
<b>Sample(s)</b>	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
<b>Submit</b>	Unless the context of this licence indicates otherwise, submit to the Agency in writing for agreement.

<b>Specified Emissions</b>	Those emissions listed in Schedule G: <i>Emission Limits</i> of this licence.
<b>Specified Engineering Works</b>	Those engineering works listed in Schedule E: <i>Specified Engineering Works</i> of this licence.
<b>Trigger Level</b>	A parameter value which when achieved or exceeded requires certain actions to be taken.
<b>Waste</b>	As defined in Section 4(1) of the Act.
<b>Waste disposal activity</b>	Includes the activities referred to in Section 4 of the Act and listed in the Third Schedule thereto.
<b>Waste recovery activity</b>	Includes the activities referred to in Section 4 of the Act and listed in the Fourth Schedule thereto.
<b>White Goods</b>	Refrigerators, cookers, ovens and other similar appliances.
<b>Working Day</b>	08:00 to 18:00 Monday to Friday inclusive.
<b>Working Face</b>	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: *Waste Activities* and required by the licence.
- 1.2. Waste activities shall be restricted to the area of land outlined in red on Drawing No. B2/B2A Rev.A Site Plan of the application. Any reference in this licence to “facility” shall mean the area thus outlined in red.
- 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 twelve 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 six 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 six 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 Within six months of the date of grant of this licence, 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 Within six months of the date of grant of this licence, 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 six 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 six 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.

**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.*

## 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) any malfunction of any environmental control system;
  - e) slippage or failure of the perimeter embankment;
  - f) any indication that contamination has, or may have, taken place;
  - g) the cessation of waste activities at the facility for a period in excess of 28 days, and their recommencement;
  - h) any occurrence with the potential for environmental pollution; and,
  - i) any emergency.
- 3.2 The written record shall include all aspects described in Condition 10.9 (a) to (e).
- 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: *Recording and Reporting to the Agency* to this licence.

- 3.7 In the event of any incident which relates to discharges to surface water, the licensee shall notify the South Western Regional Fisheries Board, the Department of Marine and Natural Resources and the Sanitary Authority 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 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.
- 3.10 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.
- 3.11 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.
- 3.12 A written record shall be kept of each consignment of leachate removed from the facility. The record shall include the following:
- a) the name of the carrier;
  - b) the vehicle registration number;
  - c) the date and time of removal of leachate from the facility;
  - d) the volume of leachate, in cubic metres, removed from the facility on each occasion;
  - e) the name and address of the Waste Water Treatment Plant to which the leachate was transported;
  - f) the volume of leachate, in cubic metres, discharged at the relevant Waste Water Treatment Plant(s) facility on each occasion;
  - g) any incidents or spillages of leachate during its removal or transportation.
- 3.13 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 **within the timescale specified in this licence unless otherwise** 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 gates and associated fencing shall be maintained as described in Attachment D.1 a) Security. The security gates shall be at the locations shown on Drawing No. D1/1 Rev. A. Notwithstanding this, within three months of the date of grant of this licence, a proposal for site security fencing described in Section 2.1 Site Layout of the Operational Plan for the facility shall be submitted to the Agency for its agreement. Once agreed this fencing shall be installed within the timescale agreed with the Agency and shall be maintained to the specifications as agreed.

4.3.2 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.

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

- 4.3.4 Within six months of the date of grant of this licence, proposals for site security including Closed Circuit Television (CCTV) to be installed at the facility shall be submitted to the Agency for its agreement.
- 4.4 Access Road, Site Roads and Hardstanding
- 4.4.1 The site road(s) including the main access road from the entrance gate and the existing and future haul roads shall be provided and maintained at the location shown on Drawing No. D1/1 Rev. A. The road(s) shall be to the specification as described in Attachment D.1b.) Roads of the application.
- 4.4.2 The licensee shall maintain the access road leading to the facility from the road junction to the north of the facility and shall submit proposals to the Agency for its agreement on measures including signage and speed restrictions for the control of vehicles within the facility and along the access road leading to the facility within six months of the date of grant of this licence.
- 4.4.3 Hardstanding areas shall be maintained at the locations and to the specifications described in Attachment D.1c.) and shown in Drawing No. D1/1 Rev. A.
- 4.5 The licensee shall maintain an office (including store room and toilets) on the facility, at the location shown in Drawing No.D.1/1 Rev. A and referred to thereon as Control House. The office shall be 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 Lighting shall be provided and maintained at the following locations at a minimum: the facility reception area (including car parking area, control house, weighbridge, wheelwash and civic waste facility) the main gate and access road, the leachate lagoon area, the landfill gas flaring and the proposed landfill gas utilisation plant areas.
- 4.8 A Waste Inspection Area (and Waste Quarantine Area) shall be provided and maintained at the location shown in Drawing No.D.1/1 Rev. A. Within six months of the date of grant of this licence, design details for the Waste Inspection Area and Waste Quarantine Area including drainage arrangements shall be submitted to the Agency for its agreement. 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.
- 4.9 The waste inspection and quarantine areas referred to in Condition 4.8 shall:
- a) be constructed with a hard impervious base graded to a longitudinal cross-sectional fall;
  - b) be contained by an impervious bund not less than 100 mm high; and,
  - c) drain only to a sump.
- 4.10 The licensee shall maintain a Civic Waste Facility including Recycling Facilities and skips for the disposal of waste by members of the public at the locations referred to on Drawing D1/1 Rev. A as Recycling Bins and Skips for Bulk Waste.
- 4.11 The licensee shall maintain a weighbridge at the facility. Unless otherwise agreed in writing with the Agency the location of the weighbridge shall be as shown on. Drawing No. D.1/1 Rev. A.
- 4.12 The licensee shall maintain a wheelwash at the facility at the location shown in Drawing No.D.1/1 Rev. A. The wheelwash shall be inspected on a daily basis and drained as

required. Accumulated silt shall be removed and disposed of at the working face. Within three months of the date of grant of this licence the licensee shall submit details of the arrangements for drainage of wheelwash waste water to the Agency for its agreement.

- 4.13 The licensee shall maintain a septic tank system and associated infrastructure including manhole and soakaway at the facility for the treatment of sewerage arising on-site. Unless otherwise agreed in writing with the Agency the location of the septic tank shall be as shown on Drawing No. B.2/2c Rev. A.

#### 4.14 Fuel Storage

4.14.1 Within six months of the date of grant of this licence, a proposal for a bunded fuel storage area shall be submitted to the Agency for its agreement. Prior to the construction of a bunded fuel storage area the licensee shall ensure that all fuel stored on site is stored in bunded tanks to a specification agreed in advance with the Agency.

4.14.2 All tank and drum storage areas shall be rendered impervious to the materials stored therein. In addition, tank and drum storage areas 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.

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

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

4.14.5 The integrity and water tightness of all the bunds, tanks and containers (including tankers used for the purpose of leachate transport) 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 and prior to the commissioning of the bunded fuel storage area as agreed in accordance with Condition 4.14.1. 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.

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

- 4.15 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, details for the storage of fridges on site and the procedures for de-gassing of CFC's from these fridges

#### 4.16 Specified Engineering Works

4.16.1 The licensee shall submit a written report on any proposed specified engineering works as defined in *Schedule E : Specified Engineering Works*, to the Agency for its agreement at least two months prior to any such works being carried out. No such works shall be carried out without the prior agreement of the Agency.

4.16.2 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.



- 4.16.3 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.

#### 4.17 Landfill Lining:

- 4.17.1 Unless otherwise agreed in advance with the Agency the liner system for all future cells, the landfill area, the proposed additional Leachate Storage Lagoon and the proposed surface water/groundwater retention pond shall comprise the following (or equivalent): a composite liner consisting of at minimum a basal soil/clay layer of at least 1m in thickness with a permeability of less than  $1 \times 10^{-9} \text{ ms}^{-1}$  overlain by a 2mm thick high density polyethylene (HDPE) layer.
- 4.17.2 A geotextile layer shall be placed over the HDPE layer. The drainage layer to be placed over the geotextile layer shall comprise a 500mm layer with minimum hydraulic conductivity of  $1 \times 10^{-3} \text{ ms}^{-1}$  and shall be prewashed, uncrushed, granular, rounded stone (16-32 mm grain size). The licensee shall ensure that the drainage layer is compatible with and does not compromise the integrity the HDPE Liner. The side walls shall be designed and constructed to achieve an equivalent protection.

#### 4.18 Groundwater and Leachate Management

- 4.18.1 Unless otherwise agreed in advance with the Agency, leachate management within the lined cells at the facility shall be carried out as described in Attachment D.4 Leachate Management and as revised in further information provided to the Agency dated June 1999 and shown on Drawing No. D4/1 Rev. A Leachate Management.
- 4.18.2 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement proposals for groundwater water management at the facility to ensure the maximum protection of the groundwater resources within and in the vicinity of the site during site development (including site preparation and quarrying activities), operation and closure.
- 4.18.3 Within six months of the date of grant of this licence proposals for the following shall be provided to the Agency for agreement:
- a) the construction of a second leachate storage lagoon at the facility;
  - b) the introduction of leachate level monitoring in the cells of the existing landfill;

- c) provision of stand by pumps in the event of breakdown of leachate pumps or during maintenance work;
  - d) the construction of a rising main from the facility to Carrigtohill Waste Water Treatment Plant; and
  - e) leachate management in the former unlined area(s) of the landfill for the protection of surface waters and groundwater including timescales and objectives and targets relating to discharges. The proposal shall include measures for the abstraction of leachate from the former landfill area(s) and its removal off site for treatment.
- 4.18.4 Following the placement of the liner system in all future cells the licensee shall commission an independent leak detection survey of the liner system. The results of this survey and a description any remediation measures necessary including follow up testing shall be submitted to the Agency prior to the placement of any waste in the newly developed cells.
- 4.18.5 Unless otherwise agreed with the Agency leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers and discharging to Carrigtohill Waste Water Treatment Plant. The frequency of removal of leachate shall be such that a minimum freeboard of 0.5 m is maintained at all times in the leachate storage lagoon.
- 4.18.6 The licensee shall submit to the Agency for its agreement within three months of the date of grant of this licence Operational Procedures for the handling of leachate during removal from the lagoon and subsequent transport discharge to the Carrigtohill Waste Water Treatment Plant.
- 4.18.7 Leachate levels in the waste shall not exceed a level of 1.0m over the HDPE liner at any point.
- 4.18.8 There shall be no recirculation of leachate or dilute leachate or contaminated surface water at the facility within the waste.
- 4.18.9 The licensee shall within nine months of the date of grant of this licence, submit to the Agency for its agreement a proposal for the on site treatment of leachate at the facility.
- 4.19 Landfill Gas Management:
- 4.19.1 Within nine months of the date of grant of this licence, a proposal for the active collection and flaring of landfill gas within the former landfilled areas and the current landfilling areas shall be submitted to the Agency for its agreement.
- 4.19.2 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 nine 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.
- 4.19.3 Within twelve months of the date of grant of this licence, a proposal for the utilisation of landfill gas as an energy resource shall be submitted to the Agency for its agreement.

4.19.4 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.

#### 4.20 Surface water management

4.20.1 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for agreement proposals for surface water management at the facility. These shall include proposals for the following:

- (i) the development of a surface water drainage network for the existing and former landfill area and areas of hardstanding.
- (ii) the construction of a lined surface/groundwater water retention pond including controls to facilitate the shutting off of the discharge in the event of contamination.
- (iii) the criteria (and related monitoring) which will determine when surface water contamination has taken place and procedures to be put in place in the event of such an occurrence.

4.20.2 The licensee shall submit, within six months of the date of grant of this licence, to the Agency for its agreement, design details and a drawing showing the location of the oil-water interceptor.

#### 4.21 Fire Control/ Fire water Retention

4.21.1 Leachate shall not be used as a means of fire control.

4.21.2 The precautions and actions outlined in Attachment F.4 Fire Control and Section 4.9- Fire (Operational Plan- Environmental Controls) shall be applied to prevent the occurrence of fires and to control any incidents involving a fire at the facility.

#### 4.22 Daily Cover/Capping

4.22.1 Within three months of the date of grant of this licence, specifications for daily cover and intermediate capping shall be submitted to the Agency for its agreement.

4.22.2 The final cap shall consist of the following: a minimum 300mm gas collection layer, a minimum 600mm thick barrier clay layer with a permeability of  $10^{-9} \text{ ms}^{-1}$  or equivalent agreed by the Agency, a 300mm drainage layer with a permeability equal or greater than  $10^{-4} \text{ ms}^{-1}$ , all overlain by a minimum 1m of subsoil and top soil (where topsoil is a minimum of 150mm in depth).

4.22.3 Intermediate capping prior to placement of the final capping system on completed cells will consist of a minimum of 500mm. This will also apply to the interface between the exposed face of a completed cell and a new cell. The intermediate cap will be examined in a weekly basis and any defects repaired to the above specification.

4.22.4 All future filled cells shall be permanently capped to the relevant specifications in accordance with condition 4.22.2 within six months of the cells having been filled to the required level. Previously filled cells (within the operational area of the landfill (Cells 1,2,3 and 4 and any other cells filled to the final level prior to the date of grant of this licence), shall be permanently capped in accordance with Condition 4.22.2 within twelve months of the date of grant of this licence.

4.22.5 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 any subsequent six month period (up to the date of completion of final restoration), 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 Slope Stability

4.23.1 The licensee shall introduce rock armour to the specification as referred to in D.1 infrastructure of further information provided to the Agency dated June 1999 and shown on Drawing No. D1/1 Rev B. within six months of the date of grant of this licence unless otherwise agreed in advance with the Agency.

4.24 Construction Schedule/ Sequence

4.24.1 Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement an updated construction schedule and sequence incorporating the requirements of this licence.

4.25 Blasting for the purpose of excavation of rock within the facility, shall not be undertaken unless otherwise agreed in advance with the Agency.

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

## CONDITION 5 WASTE MANAGEMENT

- 5.1. Apart from waste oils for storage at the Civic Waste Facility, no hazardous waste, liquid waste, animal by-products or loads comprising mainly of loose plastic shall be accepted at the facility.
- 5.2. Subject to Condition 5.1 only those Waste Types and quantities listed in Schedule H: *Waste Types* and Tables E.1.1 and E.1.3 of the application and in Schedule H: *Waste Types* shall be disposed of in the landfill unless the prior written agreement of the Agency has been obtained.
- 5.3. The following waste types glass, clothes, batteries, cans, white goods and garden waste only shall be accepted at the Civic Waste Facility unless subject to the prior written agreement of the Agency.
- 5.4. Unless otherwise agreed in advance with the Agency, Waste Acceptance Procedures shall be carried out in accordance with Attachment E.2 Waste Types and Quantities (and attachments) and Appendix VII Operational Plan. Notwithstanding this, within six months of the date of the date of grant of this licence, detailed site specific Waste acceptance Procedures shall be submitted to the Agency for agreement.
- 5.5. Waste shall only be accepted at the facility between the hours of 08:30 and 17:00 Monday to Friday inclusive unless subject to the prior written agreement of the Agency. Access to the facility by members of the public shall be restricted to the Civic Waste Facility only unless otherwise agreed in advance with the Agency.
- 5.6. Waste Characterisation
  - 5.6.1. 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.
  - 5.6.2. 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.
- 5.7. 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 proposed Waste Quarantine Area referred to on Drawing D1/1 Rev. A as Special Waste Storage Area only and may be stored for a maximum of forty eight hours.
- 5.8. The quantity of wastes to be accepted for disposal at the landfill, shall not exceed 120,000 tonnes per annum, unless otherwise agreed in advance with the Agency. The quantity of sewage sludges and industrial non hazardous sludges to be accepted at the facility shall not exceed 3,600 and 5,200 tonnes respectively per annum.
- 5.9. Sludges to be accepted at the facility shall be restricted to dewatered sludges only.

- 5.10. Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement proposals for reducing the quantity of sludges to be accepted at the facility. These proposals shall include proposals for the phasing out of sludges for deposition in the site over a three year period from the date of grant of this licence.
- 5.11. Industrial and sewage sludges shall only be accepted at the facility before 14:00 from Monday to Friday inclusive. Sludges shall only be accepted at the facility from producers who hold a disposal permit issued by the licensee. Copies of such permits shall be available for inspection at the facility and shall be presented by the producer on delivery of the sludge consignment to the facility.
- 5.12. Wastes shall not be deposited in any cell or part of the landfill without the leachate management infrastructure required by this licence in place and without the prior written agreement of the Agency. Notwithstanding this, apart from waste stored temporarily at the Civic Waste Facility, waste for disposal shall only be deposited in the cells inside the perimeter of the landfill as shown on Drawing No. D4/1 Rev. A.
- 5.13. Notwithstanding Condition 5.12 above, the landfill shall be filled in accordance with the phasing sequence outlined in Drawing No. D4/1 Rev. A of the application. The area proposed to be developed as cell 10b shall be reserved for surface water, groundwater and leachate management associated with the facility and storage of restoration materials as required by the conditions of the licence.
- 5.14. Within twelve months of the date of grant of this licence, the licensee shall submit a proposal to the Agency on the sequence of filling which will achieve the final post settlement profile of the restored landfill specified in Condition 8.1 of this licence.
- 5.15. Within three months of the date of grant of this licence , the licensee shall ensure that all previously deposited waste within cells 1 to 3 inclusive of the current landfilling area is covered by a temporary cover of at least 500mm of suitable inert material so that no waste other than cover material or material suitable for specified engineering works is exposed.
- 5.16. 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 agreed by the Agency in accordance with Condition 4.22.1 so as to minimise the potential for any nuisances to occur and such that no other waste is exposed. Any such cover material which is eroded, washed off or otherwise removed shall be replaced by the end of the working day. At the end of the working week a minimum of 150mm of inert material shall be placed over the waste.
- 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. Scavenging shall not be permitted at the facility.
- 5.19. 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.

- 5.20. In order to prevent the formation of voids, all large hollow objects and other large articles deposited on the site shall be crushed, broken up, flattened or otherwise treated.
- 5.21. 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 the occurrence of a fire within the waste with prior agreement from the Agency.
- 5.22. No smoking shall be allowed on the facility other than in the site office, as shown in Drawing No.D.1/1 Rev. A and referred to thereon as Control House.
- 5.23. Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor 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.
- 5.24. Within six months of the date of grant of this licence, proposals for the recovery of the following at the facility shall be submitted to the Agency for its agreement:
  - 5.24.1. waste oils;
  - 5.24.2. white goods including written procedures for de-gassing of CFC's from refrigerators;
  - 5.24.3. composting of biodegradable wastes at the facility; and
  - 5.24.4. inert waste to be used for cover/restoration material at the facility .

**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. Litter Control
  - 6.3.1. The measures and infrastructure described in Section 4.5 Windblown Litter (Operational Plan -Environmental Control) of the application shall be applied to control litter at the facility.
  - 6.3.2. Prior to the disposal of any waste in any cell Fixed Litter Fencing shall be installed and maintained around the perimeter of the active tipping area.
  - 6.3.3. The litter netting system referred to in Condition 6.3.1 and 6.3.2 shall be inspected on a daily basis and 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 netting shall be undertaken within three working days or as otherwise agreed with the Agency.
- 6.3.4. 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.
- 6.3.5. Within three months of the date of grant of this licence the licensee shall submit to the Agency for its agreement proposals for the operation of the facility in adverse wind conditions.
- 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. Dust Control
- 6.6.1. The Dust Control Measures and infrastructure outlined in F.3-*Dust Control* and Section 4.8 -Dust (Operational Plan- Environmental Controls) of the application shall be implemented to control dust at the facility unless otherwise agreed in advance with the Agency.
- 6.6.2. Notwithstanding Condition 6.6.1. in dry weather, site roads and any other areas used by vehicles including areas within and in the vicinity of the active quarry area within the facility boundary shall be sprayed with water as and when required to minimise airborne dust nuisance associated with site development and operation.
- 6.7. Unless otherwise agreed in advance with the Agency, the licensee shall apply the vermin control measures outlined in Attachment F.9 : *Vermin Control* and Section 4.7-*Vermin and Flies* (Operational Plan- Environmental Controls) of the application. Notwithstanding these measures within six months of the date of grant of this licence, the licensee shall submit a proposal to the Agency for its agreement a programme for the control and eradication of insect and rodent infestations at the facility. These proposals should include as a minimum, details on the insecticide(s) and rodenticide(s) to be used, operator training, mode and frequency of application and measures to contain sprays within the facility boundary.
- 6.8. Within six months of the date of grant of this licence the licensee shall submit to the Agency for its agreement the bird control programme to be used at the facility including the frequency of application of the proposed measures and the combination of methods to be used. Notwithstanding this the use of gas operated bird scaring devices and similar bird scaring devices, firearms, birds of prey, distress calls and the use of kites shall not be permitted to be used at the facility for bird control.
- 6.9. Unless otherwise agreed in advance with the Agency the measure outlined in Section 4.6 - *Odours* (Operational Plan- Environmental Control) shall be applied at the facility to minimise the potential for nuisances due to odours to emanate from the activities at the facility.
- 6.10. 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.



- 6.11. The licensee shall ensure that birds, vermin(rodents and flies) 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: Emission Limits* 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. Landfill Gas
- 7.4.1. The following are the trigger levels for landfill gas emissions from the facility measured in any service on, at 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.
- 7.4.2. 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:
- a) in the case of landfill gas combustion flare:  
Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and
  - b) in the case of landfill gas combustion plant:  
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.
- 7.4.3. Emission limits for emissions of landfill gas combustion products to atmosphere in this licence shall be interpreted in the following way:-
- 7.4.3.1. 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.

#### 7.4.3.2. 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.

#### 7.5. Emissions to surface water

- 7.5.1. Once commissioned all surface water run off shall be diverted to the lined surface water retention pond prior to discharge from the facility at a point(s) to be agreed in advance with the Agency.
- 7.5.2. No substance shall be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish

#### 7.6. Disposal of leachate

- 7.6.1. All leachate tankered from the facility shall be transported to Carrigtohill Waste Water Treatment Plant and disposed of there unless otherwise agreed in advance with the Agency. Permission for the disposal of leachate at the authorised Waste Water Treatment Plant shall be obtained from the relevant Sanitary Authority on an annual basis. Disposal procedures for the leachate at the treatment plant shall be in accordance with any written requirements of the Sanitary Authority.
- 7.6.2. Unless otherwise agreed in advance with the Agency and the Sanitary Authority, the following conditions and the monitoring requirements values as specified in *Schedule F.7 Monitoring of Leachate tankered to Waste Water Treatment Plant* and the emission limit values as specified in *Schedule G.3 Leachate Tankered to Waste Water Treatment Plant* shall apply for leachate transported to the Carrigtohill Waste Water Treatment Plant.
- 7.6.3. 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.
- 7.6.4. The licensee shall permit authorised persons of the Agency and the Sanitary Authority to inspect, examine and test, at all reasonable times any works and apparatus installed in connection with leachate storage at the facility.
- 7.6.5. No discharge or 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 dissolved methane, petroleum spirits or organic solvents (including chlorinated organic solvents at concentrations which would give rise to flammable or explosive vapours in the sewer.
- 7.6.6. Non trade effluent waste water(e.g. firewater, accidental spillage) which occurs on-site shall not be discharged to the sewer without the prior authorisation of the Sanitary Authority.

- 7.6.7. The licensee shall submit monitoring results of the leachate discharged to Carrigtohill Waste Water Treatment Plant to Cork County Council Sanitary Authority for the parameters listed in *Table F.7 Monitoring of leachate tankered to Waste Water Treatment Plant* quarterly and within ten days of the quarter being reported on.

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

## **CONDITION 8 RESTORATION AND AFTERCARE**

- 8.1. Within nine months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement a detailed Restoration Plan (including Aftercare) for the facility. This plan shall take account of the recommendations in the Agency publication Landfill Manuals: Landfill Restoration and Aftercare. The height of the final(post settlement) landform shall be restricted to 19m O.D and the Restoration Plan shall include a drawing which shows the proposed final profile of the facility. The Restoration Plan shall incorporate the retention and enhancement, where appropriate, of the existing hedgerow network around the facility boundary. The licensee shall update this Plan when required in writing by the Agency and submit proposed amendments to the Agency for its agreement.
- 8.2. The final profile of the facility shall be in accordance with the Restoration Master Plan agreed with the Agency. Within twelve months of the date of grant of this licence, the licensee shall submit details of landfilling to achieve the final landform to the Agency for its agreement.
- 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.
- 8.5. There shall be no tree planting within the filled areas of the site.

**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. Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement an updated appropriately scaled drawing(s) showing the location of all the monitoring locations that are stipulated in this licence. This shall include any additional monitoring locations required to fulfil this licence. This shall be accompanied by a register of unique coded reference numbers and twelve figure grid references for each monitoring location.
- 9.3. The licensee shall carry out a noise survey of the site operations annually. A survey programme(including the timing, nature and extent of the survey) shall be submitted to the Agency in writing at least two months 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.

- 9.4. The licensee shall within six months of the grant of this licence, submit to the Agency for its agreement noise monitoring proposals for the nearest noise sensitive locations. Such proposals shall address the establishment of noise levels (day time and night time) at the proposed monitoring locations as a result of the operations on site during and outside of normal operations at the facility.
- 9.5. The licensee shall within six months of the grant of this licence, submit to the Agency for its agreement proposals for monitoring dust emissions arising from within the facility boundary. This shall be accompanied by a register of unique coded reference numbers and twelve figure grid references for each monitoring location.
- 9.6. Within six months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement, monitoring proposals to detect off-site migration of landfill gas from the facility. These proposals shall include landfill gas monitoring of the buildings and confined spaces within the facility and within the adjoining premises of Atlantic Shellfish Limited subject to the landowners agreement. The proposals shall include design details of the monitoring boreholes and a drawing showing the position of the proposed monitoring wells relative to the waste. Once agreed these shall be drilled and the monitoring infrastructure installed at the agreed locations within the time frame agreed with the Agency included in the landfill gas monitoring programme at the facility.
- 9.7. Within three months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement details of the gas detection and protection systems to be installed in the buildings on site(storage shed)and control room and the landfill gas monitoring borehole proposed adjacent to the site office.
- 9.8. Within six months of the date of grant of this licence, proposals for the inclusion of all private wells and groundwater supplies(used for animal drinking) within 500m of the facility, in the monitoring programme set out in *Schedule F .4 Table F.4.2* shall be submitted to the Agency for its agreement. Subject to the Agency's agreement and the agreement of the owners these shall be included in the groundwater monitoring programme.
- 9.9. Within six months of the date of grant of this licence, a programme for monitoring of surface water run off generated and stored within the facility (including the areas of hard standing, the restored and operational areas of the facility and the base of the quarry) shall be submitted to the Agency for agreement.
- 9.10. Unless otherwise agreed in advance with the Agency within six months of the date of grant of this licence, the licensee, shall submit to the Agency for agreement proposals for the installation of a meteorological station at the facility capable of monitoring the parameters listed in *Schedule F. Table F. Meteorological Monitoring* of this licence. Prior to the commissioning of the on site meteorological station, the data required by *Schedule F.9 Meteorological Monitoring* of this licence shall be obtained from the meteorological station operated at Cork Airport.
- 9.11. Within six months of the date of grant of this licence, the licensee submit a proposal to the Agency for its agreement concerning the monitoring of emissions from the proposed closed flare unit as required by *Schedule F.1(b) Landfill Gas Flare and Landfill Gas Combustion Plant* to the Agency for its agreement.
- 9.12. Within six months of the date of grant of this licence, the licensee submit a proposal to the Agency for its agreement for monitoring leachate composition and leachate levels within the former landfill area and the lined cells of the existing landfill area.

9.13. Within three months of the date of grant of this licence shall submit proposals to the Agency for its agreement to determine the fate of leachate arising from the former landfilled areas within the facility boundary with particular reference to the potential for contamination of surface water, estuarine sediments and groundwater resources within and in the vicinity of the site. These proposals shall take into account the tidal characteristics of the adjoining waters and shall include the following:

- the now restored landfill area and other areas within the facility which have been used in the past for the disposal of waste, and
- an assessment of the toxicity of the leachate on appropriate key organisms which reflect the habitats in the vicinity of the site.

The investigations shall be undertaken within the timescale agreed with the Agency and a report shall be submitted to the Agency on the findings and any remediation measures proposed within two months of completion of the investigations.

9.14. Ecological Monitoring

9.14.1. The licensee shall submit to the Agency for its agreement within six months of the date of grant of this licence proposals for the ongoing monitoring and assessment of the site and the adjoining habitats(including methods) with particular reference to the intertidal habitats(shoreline and mudflats). The scope of these proposals shall take into account the findings of the investigations required by Condition 9.13 and shall include as a minimum, monitoring of the following :

- (i) habitat quality within the Special Protection Area and the proposed NHA including the usage of the intertidal areas by estuarine birds and an assessment of the relative importance of the area within the Cork Harbour SPA;
- (ii) estuarine water quality and chemical analysis of estuarine sediments;
- (iii) flora including macro algae; and,
- (iv) macroinvertebrate fauna(including bivalves) of sediments and shoreline(hard substrate).

In addition to the above, a summary and an interpretation of the significance of the results of monitoring of the shellfish growing areas in the vicinity of the landfill undertaken by the Department of the Marine and Natural Resources/Marine Institute shall be submitted to the Agency along with the annual Ecological Report required to be submitted in accordance with Schedule D: *Recording and Reporting to the Agency*.

9.15. 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.

9.16. 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.

9.17. 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.

- 9.18. 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.
- 9.19. The licensee shall maintain and clearly label using the assigned coded reference numbers all sampling and monitoring points so that they may be used for the representative sampling and monitoring of emissions from the facility.
- 9.20. 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. Notwithstanding this, unless otherwise agreed in advance with the Agency, the licensee shall undertake monthly inspections of the landfill for any evidence of slippage or failure of the perimeter embankment.
- 9.21. 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 one month of the period being reported upon and shall be repeated at quarterly intervals thereafter. The survey shall be in accordance with any written instructions issued by the Agency and shall include as a minimum an assessment of the remaining life of the active cell(s), the degree of compaction of the waste and the extent of settlement in the restored cells.
- 9.22. 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.

**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 situation 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 carry out a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities and shall, within six months from the date of grant of this licence submit a report, including recommendations on the risk assessment to the Agency for its agreement. The Chief Fire Officer of Cork County Council shall be consulted by the licensee during this assessment.
- 10.3. 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.
- 10.4. 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. 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.
- 10.6. 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.
- 10.7. In the event that monitoring of local wells indicate that the facility is affecting the quantity and/or quality of the water supply in the area the licensee shall treat this as an incident. The licensee shall submit to the Agency for its agreement and within a time specified in writing by the Agency, written proposals for the provision of an alternative supply of water to those affected.
- 10.8. 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.
- 10.9. Unless otherwise notified in writing by the Agency, in the case of repeat incidents, 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 £18,346 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 31<sup>st</sup> 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 written guarantee, 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.



**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 <sup>Note 1</sup>	
<b>Class 1.</b>	<p><b>Deposit on, in or under land (including landfill):</b></p> <p>This activity is limited to the disposal of waste as specified under Class 5 of this Schedule.</p>
<b>Class 4.</b>	<p><b>Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons:</b></p> <p>This activity is limited to the storage of leachate generated within the facility in lined leachate storage lagoon(s) and surface water runoff and groundwater in a lined stormwater retention pond.</p>
<b>Class 5.</b>	<p><b>Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.</b></p> <p>This activity is limited to the disposal of the wastes permitted by the conditions of this licence at a annual rate not exceeding 120,000 tonnes per annum (subject to the waste types and maximum quantities specified in Schedule H: <i>Waste Types</i> of this licence) into lined cells within the perimeter of the landfill as shown on Drawing No. D4/1 Rev. A and subject to Conditions 5.12 and 5.13 of this licence.</p>
<b>Class 7.</b>	<p><b>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):</b></p> <p>This activity is limited to the possible future aeration of leachate in the leachate storage lagoon(s) prior to its removal offsite by tanker to the authorised Waste Water Treatment Plant(s).</p>
<b>Class 11.</b>	<p><b>Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.</b></p> <p>This activity is limited to mixing of sludges( permitted under the conditions of this licence) with other wastes at the active tipping area.</p>
<b>Class 12.</b>	<p><b>Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.</b></p> <p>This activity is limited to the sorting and repackaging of waste deposited at the civic waste facility prior to such waste being landfilled.</p>
<b>Class 13.</b>	<p><b>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.</b></p> <p>This activity is limited to the storage of waste in the civic waste facility and the storage of waste in the waste inspection/quarantine area (subject to the requirements of Condition 5.7) prior to such waste being deposited in the landfill or the removal of such waste offsite for disposal at an appropriate alternative facility.</p>

**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** <sup>Note 1</sup>

<b>Class 2.</b>	<b>Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):</b>  This activity is limited to the trial composting of wastes accepted at the facility subject to a limit of 1000m <sup>3</sup> at any one time at the facility subject to the prior agreement of the Agency.
<b>Class 3.</b>	<b>Recycling or reclamation of metals and metal compounds:</b>  This activity is limited to recycling of metals and metal compounds including white goods at the civic amenity site.
<b>Class 4.</b>	<b>Recycling or reclamation of other inorganic materials:</b>  This activity is limited to the recycling of inorganic materials including glass and clothes at the civic amenity site and other inorganic materials subsequent to the prior agreement of the Agency.
<b>Class 9.</b>	<b>Use of any waste principally as a fuel or other means to generate energy:</b>  This activity is limited to the utilisation of landfill gas derived from the waste deposited within the facility for the purpose of generating energy subsequent to the prior agreement of the Agency.
<b>Class 10.</b>	<b>The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system:</b>  This activity is limited to the possible future use of composted material as an intermediate cover and in the restoration of the site subsequent to the agreement of the Agency.
<b>Class 11.</b>	<b>Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:</b>  This activity is limited to the recovery and transport off site for reuse of waste types authorised by this licence. This activity also includes the use of landfill gas generated on the site for power generation.
<b>Class 13.</b>	<b>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:</b>  This activity is limited to the storage of waste types authorised by this licence in the civic amenity and in the proposed composting area prior to transport off site for recovery.

**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 <sup>NOTE 1</sup>

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.

Estimated annual and cumulative quantity of indirect emissions to groundwater.

Monthly water balance calculation and interpretation.

Meteorological Report.

Effectiveness of environmental nuisance control measures.

Report on stability assessment of side slopes.

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 <sup>Note1</sup>	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.
Specified Engineering Works reports	As they arise	Prior to the works commencing.
Leak Detection Survey	As they arise	Prior to the placement of any waste in newly developed cells.
Quantity of capping material stored	Six monthly	Ten days after end of the quarter being reported on.
Monitoring results of leachate discharged to WWTP <sup>Note 2</sup>	Six monthly	Ten days after end of the quarter 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.
Meteorological Monitoring	Annually	One month after end of the year being reported on.
Dust 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.
Ecological Monitoring	Annually	One month after end of the year being reported on.

Note 1: Unless altered at the request of the Agency

Note 2: Results to be submitted to Cork County Council Sanitary Authority

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)
<b>Environmental Management System</b>		
(i) EMS Proposals	2.1	12
(ii) Schedule of Objectives and Targets	2.2	6
(iii) Environmental Management Programme	2.3	6
(iv) Management Structure	2.6	6
(v) Communication Programme	2.7	6
(vi) Annual Environmental Report	2.8	12
<b>Infrastructure</b>		
(i) Proposals for site security fencing	4.3.1	3
(ii) Proposal for site security including CCTV	4.3.4	6
(iii) Proposal for control of vehicles using the facility	4.4.2	6
(iv) Proposals for waste inspection area	4.8	6
(v) Drainage of wheelwash waste water	4.12	3
(vi) Bunded fuel storage area	4.14	6
(vii) Storage and degassing of white goods	4.15	6
(viii) Leachate management	4.18.3	6
	4.18.6	3
	4.18.9	9
(ix) Active Landfill Gas Control System:Flare	4.19.1	9
(x) Proposals for upgrading flare unit to enclosed flare	4.19.2(ii)	9
(xi) Proposals for landfill gas utilisation	4.19.3	12
(xii) Perimeter Landfill Gas Monitoring	Schedule F1: Monitoring	6
(xiii) Groundwater management proposals	4.18.2	6
(xiv) Surface water management proposals	4.20.1	6
(xv) Details oil interceptor	4.20.2	6
(xvi) Daily cover and intermediate and final Capping	4.22.1	3
(xvii) Construction Schedule/Sequence	4.24.1	3
<b>Waste Acceptance Procedures</b>		
(i) Waste Acceptance Procedures	5.4	6
(ii) Waste Characterisation Testing	5.6.1	6
(iii) Proposals to restrict sludges accepted at the facility	5.10	6
(iv) Recovery of waste oils, white goods, composting biodegradable waste, inert waste for cover/restoration material	5.24	6
(v) Sequence of filling to achieve final post settlement profile	5.14	12
<b>Environmental Nuisances</b>		
(i) Operation of facility in adverse wind conditions	6.3.5	3
(ii) Proposals to control and eradicate insect and rodent infestations	6.7	6
(iii) Bird control programme	6.8	6
<b>Restoration and Aftercare</b>		
(i) Restoration Master Plan	8.1	9
(ii) Details of landfilling to achieve the final landform	8.2	12
<b>Environmental Monitoring</b>		
(i) Updated Drawing(s) showing all environmental monitoring locations	9.2	6

(ii)	Noise survey programme site operations	9.3	Two months prior to survey being undertaken
(iii)	A proposal for the monitoring of the nearest noise sensitive locations	9.4	6
(iv)	Dust monitoring proposals.	9.5	6
(v)	Monitoring proposals to detect off-site migration of landfill gas	9.6	6
(vi)	Gas detection and protection systems for onsite buildings	9.7	3
(vii)	A proposal to include all private wells within 500m of the facility in the monitoring programme	9.8	6
(viii)	Surface water run off monitoring proposals	9.9	6
(ix)	Proposals for meteorological station	9.10	6
(x)	Proposals for monitoring of emissions from proposed enclosed flare unit	9.11	6
(xi)	A proposal for the monitoring of leachate levels within the waste	9.12	6
(xii)	Proposals for investigation of fate of leachate	9.13	3
(xiii)	Ecological Monitoring proposals	9.14	6
(xiv)	Stability assessment of side slopes	9.20	6
(xv)	Topographical survey	9.21	3
<b>Contingency Arrangements</b>			
(i)	Emergency Response Procedures	10.1	6
(ii)	Risk Assessment- Fire Fighting and Fire Water Retention Study	10.2	6
(iii)	Remediation action in the event of risk of slope failure	10.6	If required
(iv)	Contingency proposals for alternative supply of water to residents if necessary	10.7	If required
<b>Charges &amp; Financial Provisions</b>			
(i)	Proposals for Financial Provision	11.2	Date to be set by the Agency



## SCHEDULE E :Specified Engineering Works

### Specified Engineering Works

Development of Phases and future Cells of the facility including preparatory works and lining system.

Development of Waste Inspection/Quarantine Area.

Works associated with improving slope stability.

Landfill cap installation, including temporary and intermediate capping, installation and all other containment works (including any containment works relating to leachate control).

Fencing and site security works including CCTV.

Bunding of fuel and oil storage areas.

Installation of landfill gas management and monitoring systems.

Installation of leachate management, detection, storage, rising main, treatment, monitoring and control systems.

Installation of alternative drinking water supplies.

Installation of groundwater control and/or monitoring systems.

Surface water management works.

Composting proposals and associated infrastructure.

Recycling and recovery activities and associated infrastructure.

Remediation action in the event of risk of slope failure.

Restoration and Aftercare Works.

Any other works notified in writing by the Agency.

## SCHEDULE F : Monitoring

### F.1 Landfill Gas

F.1(a) Landfill Gas Emissions: Landfill Area, Site office and Perimeter monitoring.

#### Monitoring Points:

- Table F.1.1 Monitoring Locations Former Landfill as shown on Drawing J/ 1Rev. B (November 1998) of information submitted 30 November 1998

STATION	EASTING	NORTHING
C1	182476	70394
C2	182407	70484
C3	182523	70503
C4	182522	70388
C5	182399	70411

- Site office C6 (Grid Reference 182593 E 70404 N) shown on Drawing J/ 1Rev. B (November 1998) of information submitted 30 November 1998
- Gas vents (Phase I –VI ), 2 gas vents per cell shown on Drawing No.J/1 Rev.B(November 1998) of information submitted 30 November 1998.

Grid References of the existing gas monitoring vents (Cells 1-4) to be provided to the Agency within three months of the date of grant of this licence and on completion of subsequent phases of development .

- Perimeter Monitoring Locations:

A Drawing showing the location of the proposed network of perimeter monitoring locations and grid references to be provided to the Agency within six months of the date of licence.

The frequency, locations and method of sampling and analysis is listed in Table F.1(a):

Table F.1(a) Landfill Gas Monitoring Frequency and Technique

Parameter	Monitoring Frequency		Analysis
			Method <sup>Note 1</sup> /Technique <sup>Note23</sup>
	Perimeter Boreholes/Gas Vents/Wells within the waste	Site Office	
<b>Methane (CH<sub>4</sub>) % v/v</b>	Monthly	Weekly	Infrared analyser/flame ionisation detector
<b>Carbon dioxide (CO<sub>2</sub>) % v/v</b>	Monthly	Weekly	Infrared analyser/ flame ionisation detector
<b>Oxygen (O<sub>2</sub>) %v/v</b>	Monthly	Weekly	Infrared analyser
<b>Atmospheric Pressure</b>	Monthly	Weekly	Standard
<b>Temperature</b>	Monthly	Weekly	Standard
<b>Minor landfill gas constituents</b>	Annual	Annual	See Note 3

Note 1: All monitoring equipment used should be intrinsically safe. Perimeter boreholes shall be monitored by the use of Flame Ionisation Detector.

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

Note 3: Sampling to be carried out for minor landfill gas constituents (e.g. H<sub>2</sub>S, mercaptans, aliphatic acids etc.) as required by the Agency following evaluation of monthly results.

#### F.1(b) Landfill Gas Flare and Landfill Gas Utilisation Plant

##### Emission Points:

**Landfill Gas Flare:** At location referred to as Gas Flare Stack on Drawing No.J/1 Rev.B (November 1998) of information submitted 30 November 1998.

**Landfill Gas Combustion Plant:** To be agreed in advance with the Agency <sup>Note 1</sup>

Table F.1(b) Landfill Gas Flare and Landfill Gas Combustion Plant Monitoring Frequency and Technique

Parameter	Monitoring Frequency		Analysis Method/Technique Note2/Note3
	Landfill Gas Flare	Landfill Gas Utilisation Plant	
<b>Inlet</b>			
<b>Methane (CH<sub>4</sub>) % v/v</b>	Weekly	Weekly	Infrared analyser/flame ionisation detector
<b>Carbon dioxide (CO<sub>2</sub>)%v/v</b>	Weekly	Weekly	Infrared analyser/ flame ionisation detector
<b>Oxygen (O<sub>2</sub>) %v/v</b>	Weekly	Weekly	Infrared analyser
<b>Outlet</b>			
<b>Volumetric Flow rate</b>	Biannually	Biannually	Pitot Tube Method
<b>SO<sub>2</sub></b>	N/A	Biannually	Flue gas analyser
<b>NOx</b>	Biannually	Biannually	Flue gas analyser
<b>CO</b>	Biannually	Continuous	Flue gas analyser
<b>Particulates</b>	Annually	Annually	Isokinetic/Gravimetric
<b>TA Luft Class I, II, III organics</b>		Annually	Adsorption/Desorption/ GC /GCMS <sup>(Note 4)</sup>
<b>Hydrocarbons</b>	Annually		Adsorption/Desorption/ GC/GCFID <sup>(Note 4)</sup>
<b>Hydrochloric acid</b>	Annually	Annually	Impinger / Ion Chromatography
<b>Hydrogen fluoride</b>	Annually	Annually	Impinger / Ion Chromatography

**Note1:** Monitoring locations to be installed within six months of the date of grant of this licence and prior to the commissioning of the enclosed flare required by Condition 4.19.2( Flare Unit) and the landfill gas utilisation plant required by Condition 4.19.3.

**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.2 Dust

Dust monitoring locations with grid references within the facility boundary to be submitted to the Agency for agreement within six months of the date of grant of this licence

The frequency of dust sampling and analysis is listed in Table F.2.2:

Table F.2.2 Dust Monitoring

Parameter (mg/m <sup>2</sup> /day)	Monitoring Frequency	Analysis Method/Technique
<b>Dust</b>	Three samples per annum <sup>Note 1</sup>	Standard Method <sup>Note 2</sup>

Note 1 : From commencement of construction activities on site

Note 2: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute) or an alternative agreed in writing with the Agency.

### F.3 Noise

Noise monitoring locations shall be those as set out in Table F.3.1 and at the additional locations agreed in advance with the Agency locations

Table F.3.1 Noise Monitoring Locations

STATION	EASTING	NORTHING
N3	182689	70390
N4	182574	70515
N5	182374	70519
GG1	182261	70385
GG4	182273	70242

( Refer to Drawing J/1Rev.B (July 1998) of information submitted 30 November 1998

#### Noise Sensitive Locations:

N1(Grid Reference 182776 E 70115 N) and nearest noise sensitive locations to be agreed in advance with the Agency.

Grid references to be provided to the Agency within six months of the date of licence.

The frequency of sampling and analysis is listed in Table F.3:

Table F.3 Noise Monitoring

Parameter	Monitoring Frequency	Analysis Method/Technique
L(A) <sub>Eq</sub> [30 minutes]	Annual	Standard <sup>Note 1</sup>
L(A) <sub>10</sub> [30 minutes]	Annual	Standard <sup>Note1</sup>
L(A) <sub>90</sub> [30 minutes]	Annual	Standard <sup>Note 1</sup>
Frequency Analysis(1/3 Octave band analysis)	Annual	Standard <sup>Note1</sup>

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

## **F.4 Surface Water**

**F.4.1 Surface Water** Refer to Drawing No. Drawing No.J/1 Rev.B (November 1998) of information submitted 30 November 1998.

Table F.4.1 Monitoring Locations

STATION	EASTING	NORTHING
SW1	237723	133491
SW2	237924	132709
SW3	237896	132686
SWA	237857	132663
SWB	237919	132651
Note 1		

Note 1: Proposals for additional surface water monitoring locations (including surface water retention pond and surface water drains) to be submitted to the Agency for agreement.

The frequency of sampling and analysis is listed in Table F.4.2.

Table F.4.2 Water and Leachate -Parameters /Frequency

Parameter (Note 1)	SURFACE WATER	GROUNDWATER	LEACHATE (in cells/storage lagoon(s))
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
Visual Inspection / Odour	Weekly	Quarterly	Quarterly <sup>(Note2)</sup>
Groundwater Level	N/A*	Monthly	N/A
Leachate level	N/A	N/A	Weekly
Ammoniacal Nitrogen	Quarterly	Monthly	Quarterly
BOD	Quarterly	N/A	Quarterly
COD	Quarterly	N/A	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	N/A
Electrical Conductivity	Quarterly	Monthly	Quarterly
pH	Quarterly	Monthly	Quarterly
Total Suspended Solids	Quarterly	N/A	Quarterly
Temperature	Quarterly	Monthly	Quarterly
Boron	N/A	Annually	Annually
Cadmium	Annually	Annually	Annually
Calcium	Annually	Annually	Annually
Chromium (Total)	Annually	Annually	Annually
Copper	Annually	Annually	Annually
Cyanide (Total)	N/A	Annually	Annually
Fluoride	N/A	Annually	Annually
Iron	Annually	Annually	Annually
Lead	Annually	Annually	Annually
List I/II organic substances <sup>Note 3</sup>	Once off	Annually	Once off
Magnesium	Annually	Annually	Annually
Manganese	Annually	Annually	Annually
Mercury	Annually	Annually	Annually
Potassium	Annually	Quarterly	Annually
Sulphate	Annually	Annually	Annually
Sodium	Annually	Quarterly	Annually
Total Alkalinity	Annually	Annually	Annually
Total Phosphorus or orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Quarterly	Annually
Total Organic Carbon	N/A	Quarterly	N/A
Residue on evaporation	N/A	Annually	N/A
Zinc	Annually	Annually	Annually
Biological Monitoring	Annually <sup>Note 4</sup>	N/A	N/A
Faecal Coliforms	N/A	Annually <sup>Note 5</sup>	Annually <sup>Note 5</sup>
Total Coliforms	N/A	Annually <sup>Note 5</sup>	Annually <sup>Note 5</sup>

\* N/A means not applicable

- 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. 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 methods include : volatiles (US EPA method 524 or equivalent), semi-volatiles (US EPA method 525 or equivalent, and pesticides (US EPA method 608 or equivalent). For surface water and leachate samples to be screened once off and thereafter as required by the Agency.
- Note 4. Appropriate biological methods (such as EPA Q-Rating System used for the assessment of rivers and streams).
- Note 5. If there is evidence of bacterial contamination, the analysis at upgradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.



## **F.5 Groundwater Monitoring**

Monitoring Locations:

Groundwater Monitoring Locations	EASTING	NORTHING
BH1	182710	70212
BH2	182419	70222
BH3	182521	70527
BH4	182693	70368
Private Wells	To be agreed with the Agency	

The frequency of sampling and analysis is listed in the Table F.4.1.

Private Wells within 500m of the facility to be agreed in advance with the Agency as required by Condition 9.8 of this licence.



## **F.6 Leachate Monitoring**

Table F.6.1 Leachate Monitoring Locations.

In the former(now restored) landfill area and in each leachate collection manholes of the landfill (as they are constructed and operational) as shown in Drawing No.J /1 Rev.B (November 1998) of information submitted 30 November 1998 and in the leachate storage lagoon.

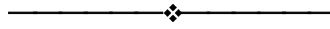
Monitoring Locations:

Leachate Monitoring Locations	EASTING	NORTHING
<b>Restored Landfill Area:</b>		
C1	182476	70394
C2	182407	70484
C3	182523	70503
<b>Current Landfill Area:</b>		
One monitoring location for each cell of each phase	Locations to be advised to the Agency	
Leachate Storage Lagoon(L1)	Refer to Drawing No. J/1 Rev.B	

Table F.6 Leachate Monitoring Locations and Frequency

Monitoring Medium	Parameters	Frequency		Monitoring Points
		Operational	Aftercare	
Leachate	Leachate levels and freeboard in leachate storage lagoon	Continuous (Telemetry)	Weekly	In each cell of the landfill and in the leachate lagoon. <sup>Note1</sup>
	Leachate composition analysis as per Table F.4.2	As per Table F.4.2	At half the frequency specified in Table F.4.2 with a minimum of once per annum	Each cell of the landfill. <sup>Note1</sup>

Note 1: Proposals for leachate monitoring in the former landfill area and in the lined cells of the existing landfill area to be agreed with the Agency



### F.7 Monitoring of leachate Tankered to Waste Water Treatment Plant

**Emission Point Reference No:** WO22

**Location:** Leachate Storage Lagoon(s)

Table F.7.1 -Leachate Tankered to Waste Water Treatment Plant(WWTP) Parameters /Frequency

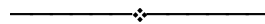
Parameter	Monitoring Frequency	Analysis Method/Technique <sup>Note 1</sup>
<b>Volume</b>	Each load discharged to WWTP	Flow meter / recorder
<b>pH</b>	Daily	pH meter/recorder
<b>Temperature</b>	Daily	Standard Method
<b>Ammoniacal nitrogen</b>	Weekly	Standard Method
<b>Biochemical Oxygen Demand</b>	Weekly	Standard Method
<b>Chemical Oxygen Demand</b>	Weekly	Standard Method
<b>Sulphates</b>	Weekly	Standard Method
<b>Suspended Solids</b>	Weekly	Gravimetric

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

### F.8 Ecological Monitoring

Parameter	Monitoring Frequency	Method/
<b>Ecological Monitoring</b>	Annual	See Note 1

Note 1. Ecological monitoring of the site and adjoining habitats including sediments including methods to be agreed in advance with the Agency as required by Condition 9.14.



## F.9 Meteorological Monitoring

The frequency of sampling and analysis is listed in the Table F.9:

**Monitoring Location:** At a location to be agreed with the Agency (Condition 9.10).

Table F.9 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



## SCHEDULE G :Emission Limits

**G.1 Noise Emissions** At Noise Sensitive Locations (4 No.) to be agreed in advance with the Agency.

Day dB(A) $L_{eq}$ (30 minutes)	Night dB(A) $L_{eq}$ (30 minutes)
55	45

**G.2 Dust Deposition** Measured at the dust monitoring points D1, D2, D3, D4 and D5 in Figure 1 of Attachment C.1 of information submitted 19 Jan 1998.

Level (mg/m <sup>2</sup> /day) <sup>Note 1</sup>
350

Note 1: 30 day composite sample with the results expressed as mg/m<sup>2</sup> /day.

**G.3 (a) Landfill Gas Emission Limits** measured in any building on at or adjacent to the facility

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

Note 1: Criteria for operation to be submitted to the Agency in advance for agreement.

Note 2 : 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.3 Emission Limits from Landfill Gas Flare<sup>(Note1)</sup> and Landfill Gas Utilisation Plant<sup>(Note 1)</sup>**

Emission Point reference no's: to be agreed in advance with the Agency

Location: Landfill Gas Flare and Landfill Gas Utilisation Plant location of which to be agreed in advance with the Agency.

Volume to be emitted from each stack of flare unit and utilisation plant 3000m<sup>3</sup>/hr

Minimum discharge height for each stack : 5m

Parameter	Emission Limit Value	
	Landfill Gas Flare	Landfill Gas Utilisation Plant
Nitrogen oxides as (NO <sub>2</sub> )	200mg/m <sup>3</sup>	500 mg/m <sup>3</sup>
CO	50 mg/m <sup>3</sup>	650 mg/m <sup>3</sup>
Particulates		130 mg/m <sup>3</sup>
TA Luft Organics Class I <sup>(Note 2)</sup>		20 mg/m <sup>3</sup> (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II <sup>(Note2)</sup>		100 mg/m <sup>3</sup> (at mass flows > 2 kg/hr)
TA Luft Organics Class III <sup>(Note 2)</sup>		150 mg/m <sup>3</sup> (at mass flows > 3kg/hr)
Hydrocarbons	20 mg/m <sup>3</sup>	
Hydrogen Chloride		50 mg/m <sup>3</sup> (at mass flows > 0.3 kg/h)
Hydrogen Fluoride		5 mg/m <sup>3</sup> (at mass flows > 0.05 kg/h)

Note 1: Criteria for operation to be submitted to the Agency in advance for agreement.

Note 2 : In addition to the above individual limits, the sum of the concentrations of Class I, II and III shall not exceed the Class III limit.



**G.4 Leachate Tankered to Wastewater Treatment Plant**

**Volume to be emitted:** Maximum in any one day: 40m<sup>3</sup>/day  
 Maximum rate per hour: 3m<sup>3</sup>/hour

Parameter	Limit  (all units in mg/l except pH and Temperature and apply to Grab Samples)
pH	4.5-7.5
BOD	1,000
COD	5,000
Ammoniacal nitrogen (NH <sub>4</sub> -N)	1,500
Suspended Solids	100
Sulphates (as SO <sub>4</sub> )	300



**SCHEDULE H :Waste Types**

Waste Type <sup>Note 1</sup>	Maximum Quantity (Tonnes per Annum)
Household	68,200
Commercial	21,400
Sewage Sludge	3,600
Construction and Demolition	13,800
Industrial Non-hazardous Sludges	5,200
Industrial Non-hazardous	7,800
<b>Total</b>	<b>120,000</b>

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

**Given** by the Agency on the 30<sup>th</sup> day of December 1999.

**Signed on behalf of the said Agency** \_\_\_\_\_  
 on the 30<sup>th</sup> day of December 1999 **B. Sheehan** **Authorised Person**