



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

WASTE LICENCE
LANDFILL FOR NON-HAZARDOUS WASTE

PROPOSED DECISION OF A REVIEW OF A LICENCE

Waste Licence

Application

Register Number: 2-2

Applicant: Cork County Council

Location of Facility: Ballyguyroe Landfill, Ballyguyroe North,
Mallow, County Cork

Mallow, County Cork.

INTRODUCTION

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

This licence is for the continued management, restoration and aftercare of Ballyguyroe Landfill. Waste acceptance ceased at the landfill in September 2001. Final capping works were completed in 2002.

A leachate collection and storage system and landfill gas collection and management system is provided at the facility.

The licensee must manage and operate the facility to ensure that the activities do not cause environmental pollution. The licensee is required to carry out regular environmental monitoring and submit all monitoring results and a range of reports on the operation and management of the facility to the Agency.

The licence sets out in detail the conditions under which Cork County Council will operate and manage this facility.

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DECISION & REASONS FOR THE DECISION

Reasons for the Decision

On the basis of the information before it, the Environmental Protection Agency (the Agency) is satisfied, for the reasons set out in the following Schedule of Activities Licensed, that the requirements of Section 40(4) of the Waste Management Act 1996 have been complied with in respect of the application for a waste licence for the activities listed hereunder in Part I.

In reaching this decision the Agency has considered the application and supporting documentation received from the applicant and the report of its inspector.

INTERPRETATION

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Act 1996 (the Act), unless otherwise defined in this section.

Adequate lighting	20 lux measured at ground level.
Agreement	Agreement in writing.
Annually	At approximately twelve monthly intervals.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
Application	The application by the licensee for this waste licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
BAT	Best Available Techniques as defined in Article 2(11) of Council Directive 96/61/EC concerning integrated pollution prevention and control.
CEN	Comité Européen de Normalisation – European Committee for Standardisation
Condition	A condition of this licence.
Containment boom	A boom which can contain spillages and prevent them from entering drains or watercourses.
Daytime	0800 hrs to 2200 hrs.
Documentation	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
Emergency	Those occurrences defined in Condition 9.4.
Emission Limits	Those limits, including concentration limits and deposition levels established in <i>Schedule C: Emission Limits</i> , of this licence.

European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC and any subsequent amendment published in the Official Journal of the European Community.
Hours of Operation	The hours during which the facility is authorised to be operational.
Incident	The following shall constitute an incident for the purposes of this licence:- <ul style="list-style-type: none"> a) An emergency; b) Any emission which does not comply with the requirements of this licence; c) Any trigger level specified in this licence which is attained or exceeded; d) Any indication that environmental pollution has, or may have, taken place.
Inert waste	Waste that does not undergo any significant physical, chemical 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.
Landfill	Refers to the area of the facility where the waste is disposed of by placement on the ground or on other waste.
Landfill Gas	Gases generated from the landfilled waste.
LEL (Lower Explosive Limit)	The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.
Licence	A waste licence issued in accordance with the Acts.
Licensee	Cork County Council.
List I/II Organics	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC.
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter. Any waste tankered to the facility.
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Monthly	A minimum of 12 times per year, at approximately monthly intervals.
Night-time	2200 hrs to 0800 hrs.
Recyclable Materials	Those waste types, such as cardboard, batteries, gas cylinders, etc which may be recycled.
Quarterly	At approximately three monthly intervals.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.

Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% dry matter.
SOP	Standard Operating Procedure
Specified Emissions	Those emissions listed in <i>Schedule C: Emission Limits</i> , of this licence.
Specified Engineering Works	Those engineering works listed in <i>Schedule B: Specified Engineering Works</i> , of this licence.
TOC	Total Organic Carbon
Trigger Level	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
EPA Working Day	Refers to the following hours: 0900 hrs to 1730 hrs Monday to Friday inclusive.

Part I: Schedule of Activities Licensed

On the basis of the information before it, the Agency, pursuant to its powers under Section 46(2) of the Waste Management Act 1996, proposes to grant this Waste Licence to Cork County Council to carry on the waste activities, that are the subject of Waste Licence Application Register Number 2-2, listed below at Ballyguyroe Landfill, Ballyguyroe North, Mallow, County Cork subject to 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 4	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons: This activity is limited to the collection of leachate and contaminated water pending its disposal at another appropriate facility.
Class 13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced: This activity is limited to the temporary storage of leachate and contaminated water pending its disposal at another appropriate facility.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Act 1996

Class 4	Recycling or reclamation of other inorganic materials: This activity is limited to the introduction on-site of any inorganic material for capping or restoration purposes with the prior agreement of the Agency.
Class 10	The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system: This activity is limited to the spreading of waste on the site for the benefit of the land with the prior agreement of the Agency.

PART II CONDITIONS

CONDITION 1 SCOPE OF THE LICENCE

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and authorised by this licence.
- 1.2. For the purposes of this licence, the facility is the area of land outlined in red on Drawing No. L2-1-9 entitled "Site Plan of Ballyguyroe Landfill Site" of the application. Any reference in this licence to "facility" shall mean the area thus outlined in red.
- 1.3. 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.
- 1.4. No waste shall be disposed of at this facility. Small amounts of waste may be accepted for recovery at the facility subject to the constraints listed in *Schedule A: Waste Acceptance* of this licence.
- 1.5. Where the Agency considers that a non-compliance with any condition of this licence has occurred, it may serve a notice on the licensee specifying.
 - 1.5.1 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.
 - 1.5.2 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 permission is received from the Agency.
- 1.6. Every plan, programme or proposal submitted to the Agency for its 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 and shall notify the licensee in writing of any such modification or alteration. Every such 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. Every such plan, programme or proposal agreed by the Agency shall be covered by the conditions of this licence.
- 1.7. This licence is being granted in substitution for the waste licence granted to the licensee on 22nd December 1999 and bearing Waste Licence Register No: 2-1. The previous waste licence (Register No: 2-1) is superseded by this licence.

REASON: To clarify the scope of this licence.

CONDITION 2 MANAGEMENT OF THE FACILITY

- 2.1 Facility Management
 - 2.1.1 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 nominated, suitably qualified and experienced, deputy shall be present at all times during the operation of the facility. On the satisfactory commissioning of the permanent automated leachate pumps, a high level liquid alarm in the leachate storage lagoon, a continuous conductivity meter in the south drain and landfill gas flare system and associated remote call-out warning system, the

presence of the facility manger or deputy shall be reduced to two days per week or as otherwise agreed by the Agency.

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

2.2 Management Structure

2.2.1 Any change in the management structure shall be notified in advance in writing to the Agency. 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, in particular the name of the facility manager and any nominated deputies;
- b) Details of the responsibilities for each individual named under a) above; and
- c) Details of the relevant education, training and experience held by each of the persons nominated under a) above.

2.3 Environmental Management System (EMS)

2.3.1 The licensee shall maintain an EMS. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

2.3.2 The EMS shall include as a minimum the following elements.

2.3.2.1 Schedule of Environmental Objectives and Targets

The objectives should be specific and the targets measurable. The schedule shall address a five-year period as a minimum. The schedule shall include a time-scale for achieving the objectives and targets and shall comply with any other written guidance issued by the Agency.

2.3.2.2 Environmental Management Plan (EMP)

The EMP shall include, as a minimum, the following: -

- a) The items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency;
- b) Methods by which the objectives and targets will be achieved and the identification of those responsible for achieving those objectives and targets; and
- c) Any other items required by written guidance issued by the Agency.

2.3.2.3 Corrective Action Procedures

The Corrective Action Procedures shall detail the corrective actions to be taken should any of the procedures detailed in the EMS not be followed.

2.3.2.4 Awareness and Training Programme

The Awareness and Training Programme shall identify training needs, for personnel who work in or have responsibility for the licensed facility.

2.4 Communications Programme

- 2.4.1 The licensee shall maintain a Communications Programme to ensure that members of the public can obtain information at all reasonable times, concerning the environmental performance of the facility.

REASON: To make provision for the proper 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 FACILITY INFRASTRUCTURE

- 3.1 The licensee shall establish all infrastructure referred to in this licence as required by the conditions of this licence.

3.2 Specified Engineering Works

- 3.2.1 The licensee shall submit proposals for all Specified Engineering Works, as defined in *Schedule B: Specified Engineering Works*, of this licence, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.

- 3.2.2 All specified engineering works shall be supervised by a competent person(s) and that person, or persons, shall be present at all times during which relevant works are being undertaken.

- 3.2.3 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 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) Drawings and sections showing the location of all samples and tests carried out;
- e) Daily record sheets/diary;
- f) Name(s) of contractor(s)/individual(s) responsible for undertaking the specified 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 to resolve those problems; and
- i) Any other information requested in writing by the Agency.

3.3 Facility Notice Board

- 3.3.1 The licensee shall maintain a Facility Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm.

- 3.3.2 The board shall clearly show:

- a) The name and telephone number of the facility;
- b) That the landfill is not open to accept waste for disposal;
- c) The name of the licence holder;

- d) An emergency out of hours contact telephone number;
- e) The licence reference number; and
- f) Where environmental information relating to the facility can be obtained.

3.4 Facility Security

3.4.1 Security and stockproof fencing and gates shall be maintained at the facility boundary. The base of the fencing shall be set in the ground.

3.4.2 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.

3.5 Facility Roads and Hardstanding

3.5.1 Effective site roads shall be maintained to ensure the safe movement of vehicles within the facility.

3.6 Facility Office

3.6.1 The licensee shall maintain an office at the facility. The office shall be maintained in a manner suitable for the processing and storing of documentation.

3.7 Wheel cleaner

3.7.1 A wheel cleaner shall be used by all vehicles leaving the facility as required to ensure that no process water or waste is carried off-site, unless otherwise agreed by the Agency. All water from the wheel cleaning area shall be directed to the waste water interceptor.

3.8 Wastewater Treatment Plant

3.8.1 The licensee shall maintain a Wastewater Treatment plant at the facility for the treatment of domestic wastewater arising on-site. Any percolation area shall satisfy the criteria set out in the *Wastewater Treatment Manual, Treatment Systems for Single Houses*, published by the Environmental Protection Agency.

3.9 Tank and Drum Storage Areas

3.9.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein.

3.9.2 All 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.

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

3.9.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area. The integrity and water tightness of all the bunds and their resistance to penetration by water or other materials stored therein shall be confirmed by the licensee and shall be reported to the Agency following its installation and prior to its use as a storage area. This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.

3.10 Leachate Management Infrastructure

- 3.10.1 The licensee shall provide and maintain leachate management infrastructure at the facility. This infrastructure shall provide for the collection of leachate from Cells 1 to 7 and its storage in a leachate lagoon prior to removal off-site to an agreed wastewater treatment plant.
- 3.10.2 Permanent and automated leachate pumps shall be provided and maintained as shown in Drawing W003/10 entitled 'Location of Automated Leachate Pumps' of the application for the pumping of leachate to the leachate lagoon. A spare pump shall be provided at the facility in the event of a breakdown. The pumps shall be maintained in accordance with the manufacturer's instructions.
- 3.10.3 Leachate levels in the waste shall not exceed a level of 1.0m over the base of Cells 1 to 7.
- 3.10.4 A high level liquid alarm shall be provided and maintained at the leachate lagoon. In the event that the alarm is activated, the leachate pumps shall shut-down and a remote call-out warning system shall operate.

3.11 Landfill Gas Management

- 3.11.1 The licensee shall provide and maintain landfill gas infrastructure for the active collection and flaring of landfill gas at the facility.
- 3.11.2 The flare shall be of an enclosed type design and the combustion air supply shall be controlled so as to achieve a minimum temperature of 1000°C and 0.3 seconds retention time at this temperature. Flare unit efficiency shall be annually.
- 3.11.3 In the event that the flare ceases to operate, then a remote call-out warning system shall operate.
- 3.11.4 The licensee shall maintain all gas venting wells, pipework, valves, pumps, flares and other infrastructure that forms part of the landfill gas management scheme in a safe and fully operational manner.
- 3.11.5 All buildings constructed on the facility shall have regard to the guidance given in the Department of Environment 1994 publication "Protection of New Buildings and Occupants from Landfill Gas" and any subsequent revisions.

3.12 Surface Water Management

- 3.12.1 Effective surface water management infrastructure shall be provided and maintained at the facility during restoration and aftercare of the facility.
- 3.12.2 A continuous conductivity monitor shall be provided and maintained on the south drain at monitoring point V2 as shown on Drawing No. W003/1C entitled 'Sampling and Monitoring Points 2003' of the application. This shall be set at a trigger level of 1000µs/cm. In the event that this trigger level is reached, then the leachate pumps shall switch off and a remote call-out warning system shall operate.
- 3.12.3 Within six months from the date of grant of this licence, the licensee shall submit to the Agency for agreement a proposal for a surface water settling pond at the facility. As a minimum, this proposal shall provide for the collection and diversion of run-off arising from capped and restored areas to a surface water settling pond.

3.13 Groundwater Management

- 3.13.1 Effective groundwater management infrastructure shall be provided and maintained at the facility during restoration and aftercare of the facility. As a minimum, the infrastructure shall be capable of the following:-

- a) The protection of the groundwater resources from pollution by the waste activities; and
- b) The protection of other infrastructure, such as the liner, from any adverse effects caused by the groundwater.

3.14 Monitoring Infrastructure

- 3.14.1 Monitoring infrastructure which is damaged or proves to be unsuitable for its purpose shall be replaced within three months of it being damaged or recognised as being unsuitable.

REASON: To provide appropriate infrastructure for the protection of the environment.

CONDITION 4 RESTORATION AND AFTERCARE

- 4.1. Within six month from the date of grant of this licence, the licensee shall submit to the Agency for its agreement an update of the implementation of the landscape programme previously submitted on 22/09/00 and 28/02/01 and agreed by the Agency.

4.2. Final Capping

- 4.2.1. The final capping shall consist of the following:-

- a) Top soil (150 -300mm);
- b) Subsoils, such that total thickness of top soil and subsoils is at least 1m;
- c) Drainage layer of 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-4} m/s;
- d) Compacted mineral layer of a minimum 0.6m thickness with a permeability of less than 1×10^{-9} m/s or a geosynthetic material (e.g. GCL) or similar that provides equivalent protection; and
- e) Gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.

- 4.3. No material or object that is incompatible with the proposed restoration of the facility shall be present within one metre of the final soil surface levels.

- 4.4. Where tree planting is to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Combined topsoil and subsoil depths shall be a minimum of 1m.

4.5. Soil Storage

- 4.5.1. All soils shall be stored to preserve the soil structure for future use.

REASON: To provide for the restoration of the facility.

CONDITION 5 FACILITY OPERATION AND WASTE MANAGEMENT

5.1 Waste Acceptance and Characterisation Procedures

- 5.1.1 The licensee shall maintain written procedures for the acceptance and handling of any waste accepted for recovery at the facility.

- 5.2 Any wastes not suitable for acceptance shall be removed for recovery or disposal at an appropriate alternative facility.

5.3 Operational Controls

- 5.3.1 Wastes shall not be excavated, disturbed or otherwise picked over only with the prior agreement from the Agency.
- 5.3.2 Any element of the final capping material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced with materials as outlined in Condition 4.2 and to a timeframe agreed by the Agency.
- 5.3.3 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.
- 5.3.4 Gates shall be locked shut when the facility is unsupervised.
- 5.3.5 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.3.6 Fuels shall be stored only at appropriately banded locations on the facility.
- 5.3.7 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.3.8 No smoking shall be allowed on the facility other than in the facility office.

5.4 Leachate Management

- 5.4.1 The frequency of leachate removal/discharge from the leachate lagoon shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoon at all times.
- 5.4.2 Leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers to Charleville waste water treatment plant unless otherwise agreed by the Agency.
- 5.4.3 Recirculation of leachate or other contaminated water shall not be undertaken at the facility unless agreed by the Agency.
- 5.4.4 The licensee shall maintain Leachate Handling Procedures for the handling of leachate on the facility and during removal from the lagoon and subsequent transport/discharge to the Waste Water Treatment Plant.

5.5 Maintenance

- 5.5.1 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.
- 5.5.2 All lagoon structures on the facility shall be inspected and certified fit for purpose every three years by an independent and appropriately qualified chartered engineer.
- 5.5.3 The licensee shall maintain and clearly label and name all sampling and monitoring locations.
- 5.5.4 The wheel cleaner shall be inspected on a weekly basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel cleaner and disposed of at an appropriate facility.

REASON: To provide for appropriate operation of the facility to ensure protection of the environment.

CONDITION 6 EMISSIONS

- 6.1. No specified emission from the facility shall exceed the emission limit values set out in *Schedule C: Emission Limits*, of this licence. There shall be no other emissions of environmental significance.
- 6.2. 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.
- 6.3. Landfill Gas
 - 6.3.1. The following are the trigger levels for landfill gas emissions from the facility measured in any service duct or manhole 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; or
 - b) Carbon dioxide, greater than or equal to 1.5% v/v.
 - 6.3.2. 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 flare:

Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen.
 - 6.3.3. Emission limits for emissions from landfill gas flare to atmosphere in this licence shall be interpreted in the following way.
 - 6.3.3.1. Continuous monitoring
 - a) No 24 hour mean value shall exceed the emission limit value;
 - b) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value; and
 - c) No 30 minute mean value shall exceed twice the emission limit value.
 - 6.3.3.2. Non-Continuous Monitoring
 - a) 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;
 - b) For all other parameters, no 30 minute mean value shall exceed the emission limit value; and
 - c) For flow, no hourly or daily mean value shall exceed the emission limit value.
- 6.4. Groundwater
 - 6.4.1. There shall be no direct emissions to groundwater.
 - 6.4.2. Within six months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement, groundwater monitoring trigger levels in accordance with the requirements of Directive 1999/31/EC for the following boreholes: 98-1, 96-5 and 96-3 as shown on Drawing No. W003/1C entitled 'Sampling and Monitoring Points 2003' of the application.

6.5. Emissions to Surface Water

- 6.5.1. No raw leachate, treated leachate or contaminated surface water shall be discharged to the River Farahy catchment.
- 6.5.2. No substance shall be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish.
- 6.5.3. The following is the trigger level for conductivity for surface water discharges at monitoring point V2 as shown on Drawing No. W003/1C entitled 'Sampling and Monitoring Points 2003' of the application:
- a) 1000 µs/cm.
- 6.5.4 Emission limit values for emissions to waters in this licence shall be interpreted in the following way:
- a) Continuous monitoring.
No flow value shall exceed the specified limit.
 - b) Non-Continuous monitoring.
Eight out of ten consecutive results, calculated as daily mean concentration or mass emission values on the basis of flow proportional composite sampling shall not exceed 1.2 times the emission limit value.
 - c) No grab sample shall exceed 1.2 times the emission limit value.

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

CONDITION 7 NUISANCE CONTROL

- 7.1 The licensee shall ensure that vermin, birds, flies, mud, dust, noise, litter and odours do not give rise to nuisance at the facility or in the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution.
- 7.2 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.
- 7.3 All loose litter or other waste, placed on or in the vicinity of the facility, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working day after such waste is discovered.

REASON: To provide for the control of nuisances.

CONDITION 8 MONITORING

- 8.1 The licensee shall carry out such monitoring and at such locations and frequencies as set out in *Schedule D: Monitoring*, of this licence and as specified in this licence. Unless otherwise specified by this licence, all environmental monitoring shall commence no later than two months after the date of grant of this licence.
- 8.2 The licensee shall amend the frequency, locations, methods and scope of monitoring as required by this licence 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.

- 8.3 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, discharge or environmental parameter.
- 8.4 The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.
- 8.5 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 drawings showing all the monitoring locations that are stipulated in this licence. The drawing shall include the twelve figure National Grid Reference for the various monitoring points.
- 8.6 Groundwater Monitoring
- 8.6.1 Subject to the agreement of the well owners, all private wells within 500m upgradient and downgradient of the facility shall be included in the monitoring programme set out in *Schedule D: Monitoring*, of this licence.
- 8.7 Settlement Survey
- 8.7.1 The licensee shall undertake an annual survey of settlement at the facility.
- 8.8 Stability Assessment
- 8.8.1 The licensee shall undertake an annual stability assessment of the side slopes at the facility.
- 8.9 Nuisance Monitoring
- 8.9.1 The licensee shall, at weekly intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust, noise and odours.

REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions.

CONDITION 9 CONTINGENCY ARRANGEMENTS

- 9.1. In the event of an incident 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 arising therefrom;
 - c) Isolate the source of any such 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; and
 - f) Provide a proposal to the Agency for its agreement within one month of the incident occurring to:
 - a) Identify and put in place measures to avoid reoccurrence of the incident;
 - b) Identify and put in place any other appropriate remedial action.
- 9.2. The licensee shall submit an updated written Emergency Response Procedure (ERP) for the facility within three months from the date of grant of the licence for agreement. The ERP shall address

any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment. This shall include a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities. The Fire Authority shall be consulted by the licensee during this assessment.

- 9.3. 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.
- 9.4. Emergencies
- 9.4.1. 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.
- 9.4.2. No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.
- 9.4.3. In the event that monitoring of local wells indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an emergency and the licensee shall provide an alternative supply of water to those affected.
- 9.4.4. In the event that monitoring of the slide slopes of the facility indicate that there may be a risk of slope failure this will be treated as an emergency.

REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions.

CONDITION 10 RECORDS

- 10.1 The licensee shall keep the following documents at the facility office or other approved location:
- a) The current waste licence relating to the facility;
 - b) The current EMS for the facility;
 - c) The previous year's AER for the facility; and.
 - d) All written procedures produced by the licensee which relate to the licensed activities.
- 10.2 The licensee shall maintain a written record for each load of waste for recovery arriving at the facility. The licensee shall record the following:
- a) The date;
 - b) The name of the carrier (including if appropriate, the waste carrier registration details);
 - c) The vehicle registration number;
 - d) The name of the producer(s)/collector(s) of the waste as appropriate;
 - e) The name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
 - f) A description of the waste including the associated EWC codes;
 - g) The quantity of the waste, recorded in tonnes;
 - h) The name of the person checking the load; and
 - i) 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.

10.3 Written Records

The following written records shall be maintained by the licensee:

- a) The types and quantities of waste recovered at the facility each year. These records shall include the relevant EWC Codes;
- b) All training undertaken by facility staff;
- c) Results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;
- d) Details of all nuisance inspections and any actions taken as a result of a nuisance being identified; and
- e) The names and qualifications 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.

10.4 The licensee shall maintain a written record of all complaints relating to the operation of the facility. 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.

10.5 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 date and time of removal of leachate from the facility;
- c) The volume of leachate, in cubic metres, removed from the facility on each occasion;
- d) The name and address of the Waste Water Treatment Plant to which the leachate was transported; and
- e) Any incidents or spillages of leachate during its removal or transportation.

EASON: To provide for the keeping of proper records of the operation of the facility.

CONDITION 11 REPORTS AND NOTIFICATIONS

11.1 Unless otherwise agreed by the Agency, all reports and notifications submitted to the Agency shall:

- a) Be sent to the Agency's Regional Inspectorate in Cork;
- b) Comprise one original and four copies unless additional copies are required;
- c) Be formatted in accordance with any written instruction or guidance issued by the Agency;
- d) Include whatever information as is specified in writing by the Agency;
- e) Be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;
- f) Be submitted in accordance to the relevant reporting frequencies specified by this licence, such as in *Schedule E: Recording and Reporting to the Agency*, of this licence;

- g) Be accompanied by a written interpretation setting out their significance in the case of all monitoring data; and
- h) Be transferred electronically to the Agency's computer system if required by the Agency.

11.2 In the event of an incident occurring on the facility, the licensee shall:

- a) Notify the Agency as soon as practicable and in any case not later than 1000 hrs the following working day after the occurrence of any incident;
- b) Submit a written record of the incident, including all aspects described in Condition 9.1(a-e), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident;
- c) In the event of any incident which relates to discharges to surface water, notify the Southern Regional Fisheries Board as soon as practicable and in any case not later than 1000 hrs on the following working day after such an incident; and
- d) Should any further actions be taken 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.

11.3 Annual Environmental Report

11.3.1 The licensee shall submit to the Agency for its agreement, by 31st March of each calendar year, an Annual Environmental Report (AER).

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

REASON: To provide for proper reports to and notifications to the Agency.

CONDITION 12 CHARGES AND FINANCIAL PROVISIONS

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €10,536.68 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 2005 and subsequent years, not later than January 31st of each year, pay to the Agency this amount updated in accordance with changes in the Public Sector Average Earnings Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2004, the licensee shall pay a pro rata amount from the date of this licence to 31st December. This amount shall be paid to the Agency within one month of the date of grant of this licence.

12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased the licensee shall contribute such sums as determined by the Agency to defraying its costs in regard to items not covered by the said annual contribution.

12.2 Financial Provision for Closure, Restoration and Aftercare

- 12.2.1 The licensee shall from a date to be set by the Agency establish and maintain a fund, or provide a written guarantee, that is adequate to assure the Agency that the licensee is at all times financially capable of implementing the Restoration and Aftercare Plan required by Condition 4. The type of fund established and means of its release/recovery shall be agreed by the Agency prior to its establishment.
- 12.2.2 Any fund established shall be maintained in an amount always sufficient to underwrite the current Restoration and Aftercare Plan.
- 12.2.3 The licensee shall revise the cost of restoration and aftercare annually and any details of the necessary adjustments to the fund or guarantee must, within two weeks of the revision, be forwarded to the Agency for its agreement. Any adjustment agreed by the Agency shall be effected within four weeks of said written agreement.
- 12.2.4 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 restoration and aftercare cost

ECOST = Existing 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 Acceptance

Table A.1: Waste Categories and Quantities

Waste Type	Maximum
Inert waste or other waste agreed in advance by the Agency.	Small quantities for recovery e.g. for re-profiling of final cap or for improvement of topsoil. To be agreed in advance by the Agency.

SCHEDULE B : Specified Engineering Works

Specified Engineering Works
Installation of landfill gas management infrastructure.
Installation of leachate management infrastructure.
Installation of surface water management infrastructure.
Any other works notified in writing by the Agency.

SCHEDULE C : Emission Limits

C.1 Landfill Gas Concentration Limits Measured in any building on or adjacent to the facility.

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

C.2 Surface Water Discharge Limits: Measured at SS2 and SS5.

Level (Suspended Solids mg/l)
35

C.3 Emission Limits Values for Landfill Gas Plant

Emission Point Reference numbers: (to be agreed by Agency in advance)

Volume to be emitted: 3000m³/hr (unless results from modelling suggests otherwise)

Minimum discharge height: 5m (unless results from modelling suggests otherwise)

Parameter	Flare (enclosed) Emission Limit Value ^{Note 1}
Nitrogen oxides (NO _x)	150 mg/m ³
CO	50 mg/m ³
Total VOCs	10 mg/m ³
Hydrogen Chloride	50 mg/m ³ (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m ³ (at mass flows > 0.05 kg/h)

Note 1: Dry gas referenced to 3% oxygen by volume for flares.

SCHEDULE D : Monitoring

D.1 Monitoring Locations

Monitoring locations shall be those as set out in Table D.1.1 and Drawing No. W003/1C entitled 'Sampling and Monitoring Points 2003' of the application.

Table D.1.1 Monitoring Locations

Landfill Gas	Surface Water	Ground Water	Leachate
Stations	Stations	Stations	Stations
1 location per cell within waste	RS1 and RS2	98-1d, 02-1s (upgradient)	Leachate Lagoon (composition and level)
GS1 – GS12 inclusive	SS2, SS5, V2	96-5s and 96-5d 96-3s and 96-3d	3 leachate level monitoring locations per cell
Office and canteen.	4 biological monitoring locations - RS1, RS2, RS2A & RS4	99-1s and 99-1d G18	
Inlet and outlet of flare		96-4s and 96-4d	

D.2 Landfill Gas

Table D.2.1 Landfill Gas Monitoring Parameters, Frequency and Technique

Parameter	Monitoring Frequency		Analysis Method ^{Note1} /Technique ^{Note2}
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH ₄) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO ₂) % v/v	Monthly	Weekly	Infrared analyser/ flame ionisation detector
Oxygen(O ₂) % v/v	Monthly	Weekly	Electrochemical cell
Atmospheric Pressure	Monthly	Weekly	Standard
Temperature	Monthly	Weekly	Standard

Note 1: All monitoring equipment used should be intrinsically safe.

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

D.3 Meteorological Monitoring

Table D.3.1 Meteorological Monitoring: At a location to be agreed by the Agency.

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily, added to monthly values	Standard
Temperature (min/max.)	Monthly average	Standard
Evaporation	Daily, added to monthly values	Standard
Evapotranspiration ^{Note 1}	Daily, added to monthly values	Standard
Humidity	Monthly average	Standard
Atmospheric Pressure ^{Note 1}	Monthly	Standard

Note 1: Monitoring frequency for these parameters may be decreased with the agreement of the Agency.

D.4 Surface Water, Groundwater and Leachate

Table D.4.1 Water and Leachate - Parameters / Frequency

PARAMETER ^{Note 1}	SURFACE WATER ^{Note 2}	GROUNDWATER	LEACHATE ^{Note 3}
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Weekly	Quarterly	Annually
Groundwater Level	Not Applicable	Quarterly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Weekly
Ammonia as N	Quarterly	Quarterly	Annually
BOD	Quarterly	Not Applicable	Annually
COD	Quarterly	Not Applicable	Annually
Chloride	Quarterly	Quarterly	Annually
Dissolved Oxygen	Quarterly	Not applicable	Not Applicable
Electrical Conductivity	Quarterly ^{Note 3}	Quarterly	Annually
pH	Quarterly	Quarterly	Annually
Total Suspended Solids	Quarterly ^{Note 4}	Not Applicable	Not Applicable
Temperature	Quarterly	Quarterly	Quarterly
Metals / non metals ^{Note 5}	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
List I/II organic substances ^{Note 6}	Once off ^{Note 7}	Annually ^{Note 7}	Once off ^{Note 7}
Mercury	Annually	Annually	Annually
Sulphate	Annually	Annually	Annually
Total Alkalinity	Annually	Annually	Not applicable
Total P/orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Annually	Annually
Total Organic Carbon	Not Applicable	Quarterly	Not Applicable
Residue on evaporation	Not Applicable	Annually	Not Applicable
Total and Faecal Coliforms ^{Note 8}	Not applicable	Annually	Not applicable
Biological Assessment	Annually ^{Note 9}	Not Applicable	Not Applicable

Note 1: All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures.

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

Note 3: Continuous at sampling location V2.

Note 4: Monthly at sampling locations SS2 and SS5.

Note 5: Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.

Note 6: Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).

Note 7: 2 surface water locations (RS1 and RS2), 3 groundwater locations (98-1 d/s, 96-5 d/s, 96-3 d/s) and 1 leachate location (leachate lagoon) for these parameters.

Note 8: 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.

Note 9: Appropriate biological methods (such as EPA Q-Rating System) to be used for the assessment of rivers and streams.

D.5 Landfill Gas Enclosed Flare

Location: Enclosed flare.

Table D.5.1 Landfill Gas Enclosed Flare Parameters and Monitoring Frequency

Parameter	Flare (enclosed) Monitoring Frequency	Analysis Method ^{Note1} /Technique ^{Note2}
Inlet		
Methane (CH ₄) % v/v	Continuous	Infrared analyser/flame ionisation detector/thermal conductivity
Carbon dioxide (CO ₂) % v/v	Continuous	Infrared analyser/thermal conductivity
Oxygen (O ₂) % v/v	Continuous	Electrochemical/thermal conductivity
Total Sulphur	Annually	Ion chromatography
Total Chlorine	Annually	Ion chromatography
Total Fluorine	Annually	Ion Selective Electrode
Process Parameters		
Combustion Temperature	Continuous	Temperature Probe/datalogger
Retention Time	Annually	By calculation.
Outlet		
CO	Continuous	Flue gas analyser/datalogger
NO _x	Annually	Flue gas analyser
SO ₂	Annually	Flue gas analyser
Total VOCs	Annually	Flame ionisation
Hydrochloric acid	Annually	Impinger /Ion Chromatography
Hydrogen fluoride	Annually	Impinger /Ion Chromatography

Note 1: All monitoring equipment used should be intrinsically safe.

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

SCHEDULE E : Recording and Reporting to the Agency

Report	Reporting Frequency ^{Note1}	Report Submission Date
Environmental Management System Updates	Annually	As part of the AER.
Annual Environment Report	Annually	By 31 st March of each calendar year.
Record of incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	Prior to use and one month after end of the three year period being reported on.
Specified Engineering Works	As they arise	Prior to the works commencing.
Monitoring of Landfill Gas	Annually	One month after the period being reported on.
Monitoring of Surface Water	Annually	One month after the period being reported on.
Monitoring of Groundwater	Annually	One month after the period being reported on.
Monitoring of Leachate	Annually	One month after the period being reported on.
Meteorological Monitoring	Annually	Annually as part of the AER.
Settlement & slope stability monitoring	Annually	Annually as part of the AER.
Any other monitoring	As they occur	Within ten days of obtaining results.

Note 1: Unless altered at the request of the Agency.

SCHEDULE F : Content of the Annual Environmental Report

Annual Environmental Report Content

Reporting Period.

Waste activities carried out at the facility.

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

Summary report on emissions.

Meteorological summary report.

Summary of results and interpretation of environmental monitoring.

Resource and energy consumption summary.

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

Report on development works undertaken during the reporting period, and a timescale for 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.

Settlement and slope stability monitoring report.

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

Estimated annual and cumulative quantity of indirect emissions to groundwater.

Annual water balance calculation and interpretation.

Environmental Management System Updates.

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

Schedule of Environmental Objectives and Targets for the forthcoming year.

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.

Review of Nuisance Controls.

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

Report on training of staff.

Any other items specified by the Agency.

Signed on behalf of the said Agency
on the 5th day of February, 2004

Patrick J. Nolan **Authorised Person**