Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

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

REVIEW OF A WASTE LICENCE
RECOMMENDED DECISION
LANDFILL FOR NON-HAZARDOUS WASTE

Waste Licence Register No:	W0025-03
Licensee:	Carlow County Council
Location of Facility:	Powerstown Landfill, Powerstown, County Carlow

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 operation and development by Carlow County Council of a non-hazardous waste landfill at Powerstown, County Carlow. The facility is limited to accepting 40,000 tonnes of waste per annum for disposal at the landfill. No hazardous, liquid or asbestos wastes may be disposed of at the landfill.

The licensee is required to manage & operate the facility to ensure that the activities do not cause environmental pollution. The licensee is required to carry out regular monitoring and to keep records of results and details of facility operations for submission to/inspection by the Agency.

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

Table of Contents

Page No.

REASONS FOR THE DECISION 1

INTERPRETATION 1

PART I ACTIVITIES LICENSED 5

PART II CONDITIONS 8

CONDITION 1 SCOPE OF THE LICENCE 7

CONDITION 2 MANAGEMENT OF THE FACILITY 8

CONDITION 3 FACILITY INFRASTRUCTURE 10

CONDITION 4 RESTORATION AND AFTERCARE 16

CONDITION 5 FACILITY OPERATION AND WASTE MANAGEMENT 17

CONDITION 6 EMISSIONS 21

CONDITION 7 NUISANCE CONTROL 23

CONDITION 8 MONITORING 24

CONDITION 9 CONTINGENCY ARRANGEMENTS 25

CONDITION 10 RECORDS 26

CONDITION 11 REPORTS AND NOTIFICATIONS 28

CONDITION 12 CHARGES AND FINANCIAL PROVISIONS 30

SCHEDULE A : Waste Acceptance 33

SCHEDULE B : Specified Engineering Works 33

SCHEDULE C : Emission Limits 34

SCHEDULE D : Monitoring 35

SCHEDULE E : Recording and Reporting to the Agency 40

SCHEDULE F : Compost Quality 41

SCHEDULE G : Content of the Annual Environmental Report 43

DECISION & REASONS FOR THE DECISION

Reasons for the Decision

The Environmental Protection Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence, any emissions from the activity will comply with and will not contravene any of the requirements of Section 40(4) of the Waste Management Acts 1996 to 2008.

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

INTERPRETATION

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Acts 1996 to 2008, (the Acts), unless otherwise defined in this section.

Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Adequate lighting	20 lux measured at ground level.
Agreement/agreed	Agreement/agreed 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 Technology as defined in Number 27 of 2003 Protection of the Environment Act, 2003.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
Biodegradable municipal waste (BMW)	The biodegradable component of municipal waste, not including bio-stabilised residual waste. Biodegradable municipal waste is typically composed of food and garden waste, wood, paper, cardboard and textiles.
Bio-stabilised residual waste	Residual biodegradable municipal waste that has been treated to achieve an EPA-approved biodegradability stability standard (as defined in this licence) prior to landfilling or alternative use agreed.
CEN	Comité Européen De Normalisation – European Committee for Standardisation.
Characterisation of waste	The sampling and analysis of waste to determine, amongst other things, its nature and composition, including the proportions of biodegradable, recyclable and other materials in the waste.

Classification of waste	The classification of waste as inert, non-hazardous or hazardous for the purpose of article 4 of Council Directive (1999/31/EC) on the landfill of waste.
Coding of waste	The allocation of a European Waste Catalogue/Hazardous Waste List code and a concise/standardised description of the waste, including information on the source of the waste, e.g. municipal, industrial, construction and demolition etc.
Condition	A condition of this licence.
Construction and Demolition Waste	All wastes which arise from construction, renovation and demolition activities.
Containment boom	A boom which can contain spillages and prevent them from entering drains or watercourses.
Cover material	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials; or other cover material the use of which has been agreed by the Agency.
Daily Cover	Is the term used to describe material spread (about 150mm if soil cover is used) over deposited waste at the end of each day. Synthetic materials may also be used. Its objective is to minimise odour, the amount of litter generated and to control flies and access to the waste by birds and vermin. Where soils are used for daily cover, it is recommended that they be removed at the start of the day and subsequently reused as much as possible.
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.
EIS	Environmental Impact Statement submitted as part of application.
Emergency	Those occurrences defined in Condition 9.4.
Emission Limits	Those limits, including concentration limits and deposition levels established in *Schedule C: Emission Limits,* 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 94/3/EC and any subsequent amendment published in the Official Journal of the European Community.
Fortnightly	A minimum of 24 times per year, at approximately two week intervals.
Green waste	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
Hours of Operation	The hours during which the facility is authorised to be operational.
Hours of Waste Acceptance	The hours during which the facility is authorised to accept waste.
Incident	The following shall constitute an incident for the purposes of this

	licence: a) an emergency; b) any emission which does not comply with the requirements of this licence; c) any exceedance of the daily duty capacity of the waste handling equipment; d) any trigger level specified in this licence which is attained or exceeded; and, e) 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.
Initial Development Works	Means such works, actions or constructions as may be specified, which for the purposes of environmental protection and safe construction and operation of the facility, have to be carried out in the initial stages of site development, and in any case prior to the commencement of construction of the landfill cells.
Intermediate Cover	Refers to placement of material (*minimum 300mm if soil is used*) for a period of time prior to restoration or prior to further disposal of waste.
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	Carlow 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.
LLDPE	Linear low density polyethylene.
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Mobile Plant	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
Monthly	A minimum of 12 times per year, at approximately monthly intervals.
Municipal solid waste (MSW)	Household waste as well as commercial and other waste, which, because of its nature or composition, is similar to household waste.

	Excluding municipal sludges and effluents.
Night-time	2200 hrs to 0800 hrs.
Noise Sensitive Location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
OMP	Odour Management Plan
Quarterly	At approximately three monthly intervals.
Recyclable Materials	Those waste types, such as cardboard, batteries, gas cylinders, etc which may be recycled.
Residual waste	The fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
SCADA system	Supervisory Control and Data Acquisition system.
Sludge	The accumulation of solids resulting from industrial processes, or from biological, chemical coagulation, flocculation and/or sedimentation processes associated with water or wastewater treatment, with >2% dry matter.
SOP	Standard Operating Procedure.
Specified Emissions	Those emissions listed in *Schedule C: Emission Limits,* of this licence.
Specified Engineering Works	Those engineering works listed in *Schedule B: Specified Engineering Works,* of this licence.
TOC	Total Organic Carbon.
Treated Sludge	Sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as significantly to reduce its fermentability and the health hazards resulting from its use.
Treatment/pre-treatment	In relation to waste, any manual, thermal, physical, chemical or biological processes that change the characteristics of waste in order to reduce its volume or hazardous nature or facilitate its handling, disposal or recovery.
Trigger Level	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
Wastewater	Foul water from facility buildings.
White Goods	Refrigerators, cookers, ovens and other similar appliances.
EPA Working Day	Refers to the following hours: 0900 hrs to 1730 hrs Monday to Friday inclusive.

Working Face	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.

Part I: Schedule of Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2008, the Environmental Protection Agency (the Agency) hereby proposes, under Section 46(8) of the said Acts, to grant this Waste Licence to Carlow County Council, Athy Road, Carlow to carry on the waste activities listed below at Powerstown Landfill, Powerstown, Co. Carlow subject to conditions, with the reasons therefore and the associated schedules attached thereto set out in the licence. For the purpose of Article 48 of the Waste Management (Licensing) Regulations 2004 (SI No. 395) this facility is classed as a non-hazardous landfill.

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2008

Class 1	**Deposit on, in or under land (including landfill):** This activity is limited to the disposal of non-hazardous waste at the facility.
Class 4	**Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons:** This activity is limited to the storage of leachate/collected surface water in lagoon(s)/retention ponds.
Class 5	**Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment:** This activity is limited to the disposal of non-hazardous waste into lined cells.
Class 6	**Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule:** This activity is limited to the biological treatment of wastewater generated on site.
Class 7	**Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule:** This activity is limited to the removal of grit from leachate in the leachate lagoon(s).
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 storage of waste in receptacles and designated areas prior to disposal on or off site.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2008

Class 2	**Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):** This activity is limited to the composting of green waste from households and the collection of wastes at the civic waste facility.
Class 3	**Recycling or reclamation of metals and metal compounds:** This activity is limited to the collection of wastes at the civic waste facility.
Class 4	**Recycling or reclamation of other inorganic materials:** This activity is limited to the collection of waste at the civic waste facility and re-use of construction and demolition waste at the facility as capping or on site road material.
Class 9	**Use of any waste principally as a fuel or other means to generate energy:** This activity is limited to the use of landfill gas for the generation of electricity/energy.
Class 11	**Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:** This activity is limited to the use of compost generated on site in restoration works.
Class 13	**Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced:** This activity is limited to the storage of waste in receptacles and designated areas prior to recovery on or off site.

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. 2003-120-01-004 – *"Site Location Map with 250m boundary offset"* 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 Acts 1996 to 2008 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. Municipal Waste, Commercial Waste, Industrial Waste, treated sewage sludge and Construction & Demolition waste may be recovered and disposed of at the facility subject to the maximum quantities and other constraints listed in *Schedule A: Waste Acceptance*, of this licence.

1.5. Waste Acceptance Hours and Hours of Operation

1.5.1. Landfill

1.5.1.1. Waste may be accepted at the facility for disposal at the landfill only between the hours of 0800 and 1730 Monday to Friday inclusive (Bank Holidays excepted) and 0800 and 1230 on Saturdays.

1.5.1.2. The landfill at the facility may be operated only during the hours of 0700 and 1830 Monday to Friday inclusive (Bank Holidays excepted) and 0700 and 1330 on Saturdays. Activities between 0700 and 0800 shall be limited to:

- Visual inspections;
- Use of the CWF;
- Litter patrols; and
- Equipment/plant maintenance.

1.5.1.3. Treated sewage sludge shall be accepted at the facility only between the hours of 0830 hrs and 1400 hrs Monday to Friday inclusive.

1.5.2. Civic Waste Facility

1.5.2.1. Waste shall be accepted at the Civic Waste Facility only between the hours of 0800 and 1730 Monday to Friday inclusive (Bank Holidays excepted), 0800 and 1630 on Saturdays and 0800 and 1230 on Sundays.

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 11th April 2005 and bearing Waste Licence Register No: W0025-02. The previous waste licence (Register No: W0025-02) 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 on the facility at all times during its operation.

2.1.2 The Civic Waste Facility shall be supervised by an appropriately qualified and competent person at all times while waste may be accepted.

2.1.3 Both the facility manager and deputy, and any replacement manager or deputy, shall successfully complete both the FAS Waste Management Training Programme (or equivalent agreed by the Agency) and associated on site assessment appraisal within twelve months of appointment.

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

2.2 Management Structure

2.2.1 The licensee shall maintain onsite written details of the management structure of the facility. Any proposed replacement 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 licensee shall prepare and maintain a Schedule of Environmental Objectives and Targets. The schedule shall, as a minimum, provide for a review of all operations and processes, including an evaluation of practicable options, for energy and resource efficiency, the use of cleaner technology (including emissions prevention/reduction), and the beneficial recovery/recycling of waste in subsequent landfill engineering operations. The schedule shall include time frames for the achievement of set targets and shall address a five-year period as a minimum. The schedule shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

The licensee shall ensure insofar as practicable that environmental objectives and targets are met according to the stated schedule.

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 Within 12 months of date of grant of this review, the operator shall prepare, operate and maintain a Landfill Environmental Management Plan (LEMP) covering aspects not covered by condition 2.3.2.2. This Plan shall have regard to the guidance set out in EPA publications. A copy of this plan shall be submitted to the Agency in advance of commencement of waste disposal activities. The LEMP shall be regularly reviewed (at least annually) in light of operational experiences at the facility, the stage of development of the facility (active, closure, aftercare), evolving legislative and BAT requirements, as well as any Agency instructions that may issue, with updates notified to the EPA as part of the AER.

2.3.2.4 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.

2.3.2.5 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 the facility, at all reasonable times, concerning the environmental performance of the facility.

2.5.1 Resource Use and Energy Efficiency

2.5.1 The licensee shall carry out an audit of the energy efficiency of the site within one year of the date of grant of this licence. The audit shall:-

(i) identify all opportunities for energy use reduction and efficiency;

(ii) be carried out in accordance with the guidance published by the Agency - "Guidance Note on Energy Efficiency Auditing"; and

(iii) be repeated at intervals as required by the Agency.

The recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2.3.2.1 above.

2.5.2 The licensee shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into the Schedule of Environmental Objectives and Targets.

2.5.3 The licensee shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity. Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets.

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. To provide for the efficient use of resources and energy in all site operations.

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. All infrastructure in place at the facility shall be maintained and operated until such time as it is replaced or otherwise subject to the prior agreement of the Agency.

3.2 Phased Construction Plan

3.2.1 Prior to the commencement of site developments, the licensee shall submit to the Agency for its agreement a construction schedule, sequence and timescale (Construction Plan) incorporating the requirements of this licence. This Plan shall have regard to the following development phases: (i) Initial Development Works (ii) Main infrastructure development works (pre acceptance of waste for disposal at the facility extension), and (iii) Future/planned works (in parallel with waste disposal, e.g. future cell development/phasing). The Construction Plan for cell development shall have regard to the sequencing necessary to provide medium and long term screening of the completed cells.

3.3 Specified Engineering Works

3.3.1 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.

3.3.2 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.

3.3.3 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.

3.4 Facility Notice Board

3.4.1 The licensee shall provide and 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.

3.4.2 The board shall clearly show:-

a) The name and telephone number of the facility;

b) The normal hours of opening;

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.

3.5 Facility Security

3.5.1 Security and stockproof fencing and gates shall be installed and maintained as described in Section 2.3.1 of the EIS. The base of the fencing shall be set in the ground. Subject to the implementation of the restoration and aftercare plan and to the agreement of the Agency, the requirement for such site security may be removed.

3.5.2 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.

3.6 Facility Roads and Hardstanding

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

3.6.2 The facility entrance area, the access road to the Civic Waste Facility, the Civic Waste Facility itself and the Recycling Area shall be paved and maintained in accordance with the specifications detailed in Section 2.3.1 of the EIS and Drawing No. 2003-120-01-011 – "Proposed Ancillary Details" (Article 14 response dated 23/03/04) prior to the acceptance of waste at the extended facility.

3.7 Facility Office

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

3.7.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.

3.8 Waste Inspection and Quarantine Areas

3.8.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.

3.8.2 These areas 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 clearly identified and segregated from each other.

3.8.3 Drainage from these areas shall be directed to the leachate lagoon as detailed in Section 2.3.10 of the EIS.

3.9 Weighbridge and Wheel Cleaner

3.9.1 The licensee shall provide and maintain a weighbridge and a wheel cleaner at the facility.

3.9.2 The 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. All water from the wheel

cleaning area shall be directed to the leachate lagoon as detailed in Section 2.3.7 of the EIS.

3.10 Waste Water Treatment Plant

3.10.1 The licensee shall provide and maintain a Wastewater Treatment plant at the facility for the treatment of 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.

3.11 Tank and Drum Storage Areas

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

3.11.2 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.

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

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

3.11.5 Bunds should be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004). 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. Existing bunds shall be similarly tested on a three-year cycle until such time as no longer in use.

3.12 Landfill Lining

3.12.1 Unless otherwise agreed by the Agency, the landfill lining system shall comprise:-

a) 1.0 m thick bentonite enhanced soil (BES) layer with a maximum permeability of 1×10^{-10} m/s overlain by;

b) 2.5 mm thick HDPE liner;

c) A geocomposite drainage geotextile ("leak detection/collection layer");

d) 2.5 mm thick HDPE liner;

e) Protective geotextile (Polyfelt TS40);

f) 500 mm thick granular layer (min. permeability K > 1 x 10-3 m/s) including leachate collection drains; and

g) The side wall liner to be as per the specification detailed in Drawing No. 2003-120-01-005.

3.12.2 The liner detailed design and its construction shall be in accordance with the guidelines provided in the Agency's *Landfill Manual, Landfill Site Design.*

3.12.3 Formation levels of the cells shall be as shown on Figures 4.3 & 4.4 of the EIS subject to the base of the cells having a minimum slope of 1:50.

3.13 Leachate Management Infrastructure

3.13.1 Leachate management infrastructure shall be provided and maintained at the existing facility as described in Article 14 response (No.1) dated 23/03/04 unless where otherwise required by conditions of this licence.

3.13.2 Prior to the use of Cells 15-18 the licensee shall install leachate management infrastructure to provide for the abstraction/collection of leachate as specified in Section 2.6 of the EIS and in Article 14 responses (No. 1, 2 & 6) dated 23/03/04. This shall include the installation of a leachate lagoon in accordance with the specifications detailed in Article 14 response (No.2) dated 23/03/04.

All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping. The existing leachate lagoon, shall be enclosed within nine months of the date of grant of this licence.

3.13.3 In conjunction with the final cap installation over the unlined landfill area, as required by this licence, the licensee shall provide leachate collection toe drains or alternative agreed with the Agency to facilitate the diversion/collection of leachate from this area towards the leachate lagoon(s).

3.14 Landfill Gas Management

3.14.1 The licensee shall provide and maintain infrastructure for the active collection and flaring and/or utilisation of landfill gas generated at the facility. This shall include

- vertical landfill gas collection wells at a maximum of 40m intervals throughout the various parts of the landfill (lined and unlined areas).
- An enclosed landfill gas flare(s) and/or landfill gas utilisation plant of sufficient overall capacity to flare/utilise all landfill gas generated. As a minimum, and unless otherwise agreed with the Agency, the landfill gas flaring capacity at the facility shall provide for an overall flaring capacity of 750m^3/hr along with suitable backup provisions in the event of equipment breakdown.

Flare unit efficiency shall be tested once it is installed and once every three years thereafter.

3.14.2 Passive landfill gas management shall be carried out in new cells until such time as it is possible to flare the landfill gas. Passive vents shall be fitted with effective activated carbon filters unless a suitable alternative is agreed by the Agency.

3.14.3 The licensee shall provide passive vent trenches along the perimeter of the unlined landfill adjacent to the facility boundary as part of the initial works for permanently capping this area.

3.14.4 The combustion air supply to the enclosed gas flare shall be controlled so as to achieve a minimum temperature of 1,000°C and 0.3 seconds retention time.

3.14.5 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.

3.14.6 Landfill Gas Combustion Plant

The licensee shall provide and maintain continuous carbon monoxide monitors on the outlets of the gas engine(s).

3.15 Surface Water Management

3.15.1 Effective surface water management infrastructure shall be provided and maintained at the facility during construction, operation, restoration and aftercare of the facility. As a minimum, the infrastructure shall be capable of the following:-

a) The prevention of contaminated water and leachate discharges into surface water drains and courses; and

b) The collection diversion of run off arising from capped and restored areas.

3.15.2 Prior to the commencement of on-site construction works at the proposed facility extension the licensee shall install and have operational a surface water retention ("settling") pond and associated infrastructure capable of dealing with all surface water arising on site where there is a potential for it to become contaminated. Unless agreed otherwise with the Agency this shall provide for such surface waters arising from the existing facility.

3.15.3 The design and capacity of the surface water retention pond shall ensure that it is capable of fulfilling the requirements of this licence and dealing with all surface water run off from potentially contaminated areas of the facility. The surface water retention pond shall be constructed and maintained at the location shown in Drawing No. 2003-120-01-002 Rev. B – *"Site Layout"*, unless otherwise agreed by the Agency.

3.15.4 The surface water from all roads, hardstanding areas and all areas of the facility where surface water has the potential to become contaminated shall be directed to the surface water retention pond, unless where otherwise required to be directed to the leachate lagoon(s).

3.15.5 The surface water retention pond shall include those provisions as specified in Section 2.3.12 of the EIS (to include a Class I Full Oil Interceptor).

3.16 Groundwater Management

3.16.1 Effective groundwater management infrastructure shall be provided and maintained at the facility during construction, operation, 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.

3.17 Civic Waste Facility

3.17.1 Prior to the acceptance of waste for disposal at the landfill extension (Cells 15-18), the licensee shall provide and maintain a Civic Waste Facility.

3.17.2 This facility shall be as detailed in Article 14 response (No.2) dated 23/03/04 including Drawings No. 2003-120-01-09 & 2003-120-01-10. The licensee shall provide and maintain the receptacles detailed therein unless agreed otherwise by the Agency.

3.17.3 Drainage from the lower level shall be directed to the leachate lagoon as described in Article 14 response (No.2) dated 23/03/04.

3.18 Compost facility

3.18.1 Appropriate infrastructure for the composting of waste shall be established and maintained at the facility prior to any waste being composted. This infrastructure shall at a minimum comprise of that detailed in Article 14 response (No.4) dated 23/03/04 and such that drainage from the composting area is directed to the leachate lagoon as detailed therein.

3.19 Landscaping

3.19.1 Landscaping of the facility as described in Section 9.5.3 of the EIS shall be carried out as set out therein to include, prior to commencement of waste activities at the facility extension, the installation of berms and associated planting at the facility as detailed in Article 16 response (No.9) dated 1st June 2004.

3.20 Buffer Area

3.20.1 The licensee shall maintain the 50m buffer zone around the landfill extension (Cells 15-18) and within the facility as referred to in Sections 3.3.1 & 8.10 of the EIS at which no waste activity shall be carried out, with the exception of the existing adjacent landfill area.

3.21 External Access Road

3.21.1 No waste activity shall be carried out at the facility extension until such time as the proposed new access route is developed in accordance with Sections 2.3.4 & 2.3.11 of the EIS unless where otherwise subject to planning requirements.

3.22 Telemetry

3.22.1 The licensee shall install and maintain a telemetry system at the facility. This system shall include for:-

a) Recording of leachate levels in the lined cells and lagoon;

b) Recording of levels in the surface water lagoon and flows to the perimeter streams;

c) Quality of the surface water at the inlet to the surface water lagoons and being discharged to the perimeter streams;

d) Permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility; and

e) Leakage into leak detection/collection layer.

3.22.2 All facility operations linked to the telemetry system shall also have a manual control which will be reverted to in the event of break in power supply or during maintenance.

3.23 Monitoring Infrastructure

3.23.1 Landfill Gas

a) The licensee shall install perimeter landfill gas monitoring boreholes at maximum 40m intervals around the periphery of the landfill facility, subject to the agreement of landowners, if necessary; and

b) The licensee shall provide and maintain an effective permanent gas monitoring system in the site office and any other enclosed structures at the facility.

3.23.2 Groundwater

a) The licensee shall install and maintain all monitoring points as referred to in *Table D.1.1* of *Schedule D: Monitoring* of this licence, to allow for the sampling and analyses of groundwater.

3.23.3 Replacement of Infrastructure

a) 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. The licensee shall restore the facility on a phased basis. The Restoration and Aftercare Plans for the facility shall include the plan submitted in Attachment G and Section 2.12.14 of the EIS unless where otherwise required under conditions of this licence.

4.2. Unless otherwise agreed by the Agency, filled cells shall be permanently capped within 24 months of the cells having been filled to the required level.

4.3. The final profile/height of the facility

4.3.1. The final profile of the facility shall be based on that shown in Drawing No. 2003-120-01-012 – *"Proposed Final Contours"* subject to the maximum slopes on the extended areas being no greater than 1 in 3.

4.3.2. The maximum final height of the facility shall be 64.0 mOD Malin.

4.4. Final Capping

4.4.1. Unless otherwise agreed with the Agency, 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 $1x10^{-4}$ m/s or an equivalent geosynthetic layer;

d) Compacted mineral layer of a minimum 0.6m thickness with a permeability of less than $1x10^{-9}$ 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.

In the case of the unlined landfill area, in addition to the above, the compacted mineral layer shall be augmented by a 1mm flexible membrane layer, such as LLDPE.

4.5. 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.

4.6. 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.

4.7. The restoration of the landfill facility shall be completed within 12 months of completion of final capping at the landfill facility.

4.8. Soil Storage

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

4.9 A final validation report to include a certificate of completion for the Restoration and Aftercare Plan, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

REASON: To provide for the restoration of the facility.

CONDITION 5 FACILITY OPERATION AND WASTE MANAGEMENT

5.1 Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency. Waste shall not be deposited at the facility extension a) prior to the completion of capping works specified under Condition 4.2 to the satisfaction of the Agency and b) without the prior agreement of the Agency.

5.2 Waste Acceptance and Characterisation Procedures

5.2.1 Waste shall only be accepted at the facility from local authority waste collection or transport vehicles or holders of waste permits, unless exempted or excluded, issued under the Waste Management (Collection Permit) Regulations 2007. Copies of these waste collection permits must be maintained at the facility.

5.2.2 Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) shall not be disposed of at the facility. Shredded tyres shall not be disposed of at the facility.

5.2.3 No hazardous wastes, liquid wastes or asbestos wastes shall be disposed of at the facility.

5.2.4 Within one month of the date of grant of this licence, the licensee shall submit to the Agency for its agreement updated written procedures for the acceptance and handling of all wastes. These procedures shall include details of the treatment of all waste to be carried out in advance of acceptance at the facility and shall also include methods for the characterisation, classification and coding of waste. The procedures shall have regard to Council Decision (2003/33/EC) establishing the criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II to Directive (1999/31/EC) on the landfill of waste.

5.2.5 No waste which in the conditions of the landfill, is explosive, corrosive, oxidising, highly flammable or flammable as defined in EU Council Directive 91/689/EEC shall be accepted at the landfill.

5.3 Waste Treatment

5.3.1 Only waste that has been subject to treatment shall be accepted for disposal at the landfill facility.

(i) Treatment shall reflect published EPA technical guidance as set out in *Municipal Solid Waste – Pre-treatment and Residuals Management*, EPA, 2009.

(ii) With the agreement of the Agency, this condition shall not apply to:

- inert wastes for which treatment is not technically feasible;
- other waste for which such treatment does not contribute to the objectives of the Landfill Directive as set out in Article 1 of the Directive by reducing the quantity of the waste or the hazards to human health or the environment.

5.4 Gypsum wastes shall not be placed in any landfill cell accepting biodegradable waste.

5.5 The dilution or mixture of waste solely in order to fulfil relevant waste acceptance criteria established under Condition 5.2.4 is prohibited.

5.6 Limit on acceptance of biodegradable municipal waste

5.6.1 Unless otherwise specified by the Agency, the following limits shall apply:

(i) For the calendar years 2010, 2011 and 2012, a maximum of 40% by weight of municipal solid waste (MSW) accepted for disposal to the body of the landfill shall comprise biodegradable municipal waste (BMW),

(ii) For the calendar years 2013, 2014 and 2015, a maximum of 24% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW, and

(iii) For the calendar year 2016 and thereafter, a maximum of 15% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW,

unless an alternative has been agreed in writing by the Agency in accordance with condition 5.6.2.

5.6.2 Two or more licensed landfills may seek the agreement of the Agency that collectively they will arrange to comply with condition 5.6.1. Any agreements entered into become part of this licence. In seeking agreement the following factors, as a minimum, shall be addressed in any proposal submitted to the Agency:

- BAT;
- age, intake rate and life expectancy of the facility;
- waste intake characterisation;
- potential for odour generation;
- proximity to sensitive receptors
- capacity of landfill gas and leachate infrastructure; and
- consideration of any potential environmental impact or change to operational practices.

5.7 Determination of biodegradable municipal waste content of municipal waste

5.7.1 The licensee shall determine the biodegradable municipal waste content of MSW accepted at the landfill. Waste that has been bio-stabilised in accordance with condition 5.7.4 shall not be considered BMW.

5.7.2 Bio-stabilised residual wastes meeting the requirements of Condition 5.7.4 received at the landfill facility may be included in the determination of MSW quantities accepted at the facility for the purposes of Condition 5.7.1.

5.7.3 In determining BMW content, the licensee shall use approved calculation factors for BMW content of municipal waste streams published by the EPA. With the agreement of the EPA, alternative factors can be used if they have been determined following waste characterisation carried out in accordance with EPA-approved characterisation protocols including, where appropriate, the use of EPA-approved contractors.

5.7.4 In the case of bio-stabilised residual wastes, stabilisation means the reduction of the decomposition properties of the waste to such an extent that offensive odours are minimised and that the respiration activity after four days (AT_4) is <10mg O_2/g DM until 1 January 2016 and <7mg O_2/g DM thereafter.

5.7.5 Bio-stabilised residual wastes shall be monitored in accordance with Schedule D9.

5.7.6 Waste that was accepted to the body of the landfill as stabilised waste, but subsequently is found not to meet the stabilisation standard set out in Condition 5.7.4 shall be notified to the Agency and included in the calculation of BMW accepted to the body of the landfill when assessing compliance with Condition 5.6.1. In the event of failure to meet the stabilisation standard, each and every load of bio-stabilised residual waste accepted from the failed source, following receipt of the failed test result, shall be tested, notwithstanding the testing frequency set out in Schedule D9, until otherwise agreed with the Agency.

5.7.7 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with Conditions 5.3.1 and 5.6.1, which shall be available for inspection by Agency personnel.

5.8 All waste shall be checked at the working face. Any waste deemed unsuitable for acceptance at the facility and/or in contravention of this licence shall be immediately separated and removed from the facility at the earliest possible time. Temporary storage of such wastes shall be in a designated Waste Quarantine Area. Waste shall be stored under appropriate conditions in the quarantine area to avoid putrefaction, odour generation, the attraction of vermin and any other nuisance or objectionable condition.

5.9 Working Face

5.9.1 Unless the prior agreement of the Agency is given, 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.

5.9.2 All waste deposited at the working face shall be compacted, using a steel wheeled compactor, and covered as soon as is practicable and at any rate prior to the end of the working day.

5.9.3 The working face, or faces, shall each day at the end of the day, be covered with suitable material.

5.10 Daily and Intermediate Cover

5.10.1 Bio-stabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 5.7.4, and complies with any requirements of the Department of Agriculture, Fisheries, and Food relating to the management of animal by-products and has been agreed in advance with the Agency.

5.10.2 Any cover material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.

5.10.3 The licensee shall ensure that appropriate cover material shall be placed and maintained across the whole landfill so that no waste, other than the following is exposed:-

a)Waste suitable for specified engineering works; and

b)Waste on the working face during the operational hours of the facility.

5.11 Operational Controls

5.11.1 The landfill shall be filled in accordance with the numerical sequence outlined in the application unless otherwise agreed or directed by the Agency.

5.11.2 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.

5.11.3 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 leachate, surface water and gas collection systems unless with the prior agreement from the Agency.

5.11.4 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.

5.11.5 Scavenging shall not be permitted at the facility.

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

5.11.7 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.

5.11.8 Fuels shall be stored only at appropriately bunded locations on the facility.

5.11.9 All tanks and drums shall be labelled to clearly indicate their contents.

5.11.10 No smoking shall be allowed on the facility.

5.12 Waste Handling

5.12.1 Sludges

5.12.1.1 Sewage sludge shall be subject to treatment and must achieve a minimum solids content of 17% prior to acceptance at the facility. All sewage sludge shall be covered immediately with other waste.

5.12.2 Compost

5.12.2.1 The licensee shall maintain procedures for operation of the green waste composting facility as may be agreed with the Agency. The procedures shall include as a minimum measures for waste acceptance, nuisance control, surface water management, monitoring of composting process, monitoring of leachate generated within the compost area, monitoring of end product of composting process and proposed end uses of the compost.

5.12.2.2 In order not to be considered a waste, compost produced by the facility shall comply with the quality standards established in *Schedule F: Compost Quality,* of this licence. Analysis of the compost shall be in accordance with the requirements of that Schedule.

5.13 Off-site Disposal and Recovery

5.13.1 Waste sent off-site for recovery or disposal shall be conveyed only by a waste contractor agreed by the Agency.

5.13.2 All waste transferred from the facility shall be transferred only to an appropriate facility agreed by the Agency.

5.13.3 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.

5.14 Civic Waste Facility

5.14.1 The Civic Waste Facility shall be used only by private vehicles. The facility shall not be used as a transfer station for disposal of waste by commercial waste disposal contractors or local authority waste collection vehicles.

5.14.2 All waste deposited in the Civic Waste Facility shall be either:-

a) Into a skip;

b) Into the hopper of a compactor for disposal;

c) Into a receptacle for recovery; and

d) In the case where inspection is required, into a designated inspection area.

5.14.3 The licensee shall assign and clearly label each container at the Civic Waste Facility to indicate their contents.

5.14.4 At the end of the working day the ground around the Civic Waste Facility shall be cleared of waste.

5.14.5 Unless where alternative arrangements for disposal are agreed in advance by the Agency, all waste accepted at the Civic Waste Facility for disposal on-site shall

be removed from the Civic Waste Facility before the end of the working day and disposed of in the landfill.

5.15 Leachate Management

5.15.1 Leachate levels in the waste shall not exceed a level of 1.0m over the top of the liner at the base of the landfill.

5.15.2 The SCADA system referred to in Section 2.6.1 of the EIS shall be used to monitor leachate levels in lined cells and leakage into the leak detection/collection layer.

5.15.3 The frequency of leachate removal from leachate lagoon(s) shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoon(s) at all times.

5.15.4 Leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers.

5.15.5 Recirculation of leachate or other contaminated water shall not be undertaken without the prior agreement of the Agency and, in any case, shall be undertaken only within cells which have been lined to the satisfaction of the Agency.

5.16 Maintenance

5.16.1 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.

5.16.2 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 and also in the case of new structures prior to use.

5.16.3 The licensee shall maintain and clearly label and name all sampling and monitoring locations.

5.16.4 The wheel-wash shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel-wash and disposed of at the working face or to a skip.

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; and

b) In the case of landfill gas combustion plant:

Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.

6.3.3. Emission limits for emissions from landfill gas flare/combustion plant 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 sample 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 The licensee shall determine and agree monitoring trigger levels for groundwater in accordance with the requirements of Directive 1999/31/EC.

6.5. Emissions to Surface Water

6.5.1. No raw leachate, treated leachate or contaminated surface water shall be discharged to the Powerstown Stream.

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 licensee shall carry out continuous monitoring of water in the surface water retention pond(s). Criteria/trigger levels, which will determine when the outlet from the pond(s) shall be closed, shall be as agreed by the Agency. Such continuous monitoring shall, as a minimum, include conductivity, pH and TOC and shall be carried out on the inlet to the stormwater retention pond(s).

6.6. Disposal of Leachate

6.6.1. No leachate shall be discharged to surface water.

6.6.2. All leachate or contaminated water tankered from the facility shall be transported to Mortarstown Waste Water Treatment Plant and disposed of there unless an alternative is agreed by the Agency.

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, 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 Litter Control

7.3.1 Litter fencing and netting shall be installed and maintained around the perimeter of the active tipping area. The netting shall be kept tidy, with litter trapped in the netting removed as soon as practicable.

7.3.2 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting 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.

7.3.3 All loose litter or other waste, placed on or in the vicinity of the facility, other than in accordance with the requirements of this licences, 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.

7.3.4 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.

7.4 Dust Control

7.4.1 In dry weather, site roads and any other areas used by vehicles shall be sprayed with water as and when required to minimise airborne dust nuisance.

7.5 Prior to exiting the facility, all waste vehicles shall use the wheelwash.

7.6 Bird Control

7.6.1 Birds shall be prevented from gathering on and feeding at the facility by the use of birds of prey and/or other bird scaring techniques. The birds of prey and/or other techniques shall be in place on the facility from before dawn to after dark, until the waste activities cease and all the waste is capped to the written satisfaction of the Agency.

7.7 Vermin/Fly Control

7.7.1 The licensee shall establish and maintain a programme for the control and eradication of vermin and fly infestations at the facility, using suitably trained personnel and such methods or materials, which will not cause any nuisance at the facility or in the immediate area of the facility.

7.8 Noise Control

7.8.1 The licensee shall ensure the following;

(i) Use of low sound level plant on site;

(ii) All heavy machinery and mechanical plant used on site are fitted with acoustic panels and acoustics mufflers (exhaust silencers);

(iii) Implementation of appropriate speed restrictions on site; and

(iv) Use of suitable noise screens/control measures including the landscaping requirements specified under Condition 3.

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.

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 ensure that any waste acceptance testing and analysis required by this licence shall be carried out by competent laboratories in accordance with CEN-standards. If CEN standards are not available, ISO, national or international standards that will ensure the provision of data of an equivalent scientific quality shall apply.

8.5 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.

8.6 All landfill gas monitoring equipment, other than permanent monitoring systems within buildings, shall be certified as being intrinsically safe.

8.7 The following information shall be maintained at the facility: the names, qualifications and a summary of the relevant experience of all persons that will 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. Any proposed changes to the above shall be submitted to the Agency for its agreement.

8.8 Groundwater Monitoring

8.8.1 Subject to the agreement of the well owners, all private wells within 500m of the facility shall be included in the monitoring programme set out in *Schedule D: Monitoring,* of this licence.

8.9 Topographical Survey

8.9.1 A topographical survey shall be carried out annually. The survey shall include a measurement of the remaining available void space. The survey shall be in accordance with any written instructions issued by the Agency.

8.10 Biological Assessment

8.10.1 A biological assessment of the Powerstown Stream shall be undertaken annually. This assessment shall use appropriate biological methods such as the EPA Q-rating system for the assessment of rivers and streams. The location of monitoring points shall be agreed by the Agency.

8.11 Archaeological Assessment

8.11.1 Prior to the development of any undisturbed area, the licensee shall engage the services of a suitably qualified archaeologist, such as licensed under the National Monuments Acts (1930-1994), to monitor all topsoil stripping associated with the development.

8.11.2 In this regard the licensee shall comply with the requirements specified by The Heritage Section of the Department of the Environment, Heritage and Local Government (at the time Dúchas) in correspondence dated 23/01/03 regarding the application. The report specified shall also be submitted to the Agency.

8.12 Stability Assessment

8.12.1 The licensee shall carry out an annual stability assessment of the side slopes of the facility.

8.13 Nuisance Monitoring

8.13.1 The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, and dust.

8.14 Odour Monitoring

8.14.1 The licensee shall inspect the facility and its environs daily for nuisances caused by odours. This inspection shall include monitoring at the relevant locations specified in *Schedule D: Monitoring, Table D.1.1 Monitoring Locations,* of this licence. This shall incorporate the use of a FID or alternative agreed by the Agency.

8.14.2 As part of the odour control programme in place at the facility, the licensee shall carry out a monthly review of odour control measures in place at the facility. This shall include:

(i) Consideration of odour complaints received (including details and nature of the complaints, times and weather conditions);

(ii) Details of any monitoring carried out (including to validate complaints and identify the source of the complaint and actions taken, where relevant);

(iii) An update on existing landfill gas control infrastructure (including operational status, number of vents connected and not connected to the landfill gas collection system, quantity of gas collected and flared/utilised, and estimated quantity of landfill gas being produced); and

(iv) Recommendations and implementation of same.

The licensee shall maintain these reports on site and forward them to the Agency on request.

8.14.3 Unless otherwise agreed by the Agency, the licensee shall arrange for an independent odour audit of the facility on a biannual basis. The extent and timing of the audit shall be as agreed by the Agency.

8.15 Pollution Emission Register (PER)

The licensee shall prepare and maintain a PER for the site. The substances to be included in the PER shall be agreed by the Agency each year by reference to the list specified in the Agency's AER Guidance Note. The PER shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted as part of the AER.

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:-

i) Identify and put in place measures to avoid reoccurrence of the incident;

ii) Identify and put in place any other appropriate remedial action.

9.2. The licensee shall maintain an written Emergency Response Procedure (ERP). 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 firewater retention facilities. The licensee shall consult the Fire Authority during this assessment. The Emergency Response Procedure shall be reviewed annually and updated as necessary.

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 side slopes of the facility indicate that there may be a risk of slope failure this will be treated as an emergency.

9.5 The licensee shall maintain a documented Accident Prevention Policy, which will address the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.

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

CONDITION 10 RECORDS

10.1 The licensee shall keep the following documents at the facility office:-

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 arriving at the facility, excluding those arriving at the Civic Waste Facility. The licensee shall record the following:-

a) the date and time;
b) the name of the carrier (including if appropriate, the waste carrier registration details);
c) the vehicle registration number;
d) the trailer, skip or other container unique identification number (where relevant);
e) the name of the producer(s)/collector(s) of the waste as appropriate;
f) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
g) a description of the waste including the associated EWC/HWL codes;
h) the quantity of the waste, recorded in tonnes;
i) details of the treatment(s) to which the waste has been subjected;
j) the classification and coding of the waste, including whether MSW or otherwise;
k) whether the waste is for disposal or recovery and if recovery for what purpose;
l) the name of the person checking the load; and
m) 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 Notification of Reject Loads

The licensee shall, in writing, notify the Agency without delay of any waste that arrived at the facility that does not meet the waste acceptance criteria.

10.4 Written Records

The following written records shall be maintained by the licensee:-

a) The types and quantities of waste recovered and disposed of 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

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.

10.5 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.

10.6 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.

10.7 A written record shall be kept for each load of waste departing from the Civic Waste Facility. The following shall be recorded:-

a) the name of the carrier (including if appropriate, the waste carrier registration details);
b) the vehicle registration number;
c) the destination of the waste (facility name and waste licence/permit number as appropriate);
d) a description of the waste (if recovered or rejected waste, the specific nature of the waste);
e) the quantity of the waste, recorded in tonnes;
f) the name of the person checking the load; and
g) the time and date of departure.

10.8 A written record shall be kept at the facility of the programme for the control and eradication of vermin and fly infestations at the facility. These records shall include as a minimum the following:-

a) The date and time during which spraying of insecticide is carried out;
b) Contractor details;
c) Contractor logs and site inspection reports;
d) Details of the rodenticide(s) and insecticide(s) used;
e) Operator training details;
f) Details of any infestations;
g) Mode, frequency, location and quantity of application; and
h) Measures to contain sprays within the facility boundary.

10.9 The waste acceptance procedures established under Condition 5.2.4 shall provide:-

(i) For the checking of waste documentation on receipt of waste in the waste reception area;
(ii) For non pre-cleared customers, the visual inspection and testing of waste in the waste inspection area pending acceptance/rejection;
(iii) For the visual inspection of waste when deposited at the working face;
(iv) For the keeping for two months of any samples associated with on-site verification sampling of waste accepted at the facility.

10.10 The licensee shall provide a written acknowledgement (to carrier/waste contractor) of receipt of each delivery of waste to the facility (for disposal in the landfill).

REASON: 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 Headquarters;
b) Comprise one original and two 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 Reports relating to Facility Operations

11.3.1 Leachate Handling Procedures

The licensee shall submit to the Agency for its agreement prior to the use of the new leachate storage lagoon updated 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.

11.3.2 Procedures during Windy Conditions

The licensee shall maintain written procedures for the operation of the facility during windy conditions in order to militate against the occurrence of any potential nuisance.

11.4 Monitoring Locations

11.4.1 The licensee shall maintain updated appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. The drawing(s) shall include twelve figure National Grid References for the various monitoring points.

11.5 Annual Environmental Report

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

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

11.6 Waste Recovery Reports

The licensee shall as part of the Annual Environmental Report for the site submit a report on the contribution by this facility to the achievement of the waste recovery

objectives stated in Condition 2.3.2.1 and as otherwise may be stated in National and European Union waste policies and shall, as a minimum, include tonnages of the following:

(i) the recovery of Construction and Demolition Waste;

(ii) the recovery of other waste in landfill operations, including restoration;

(iii) the recovery of energy through landfill gas combustion.

11.7 Reporting to Demonstrate Compliance with Diversion Targets

The Licensee shall report to the Agency such data and records, and at such frequency, as may be specified by the Agency in order to demonstrate compliance with the requirements of Condition 5.6.1. From 1 January 2010, and unless otherwise advised by the Agency, the licensee shall submit quarterly summary reports to the Agency within one week of the end of each quarter on the quantity of MSW and BMW accepted at the landfill during the preceding quarter and on a cumulative basis for the calendar year to date. The report shall detail the tonnage of MSW and BMW accepted and the basis (including all calculation factors) on which the figures have been calculated.

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 €27,844, or such sum as the Agency from time to time determines, having regard to variations in the extent of reporting, auditing, inspection, sampling and analysis or other functions carried out by the Agency, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Waste Management Acts 1996 to 2008. The first payment shall be a pro-rata amount for the period from the date of grant of this licence to the 31st day of December, and shall be paid to the Agency within one month from the date of grant of the licence. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Waste Management Acts 1996 to 2008, and all such payments shall be made within one month of the date upon which demanded by the Agency.

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 defray~~ing~~ 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 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:-

Cost = (ECOST x WPI) + 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.

12.3 Environmental Liabilities

12.3.1 The licensee shall as part of the AER, provide an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage, and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with the carrying on of the activity.

12.3.2 The licensee shall arrange for the completion, by an independent and appropriately qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) to address the liabilities from past and present activities. A report on this assessment shall be submitted to the Agency for agreement within twelve months of date of grant of this licence. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement. The results of the review shall be notified as part of the AER.

12.3.3 As part of the measures identified in Condition 12.3.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities associated with operation (including closure and aftercare) of the facility not already covered by condition 12.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.3.1.

12.4 Cost of landfill of waste

In accordance with the provisions of Section 53A of the Waste Management Acts 1996 to 2008, the licensee shall ensure the costs involved in the setting up and operation of the facility, as well as the costs of closure and after-care (including cost of provision of financial security) for a period of at least 30 years (post closure) shall be covered by the price to be charged for the disposal of waste at the facility. The statement required under Section 53A(5) of said Acts is to be included as part of the AER.

12.5 Community Fund

The licensee shall pay €1 (Index Linked) for every tonne of waste accepted for disposal in the landfill into a secure and dedicated community support and development fund. The

licensee shall maintain a community managed charitable trust (or equivalent) to manage and discharge this fund for the benefit of the social and physical environment of the local community.

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

SCHEDULE A : Waste Acceptance

A.1 Waste Acceptance

Table A.1 Waste Categories and Quantities

Waste Type	Maximum (Tonnes Per Annum)
Household (Residual)	31,000 Note 1
Commercial	7,000
Treated Sewage Sludge	500
Construction & Demolition	1,000
Industrial Non-Hazardous Solids	500
TOTAL	40,000 Note 2

Note 1: Including a maximum of 300 tonnes/annum of green waste from households for composting at the facility, unless agreed otherwise by the Agency.

Note2: The maximum annual tonnage of individual waste types listed in Table A.1 for disposal at the landfill (treated sewage sludge excepted) may be altered subject to agreement of the Agency provided that the total maximum tonnage deposited does not exceed 40,000 tonnes per annum.

Table A.2 Total Permitted Landfill Capacity

Total quantity of waste permitted to be placed at the landfill facility (over authorised life of facility)	383,000 m^3

SCHEDULE B : Specified Engineering Works

Specified Engineering Works
Development of the facility including preparatory works and lining.
Final capping.
Installation of Civic Waste Facility.
Installation of Compost Facility.
Installation of Landfill Gas Management Infrastructure.
Installation of Leachate Management Infrastructure.
Installation of Groundwater Control Infrastructure.
Installation of Surface Water Management Infrastructure.
Any other works notified in writing by the Agency.

SCHEDULE C : Emission Limits

C.1 Noise Emissions:

(Measured at the noise sensitive locations indicated in *Table D.1.1*).

Day Db(A) L_{Aeq}(15 minutes)	Night dB(A) L_{Aeq}(15 minutes)
55	45

C.2 Landfill Gas Concentration Limits:

(Measured in any building on or adjacent to the facility).

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

C.3 Dust Deposition Limits:

(Measured at the dust monitoring points indicated in *Table D.1.1*).

Level (mg/m^2 /day) Note 1
350

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

C.4 Surface Water Discharge Limits:

Measured at the outlet from the surface water retention pond.

Level (Suspended Solids mg/l)
35

C.5 Emission Limits Values for Landfill Gas Plant

Emission Point Reference numbers: **LFGF1.**
Volume to be emitted: $3000m^3$/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	Utilisation Plant Emission Limit Value Note 1
Nitrogen oxides (NO_x)	150 mg/m^3	500 mg/m^3
CO	50 mg/m^3	650 mg/m^3
Particulates	Not applicable	130 mg/m^3
TA Luft Organics Class I (Note 2)	Not applicable	20 mg/m^3 (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II (Note 2)	Not applicable	100 mg/m^3 (at mass flows > 2 kg/hr)
TA Luft Organics Class III (Note 2)	Not applicable	150 mg/m^3 at mass flows > 3kg/hr)
Total organic carbon (TOC)	10 mg/m^3	Not applicable
Hydrogen Chloride	50 mg/m^3 (at mass flows > 0.3 kg/h)	50 mg/m^3 (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m^3 (at mass flows > 0.05 kg/h)	5 mg/m^3 (at mass flows > 0.05 kg/h)

Note 1: Dry gas referenced to 5% oxygen by volume for utilisation plants and 3% oxygen by volume for flares.
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.

SCHEDULE D : Monitoring

D.1 Monitoring Locations

Monitoring locations shall be those as set out in Table D.1.1and as referred to in the application.

Table D.1.1 Monitoring Locations

Landfill Gas within Waste and Boundary Locations	Landfill Gas Flare/Utili -sation Plant	Dust Depositi on & Odour	Noise	Surface Water	Ground Water	Leachate
Stations		**Stations**	**Stations**	**Stations**	**Stations**	**Stations**
Note 1	LFGF1 Note 4	Dust D1/D2 D4 D5 D6 Note 5	**NSL** N5 N6 S1 S2 Note 7	ST1 ST2 Note 9	RCA1 RCA2 GW3 M8(GW 4) M9(GW 5) Note 10 GW6	Levels Lagoon(s) Note 11
TP3, TP4 TP6, TP7 TP8, TP9 TP10, TP11 TP12, TP13 TP14 Note 2 TP15, TP16 TP17, TEM1 TEM2, TEM3 Note 3		Odour Note 6	On-site N4 Note 8	Inlet and Outlet to surface water retention pond	GW1 GW2 GW7 GW8	Compositi on Lagoon(s) Note 12

Note 1: Monitoring locations to include vertical gas collection wells and passive vents as referred to in Conditions 3.14 & 3.22 and also the gas collection locations (e.g. GPW17) indicated in Drawing No. 2003-120-01-0008 Rev. A – *Existing Facility*.

Note 2: Plus an additional monitoring location to be located south east of TP14 and near to the occupied dwelling and to be agreed by the Agency.

Note 3: Additional monitoring locations in accordance with Condition 3.23.

Note 4: At the location identified as "*Gas*" in Drawing No. 2003-120-01-006 Rev. B – *Existing Environmental Monitoring Point Location Map.*

Note 5: Plus two additional locations to be agreed by the Agency – one near to the proposed new entrance and occupied dwelling and one to the west of the proposed new Civic Waste Facility.

Note 6: 3 fixed locations to be agreed by the Agency and 2 locations to be chosen on the day (upwind/downwind) from a list of locations to be agreed by the Agency.

Note 7: Revised location to be to the west of proposed S2 and agreed by the Agency.

Note 8: Two additional locations to be agreed with the Agency.

Note 9: ST1 & ST2 as identified in Drawing No. 2003-120-01-007 Rev. B – *Proposed Environmental Monitoring Point Location Map* as ST(DOWN) & ST 2(UP) respectively.

Note 10: Those in brackets to be installed as replacements in accordance with Condition 3.23.

Note 11: Leachate levels in cells at the lowest collection points i.e. at leachate collection sumps, or otherwise agreed by the Agency.

Note 12: Three cells to be agreed by the Agency.

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 Dust/Odour

Table D.3.1 Dust Monitoring Frequency and Technique

Parameter ($mg/m^2/day$)	Monitoring Frequency	Analysis Method/Technique
Dust	Three times a year [Note 2]	Standard Method [Note 1]
Odour	Biannual	See [Note 3]

Note 1: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). Any modifications to eliminate interference due to algae growth in the gauge should be reported to the Agency.
Note 2: Twice during the period May to September.
Note 3: To be agreed by the Agency.

D.4 Noise

Table D.4.1 Noise Monitoring Frequency and Technique

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

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

D.5 Surface Water, Groundwater and Leachate

Table D.5.1 Water and Leachate - Parameters / Frequency

PARAMETER[Note 1]	SURFACE WATER[Note 2] Monitoring Frequency	GROUNDWATER Monitoring Frequency	LEACHATE[Note 3] Monitoring Frequency
Visual Inspection/Odour Note 2	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Continuous
Ammoniacal Nitrogen	Quarterly	Quarterly	Annually
BOD	Quarterly	Not Applicable	Annually
COD	Quarterly	Not Applicable	Annually
Chloride	Quarterly	Quarterly	Annually
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Quarterly	Annually
Ph	Quarterly	Quarterly	Annually
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	Quarterly	Quarterly
Metals / non metals [Note 3]	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
List I/II organic substances Note 4	Once off [Note 5]	Annually [Note5]	Once off [Note 5]
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
Biological Assessment	Annually [Note 6]	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: 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 4: 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 5: 2 surface water locations, 3 groundwater locations and 2 leachate locations to be agreed by the Agency for these parameters.

Note 6: Appropriate biological methods (such as EPA Q-Rating System) to be used for the assessment of rivers and streams.

D.6 Meteorological Monitoring

Table D.6.1 Meteorological Monitoring:
At the locations specified in **Section 2.12.1 of the EIS.**

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Force and Direction	Daily	Standard
Evaporation	Daily	Standard
Evapotranspiration Note 1	Daily	Standard
Humidity	Daily	Standard
Atmospheric Pressure Note 1	Daily	Standard

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

D.7 Landfill Gas Combustion Plant/Enclosed Flare

Location: Enclosed Flare to be at the location identified as "*Gas*" in Drawing No. 2003-120-01-006 Rev. B – *Existing Environmental Monitoring Point Location Map.* Any alternate location or location of Landfill Gas Combustion Plant to be agreed in advance by the Agency.

Table D.7.1 Landfill Gas Utilisation Plant/Enclosed Flare Parameters and Monitoring Frequency.

Parameter	Flare (enclosed) Monitoring Frequency	Utilisation Plant Monitoring Frequency	Analysis Method[Note1]/Technique[Note2]
Inlet			
Methane (CH_4) % v/v	Continuous	Weekly	Infrared analyser/flame ionisation detector/thermal conductivity
Carbon dioxide (CO_2) % v/v	Continuous	Weekly	Infrared analyser/thermal conductivity
Oxygen (O_2) % v/v	Continuous	Weekly	Electrochemical/thermal conductivity
Total Sulphur	Annually	Annually	Ion chromatography
Total Chlorine	Annually	Annually	Ion chromatography
Total Fluorine	Annually	Annually	Ion Selective Electrode
Process Parameters			
Combustion Temperature	Continuous	Quarterly	Temperature Probe/datalogger
Outlet			
CO	Continuous	Continuous	Flue gas analyser/datalogger
Nox	Annually	Annually	Flue gas analyser

Parameter	Flare (enclosed) Monitoring Frequency	Utilisation Plant Monitoring Frequency	Analysis Method[Note1]/Technique[Note2]
SO_2	Annually	Annually	Flue gas analyser
Particulates	Not applicable	Annually	Isokinetic/Gravimetric
TA Luft Class I, II, III organics	Not applicable	Annually	Adsorption/Desorption /GC/GCMS [Note 3]
TOC	Annually	Not applicable	Flame ionisation
Hydrochloric acid	Annually	Annually	Impinger /Ion Chromatography
Hydrogen fluoride	Annually	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.
Note 3: Test methods should be capable of detecting acetonitrile, dichloromethane, tetrachlorethylene and vinyl chloride as a minimum.

D.8 Monitoring of Composting Process

Table D.8.1 Monitoring of Composting Process

Parameter	Monitoring[Note1] Frequency	Analysis Method/Technique
Moisture Content	Weekly	Standard
Temperature (min/max.)	Daily	Temperature probe

Note 1: Unless otherwise agreed by the Agency.

D.9 Waste Monitoring

Waste Class	Frequency	Parameter	Method
Bio–stabilised residual waste	Every 200 tonnes from each source	As agreed with the Agency	As agreed with the Agency

SCHEDULE E : Recording and Reporting to the Agency

Report	Reporting Frequency Note1	Report Submission Date
Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	By 31 March each year
Record of incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	Within one month after the end of the three year period being reported on.
Specified Engineering Works reports	As they arise	Prior to the works commencing.
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	Three times a year	Ten days after the period being reported on.
Noise Monitoring	Annually	One month after end of the year being reported on.
Waste Recovery Report	Annual	As part of Annual Environmental Report.
Any other monitoring	As they occur	Within ten days of obtaining results.

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

SCHEDULE F : Compost Quality

Compost shall be deemed unsatisfactory if more than 25% of samples fail the criteria below. No sample shall exceed 1.2 times the quality limit values set.

[The following criteria are deemed a quality standard for the use of compost as a soil improver and should not be deemed as criteria for fertiliser. In addition N, P, K, NH_4-N, NO_3-N, pH and dry matter content should also be measured].

1. Maturity

The state of the curing pile must be conducive to aerobic biological activity.

Compost shall be deemed to be mature if it meets two of the following groups of requirements:

1. Respiration activity after four days AT_4 is ≤10mg/O_2/g dry matter or Dynamic Respiration Index is ≤1,000mgO_2/kg VS/h.

2. Germination of cress (*Lepidium sativum*) seeds and of radish (*Raphanus sativus*) seeds in compost must be greater than 90 percent of the germination rate of the control sample, and the growth rate of plants grown in a mixture of compost and soil must not differ more than 50 percent in comparison with the control sample.

3. Compost must be cured for at least 21 days; and

Compost will not reheat upon standing to greater than 20°C above ambient temperature.

4. If no other determination of maturity is made, the compost must be cured for a six month period. In addition, offensive odours from the compost shall be minimal for the compost to be deemed mature.

5. Or other maturity tests as may be agreed with the Agency.

2. Trace Elements [Note 1]

Maximum Trace Element Concentration Limits for Compost [Note 2]

Parameter (mg/kg, dry mass)	Compost Quality Standards [Note 3]	
	Class 1	Class 2
Cadmium (Cd)	0.7	1.5
Chromium (Cr)	100	150
Copper (Cu)	100	150
Mercury (Hg)	0.5	1
Nickel (Ni)	50	75
Lead (Pb)	100	150
Zinc (Zn)	200	400
PolyChlorintated Biphenyls (PCB's)	-	-
Polynuclear Aromatic Hydrocarbons (PAH's)	-	-
Impurities >2mm [Note 4]	<0.5%	<0.5%
Gravel and Stones >5mm [Note 4]	<5%	<5%

Note 1: These limits apply to the compost just after the composting phase and prior to mixing with any other materials.

Note 2: The above alone should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.

Note 3: Normalised to 30% organic matter content.

Note 4: Compost must not contain any sharp foreign matter measuring over a 2 mm dimension that may cause damage or injury to humans, animals and plants during or resulting from its intended use.

3. Pathogens

Pathogenic organism content must not exceed the following limits:

Salmonella sp.	Absent in 50g	n=5
Faecal Coliforms	≤ 1000 Most Probable Number (MPN) in 1g	n=5

Where: n = Number of samples to be tested;

4. Monitoring

The licensee shall monitor the compost product at least annually. The licensee shall submit to the Agency for its agreement, prior to commencement of the composting operations, details of the sampling protocol, methods of analyses and sample numbers.

SCHEDULE G : Content of the Annual Environmental Report

Annual Environmental Report Content
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 interpretation of environmental monitoring.
Resource and energy consumption summary.
Proposed development of the facility 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 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.
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.
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.
Report on the use of a portion of the waste charges for appropriate local environmental improvement projects during the year and details of plans for forthcoming year.
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.
Statement of compliance of facility with any updates of the relevant Waste Management Plan.
Statement on the achievement of the waste acceptance and treatment obligations.
Updates/Amendments to the Odour Management Plan.
Waste Recovery Report.
Any other items specified by the Agency.

Sealed by the seal of the Agency on this the ... day of September, 2009

PRESENT when the seal of the Agency was affixed hereto:

_____

...., Director/Authorised Person