



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

**LANDFILL FOR NON-HAZARDOUS WASTE  
REVIEW OF A WASTE LICENCE  
Recommended Decision**

|                              |   |
|------------------------------|---|
| <b>Waste Licence</b>         | W0029-03  |
| <b>Register Number:</b>      |   |
| <b>Licensee:</b>             | Offaly County Council   |
| <b>Location of Facility:</b> | Derryclure Landfill, Derryclure, Tullamore,<br>County Offaly. |

# 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 of a non-hazardous waste landfill which will accept up to a maximum annual tonnage of 40,000 tonnes of waste for disposal. The licence also allows for the composting of biodegradable waste and the operation of a Civic Waste Facility.

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

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

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# 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 Environmental Protection Agency has considered documentation received from the licensee and the report of its inspector.

### *Part I: Activities Licensed*

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2008, the Environmental Protection Agency (the Agency) proposes, under Section 46(8) of the said Acts to grant this waste licence to Offaly County Council, Aras an Chontae, Charleville Road, Tullamore, County Offaly, to carry on the waste activities listed below at Derryclure Landfill, Derryclure, Tullamore, County Offaly 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 (S.I. No. 395) this facility is classed as a non-hazardous waste landfill.

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

|                 |  |
|-----------------|--|
| <b>Class 1</b>  | <b>Deposit on, in or under land (including landfill):</b><br><br>This activity is limited to the deposition of waste in areas where waste has previously been deposited pending the completion of lined cells at the facility.   |
| <b>Class 4</b>  | <b>Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons:</b><br><br>This activity is limited to the storage of leachate in lagoons or tanks.  |
| <b>Class 5</b>  | <b>Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment:</b><br><br>This activity is limited to the placement of waste into lined cells and the flaring/utilisation of landfill gas.  |
| <b>Class 7</b>  | <b>Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule (including evaporation, drying and calcination):</b><br><br>This activity is limited to the stripping of methane from leachate stored at the facility. |
| <b>Class 11</b> | <b>Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule:</b><br><br>This activity is limited to the mixing of waste types to be used in the restoration of the facility.  |
| <b>Class 13</b> | <b>Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced:</b><br><br>This activity is limited to the temporary storage of waste at the facility prior to its disposal at the landfill or at an alternative appropriate disposal facility.                                 |

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

|                 |   |
|-----------------|---|
| <b>Class 2</b>  | <b>Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):</b><br>This activity is limited to the composting of biodegradable waste.  |
| <b>Class 3</b>  | <b>Recycling or reclamation of metals and metal compounds:</b><br>This activity is limited to the collection and storage of metals at the Civic Waste Facility.   |
| <b>Class 4</b>  | <b>Recycling or reclamation of other inorganic materials:</b><br>This activity is limited to the collection of waste at the Civic Waste Facility and for the storage/use of inert waste for the restoration of the facility.  |
| <b>Class 13</b> | <b>Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced:</b><br>This activity is limited to the collection and storage of recyclable and reusable wastes at the facility prior to their use on-site or their removal off-site for recycling/recovery. |

# INTERPRETATION

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

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| <b>Adequate lighting</b>                   | 20 lux measured at ground level.   |
| <b>Agreement</b>                           | Agreement in writing.  |
| <b>Annually</b>                            | At approximately twelve monthly intervals.   |
| <b>Application</b>                         | The application by the licensee for this waste licence.  |
| <b>Appropriate facility</b>                | A waste management facility, duly authorised under relevant law and technically suitable.  |
| <b>BAT</b>                                 | Best Available Techniques as defined in Article 2(11) of Council Directive 96/61/EC concerning integrated pollution prevention and control.  |
| <b>Biodegradable waste</b>                 | Waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste and paper and cardboard.   |
| <b>Biodegradable municipal waste (BMW)</b> | 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.                            |
| <b>Bio-stabilised residual waste</b>       | 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.                                   |
| <b>Characterisation of waste</b>           | 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.  |
| <b>Classification of waste</b>             | 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.  |
| <b>Coding of waste</b>                     | 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. |
| <b>Commercial waste</b>                    | As defined in Section 5 (1) of the Act.  |
| <b>Condition</b>                           | A condition of this licence.   |
| <b>Construction and Demolition Waste</b>   | All wastes which arise from construction, renovation and demolition activities.  |
| <b>Containment boom</b>                    | A boom which can contain spillages and prevent them from entering drains or watercourses.  |
| <b>Cover material</b>                      | 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 with the Agency.   |
| <b>Daily Cover</b>                         | 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.

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| <b>Daytime</b>                        | 0800 hrs to 2200 hrs.   |
| <b>Documentation</b>                  | Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.  |
| <b>Drawing</b>                        | Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.  |
| <b>Emergency</b>                      | Those occurrences defined in Condition 9.4.   |
| <b>Emission Limits</b>                | Those limits, including concentration limits and deposition levels established in <i>Schedule C: Emission Limits</i> , of this licence.   |
| <b>European Waste Catalogue (EWC)</b> | 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.  |
| <b>Green waste</b>                    | Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.   |
| <b>Hours of Operation</b>             | The hours during which the facility is authorised to be operational. The hours of operation of a facility are usually longer than the hours of waste acceptance to facilitate preparatory and completion works, such as the removal and laying of daily cover. Different activities within the facility, such as the landfill and the civic waste facility, may have different hours of waste acceptance. |
| <b>Hours of Waste Acceptance</b>      | The hours during which the facility is authorised to accept waste. Different activities within the facility, such as the landfill and the civic waste facility, may have different hours of waste acceptance.   |
| <b>Household waste</b>                | As defined in Section 5 (1) of the Act.   |
| <b>Industrial waste</b>               | As defined in Section 5 (1) of the Act.   |
| <b>Inert waste</b>                    | Inert waste as defined in the Waste Management (Licensing) (Amendment) Regulations, 2002 (SI no. 336 of 2002).  |
| <b>Intermediate Cover</b>             | 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.  |
| <b>Landfill</b>                       | Refers to the area of the facility where the waste is disposed of by placement on the ground or on other waste.   |
| <b>Landfill Gas</b>                   | Gases generated from the landfilled waste.  |
| <b>LEL (Lower Explosive Limit)</b>    | The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.   |
| <b>Licence</b>                        | A waste licence issued in accordance with the Act.  |
| <b>Licensee</b>                       | Offaly County Council.  |
| <b>List I/II Organics</b>             | Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC.   |
| <b>Liquid Waste</b>                   | Any waste in liquid form and containing less than 2% dry matter. Any waste  |

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|                                    | tankered to the facility.  |
| <b>Maintain</b>                    | Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.   |
| <b>Monthly</b>                     | A minimum of twelve times per year, at approximately monthly intervals.  |
| <b>Municipal solid waste (MSW)</b> | 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.   |
| <b>Night-time</b>                  | 2200 hrs to 0800 hrs.  |
| <b>Recyclable Materials</b>        | Those waste types, such as cardboard, batteries, gas cylinders, etc. which may be recycled.  |
| <b>Residual waste</b>              | The fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal.   |
| <b>Quarterly</b>                   | At approximately three monthly intervals.  |
| <b>Sample(s)</b>                   | Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.  |
| <b>Sludge</b>                      | The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with greater than 2% dry matter.   |
| <b>Specified Emissions</b>         | Those emissions listed in <i>Schedule C: Emission Limits</i> , of this licence.  |
| <b>Specified Engineering Works</b> | Those engineering works listed in <i>Schedule B: Specified Engineering Works</i> , of this licence.  |
| <b>Treated Sludge</b>              | 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.              |
| <b>Treatment/pre-treatment</b>     | 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. |
| <b>Trigger Level</b>               | A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.   |
| <b>Wastewater</b>                  | Water that has been used, as for washing, flushing or in a manufacturing process.  |
| <b>White Goods</b>                 | Refrigerators, cookers, ovens and other similar appliances.  |
| <b>EPA Working Day</b>             | Refers to the following hours: 0900 hrs to 1730 hrs Monday to Friday inclusive.  |
| <b>Working Face</b>                | The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.  |



## ***PART II: CONDITIONS***

### **CONDITION 1 SCOPE 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 the Drawing entitled "Landfill Site at Derryclure, Tullamore, Co. Offaly" which was received by the Agency on 6<sup>th</sup> December 2002. 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. Only the wastes listed in *Schedule A: Waste Acceptance*, of this licence, may be disposed of or recovered at the facility subject to the maximum quantities and other constraints specified therein.
- 1.5. Waste Acceptance
  - 1.5.1. 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 accepted or disposed of at the facility.
  - 1.5.2. No hazardous wastes or liquid wastes shall be disposed of at the facility.
- 1.6. Waste Acceptance Hours and Hours of Operation
  - 1.6.1. Landfill
    - 1.6.1.1. Waste may only be accepted at the facility for disposal at the landfill between the hours of 8.00 a.m. to 4.30 p.m. Monday to Friday inclusive and 8.00 a.m. to 3.00 p.m. on Saturdays.
    - 1.6.1.2. The landfill at the facility may only be operated during the hours of 8.00 a.m. to 5.30 p.m. Monday to Friday inclusive and 8.00 a.m. to 4.00 p.m. on Saturdays.
    - 1.6.1.3. Waste shall not be accepted at the landfill on Sundays or Bank Holidays.
  - 1.6.2. Civic Waste Facility
    - 1.6.2.1. Waste shall only be accepted at the Civic Waste Facility between the hours of 8.00 a.m. to 4.30 p.m. Monday to Friday inclusive and 8.00 a.m. to 3.00 p.m. on Saturdays.
- 1.7. 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 trigger level specified in this licence which is attained or exceeded; and
  - d) Any indication that environmental pollution has, or may have, taken place.
- 1.8. Where the Agency considers that a non-compliance with any condition of this licence has occurred, it may serve a notice on the licensee specifying:

- 1.8.1. That only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice.
- 1.8.2. That the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice.
- 1.8.3. That the licensee shall carry out any other requirement specified in the notice.

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

- 1.9. 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.
- 1.10 This licence is being granted in substitution for the waste licence granted to the licensee on 23<sup>rd</sup> July 2003 and bearing Waste Licence Register W0029-02. The previous waste licence (Register No: W0029-02) 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 facility manager with experience commensurate with the level of expertise required, 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 with 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 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) Methods by which the objectives and targets will be achieved and the identification of those responsible for achieving those objectives and targets; and
- b) Any other items required by written guidance issued by the Agency.

2.3.2.3 Notwithstanding the provisions of Condition 2.3.2.2, the operator shall prepare, operate and maintain a Landfill Environmental Management Plan (LEMP) covering aspects not already covered in the EMP. This Plan shall have regard to the guidance set out in EPA publications. 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 inform and involve the local community and 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 Resource Use and Energy Efficiency

2.5.1 The licensee shall carry out an audit of the energy efficiency of the site within twelve months 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";
- (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.*

### **CONDITION 3 FACILITY INFRASTRUCTURE**

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

3.2 Specified Engineering Works

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

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

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

- a) A description of the works;
- b) As-built drawings of the works;
- c) Records and results of all tests carried out (including failures);
- d) Drawings and sections showing the location of all samples and tests carried out;
- e) Daily record sheets/diary;
- f) Name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
- g) Name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;
- h) Records of any problems and the remedial works carried out to resolve those problems; and
- i) Any other information requested in writing by the Agency.

### 3.3 Facility Notice Board

3.3.1 The licensee shall 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.

3.3.2 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.

### 3.4 Facility Security

3.4.1 The existing security and stockproof fencing and gates shall be maintained at the facility. The licensee shall provide and maintain security and stockproof fencing around the boundary of the Civic Waste Facility. 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 site security may be removed.

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

- a) A temporary repair shall be made by the end of the working day; and
- b) A repair to the standard of the original gates and/or fencing shall be undertaken within three working days.

### 3.5 Facility Roads and Site Surfaces

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

- 3.5.2 The facility entrance area, the access road to the Civic Waste Facility, the Civic Waste Facility itself and the Composting Area shall be paved to ensure an impervious surface is maintained.
- 3.6 Facility Office
- 3.6.1 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.
- 3.6.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.
- 3.7 Waste Inspection and Quarantine Areas
- 3.7.1 A Waste Inspection Area and a Waste Quarantine Area shall be maintained at the facility.
- 3.7.2 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.
- 3.7.3 Drainage from these areas shall be directed to a collection sump or the leachate collection system.
- 3.8 Weighbridge
- 3.8.1 The licensee shall maintain a weighbridge at the facility.
- 3.9 Wheel Cleaning
- 3.9.1 The licensee shall maintain a wheelwash at the facility. Drainage from the wheelwash shall only be directed to the leachate collection system or a holding tank pending its removal off-site for disposal at an appropriate facility.
- 3.10 Waste Water Treatment System
- 3.10.1 The licensee shall provide and maintain a Wastewater Treatment System at the facility for the treatment of wastewater arising on-site. The licensee shall ensure that any septic tanks and percolation areas being used at the facility are operated in accordance with the Agency's *Wastewater Treatment Manual: Treatment Systems for Single Houses*. A report on its operation and design shall be submitted as part of the AER.
- 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 shall 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 leachate/contaminated water storage tanks) and their resistance to penetration by water or other materials stored therein shall be assessed every three years. The assessment report shall be reported to the Agency.

### 3.12 Landfill Lining

- 3.12.1 The landfill liner shall comprise:-

- a) A composite liner consisting of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to  $1 \times 10^{-9}$  m/s, (or equivalent to be agreed with the Agency) overlain by a 2mm thick high density polyethylene (HDPE) layer;
- b) A geotextile protection layer placed over the HDPE layer;
- c) A 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of  $1 \times 10^{-3}$  m/s, of pre-washed, uncrushed, granular, rounded stone (16 - 32mm grain size) incorporating leachate collection drains;
- d) All side walls (with the exception of those side walls located on the interface between the new cells and the existing unlined waste disposal areas) shall be designed and constructed to achieve an equivalent protection; and
- e) For those side walls located on the interface between the new cells and the existing unlined waste disposal areas, the following shall be provided:
  - i) A gas collection layer of natural material (minimum thickness of 0.3m) or a geosynthetic layer overlain by a 2mm thick LLDPE layer which should be tied into the HDPE layer on the base of the lined cell; and
  - ii) A geocomposite leachate collection layer placed over the LLDPE layer.

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

- 3.12.3 Unless otherwise agreed by the Agency, the layout of the lined cells shall be as shown on Drawing No. BEN45098A/004 of the application.

- 3.12.4 Peat deposits shall be removed or consolidated prior to the construction of lined cells so as to ensure that the integrity of the liner is maintained at all times. The formation levels of the liner in each cell shall be agreed with the Agency prior to the construction of the liner.

### 3.13 Leachate Management Infrastructure

- 3.13.1 The licensee shall provide and maintain appropriate infrastructure to provide for the abstraction/collection of leachate from waste deposited in unlined parts of the facility. This shall consist *inter alia* of the following:

- (i) Six leachate abstraction wells located within the waste body. These wells shall be fitted with automatic pumps to allow for the pumping of leachate to the storage structure referred to in Condition 3.13.2 at regular intervals; and
- (ii) A leachate interceptor drain around the existing waste body. The leachate interceptor drain shall be designed so as to prevent the leachate collected in the interceptor drain from discharging to surfacewater or into the groundwater control drainage layer referred to under Condition 3.16.2.

- 3.13.2 The licensee shall provide and maintain a leachate storage structure(s). Any leachate storage lagoons to be constructed at the facility shall meet the lining specifications given in Condition 3.12.
- 3.13.3 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.
- 3.13.3 The licensee shall provide appropriate infrastructure to allow for the removal of dissolved methane from the leachate prior to its removal off-site.
- 3.13.4 Leachate collection/abstraction from lined cells shall be by means of a side slope riser.

#### 3.14 Landfill Gas Management

- 3.14.1 The licensee shall provide and maintain infrastructure for the active collection and flaring of landfill gas at the facility. This shall include infrastructure for the collection and flaring of landfill gas arising from waste deposits in unlined parts of the facility. The flare shall be of an enclosed type design. Flare unit efficiency shall be tested once it is installed, and once every three years thereafter.
- 3.14.2 Landfill gas extraction wells shall be provided in the lined cells so as to match the phased development of the cells. Passive venting of landfill gas shall be carried out in the lined cells until such time as it is possible to flare the landfill gas.
- 3.14.3 Any landfill gas utilisation plant required under Condition 11.4.3 shall be installed at the facility.
- 3.14.4 The licensee shall maintain all gas wells, pipework, valves, pumps, flares and other infrastructure that forms part of the landfill gas management system in a safe and fully operational manner.
- 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.

#### 3.15 Surface Water Management

- 3.15.1 Effective surface water management infrastructure shall be provided and maintained at the facility during the 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;
  - b) The collection/diversion of run-off arising from capped and restored areas; and
  - c) The diversion of surfacewater where necessary, to prevent surfacewater ingress either into the leachate interceptor drain, or into areas where lining works are proposed.
- 3.15.2 All surfacewater run-off arising from all impermeable surfaces (excluding wastewater from the wheelwash and run-off from waste inspection/quarantine areas or bunded areas) shall be diverted to a silt trap and oil interceptor prior to discharge from the facility. All silt traps and oil interceptors shall be adequately sized and shall be in accordance with European Standard prEN 858 (installations for the separation of light liquids).
- 3.15.3 The licensee shall provide and maintain one or more surfacewater discharge points from the facility. All discharges to surfacewater from the facility shall only be from discharge point(s) agreed by the Agency.



### 3.16 Groundwater Management

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

3.16.2 The licensee shall ensure that groundwater levels are maintained below the base level of the clay layer of the lining system until such time as agreed in advance with the Agency. This shall be carried out through the installation and maintenance of a groundwater control drainage layer beneath the lining system. Drainage from the groundwater control drainage layer shall be diverted to the surfacewater management system.

### 3.17 Civic Waste Facility

3.17.1 The licensee shall provide and maintain a Civic Waste Facility.

3.17.2 The licensee shall provide and maintain appropriate receptacles at the Civic Waste Facility for the storage of the various waste types.

### 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 as a minimum comprise the following:-

- a) An impermeable concrete slab;
- b) Collection infrastructure to direct all run-off to the leachate collection system; and
- c) Appropriate odour control/management infrastructure.

### 3.19 Telemetry

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

3.19.2 The telemetry system shall include for the following:-

- a) Recording of leachate levels in the lined cells, the interceptor drain and the lagoon (or other similar leachate storage structure);
- b) Recording of groundwater levels in the groundwater sump(s) located below the lined cell(s); and
- c) Recording of landfill gas levels from the permanent gas monitoring system installed in the site office and any other enclosed structures at the facility.

### 3.20 Monitoring Infrastructure

#### 3.20.1 Landfill Gas

- a) Subject to the agreement of the landowners, the licensee shall provide a representative number of monitoring locations to facilitate the measurement of

landfill gas for the purposes of detecting any potential off-site migration of landfill gas.

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

#### 3.20.2 Groundwater

- a) The licensee shall maintain monitoring points at locations agreed with the Agency to allow for the sampling and analysis of groundwater. One of these shall be located upgradient of the facility and two shall be located downgradient of the facility. Unless otherwise agreed with the Agency, each monitoring point shall include two separate standpipes and shall be screened appropriately such that overburden and bedrock groundwater can be sampled independently of each other.

#### 3.20.3 Leachate

- a) The licensee shall install and maintain a minimum of two leachate monitoring points within each lined cell to allow for the determination of leachate levels and the sampling and analysis of leachate.

#### 3.20.4 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 licensee shall maintain a Restoration and Aftercare Plan for the facility to reflect the requirements of this licence. This plan shall address the restoration of deposited wastes in the proposed lined cells and all historically landfilled areas, and should include a schedule detailing the various stages of restoration, including timescales, for the facility.

4.2. The final height of the facility following completion of the final capping shall be 94m OD Malin.

#### 4.3. Final Capping

4.3.1. With the exception of those unlined areas located on the interface with the proposed new lined cells (and which will be lined in accordance with Condition 3.12.1(e)), and unless otherwise agreed by the Agency, the final capping shall consist of the following:-

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

4.4. 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.

- 4.5. 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.
- 4.6. The licensee shall restore the facility on a phased basis. Unless otherwise agreed, filled cells shall be permanently capped within 24 months of the cells having been filled to the required level.
- 4.7. Soil Storage
- 4.7.1. All soils shall be stored to preserve the soil structure for future use.
- 4.8. 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.
- 5.2 Waste Acceptance and Characterisation Procedures
- 5.2.1 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 the Council Decision (2003/33/EC) establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC on the landfill of waste.
- 5.2.2 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.
- 5.2.3 Unless otherwise as may be 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 5.2.4.

5.2.4 Two or more licensed landfills may seek the agreement of the Agency that collectively they will arrange to comply with Condition 5.2.3. 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.

5.2.5 The licensee shall determine the biodegradable municipal waste content of MSW accepted for disposal to the body of the landfill. Waste that has been bio-stabilised in accordance with Condition 5.2.8 shall not be considered BMW.

5.2.6 Bio-stabilised residual wastes meeting the requirements of Condition 5.2.8 received at the landfill facility may be included in the determination of MSW quantities accepted at the facility for the purposes of Condition 5.2.3.

5.2.7 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.

5.2.8 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  $<10\text{mg O}_2/\text{g DM}$  until 1 January 2016 and  $<7\text{mg O}_2/\text{g DM}$  thereafter.

5.2.9 Bio-stabilised residual wastes shall be monitored in accordance with Schedule D8.

5.2.10 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 5.2.8 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 5.2.3. 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 D8 until otherwise agreed with the Agency.

5.2.11 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with Condition 5.2.3, which shall be available for inspection by Agency personnel.

5.2.12 The waste acceptance procedures established under Condition 5.2.1 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.
- 5.2.13 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.
- 5.2.14 The dilution or mixture of waste solely in order to fulfil relevant waste acceptance criteria established under Condition 5.2.1 is prohibited.
- 5.3 All wastes 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.
- 5.4 Working Face
- 5.4.1 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.
- 5.4.2 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.
- 5.4.3 The working face, or faces, shall each day at the end of the day, be covered with suitable material.
- 5.5 Daily and Intermediate Cover
- 5.5.1 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.
- 5.5.2 Appropriate cover material shall be placed 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.
- 5.5.3 Bio-stabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 5.2.8, 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.
- 5.6 Landscaping

- 5.6.1 The licensee shall maintain a landscaping plan for the facility. This shall include measures to screen the Civic Waste Facility.
- 5.7 Operational Controls
- 5.7.1 Unless otherwise agreed by the Agency, the landfill extension shall be filled in accordance with the phase sequence outlined in Drawing No. BEN45098A/004 entitled "Extension Design Showing Leachate Drainage System".
- 5.7.2 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.7.3 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 the final cap, leachate and landfill gas collection systems, unless with the prior agreement of the Agency.
- 5.7.4 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.
- 5.7.5 Scavenging shall not be permitted at the facility.
- 5.7.6 Gates shall be locked shut and appropriate security patrols and/or other measures employed to ensure that the facility is secure during periods when the facility is unsupervised.
- 5.7.7 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.7.8 Fuels shall only be stored at appropriately bunded locations on the facility.
- 5.7.9 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.7.10 No smoking shall be allowed on the facility other than in the site office/canteen.
- 5.8 Waste Handling
- 5.8.1 Sludges
- 5.8.1.1 Only treated sewage sludge with greater than 25% solids shall be accepted at the facility. The hours of acceptance for treated sludges shall be between the hours of 08.30 hrs and 14.00 hrs Monday to Friday inclusive. All sewage sludge shall be covered immediately with other waste.
- 5.8.2 Compost
- 5.8.2.1 Prior to the commencement of composting at the facility, the licensee shall submit to the Agency for agreement proposals for the operation of the compost facility. These proposals shall as a minimum include details of the composting process, waste acceptance/screening procedures, location of the compost facility, nuisance control measures, surfacewater management, monitoring of the composting process and of the end product, and the proposed end use of the compost.
- 5.8.2.2 All wastes accepted at the composting facility shall be introduced into the composting process within 24 hours of delivery.
- 5.8.2.3 No waste shall be left uncovered in the composting area from the close of operation on Saturday until Monday morning opening unless otherwise agreed with the Agency.
- 5.8.2.4 The licensee shall undertake regular monitoring of the composting process and maintain daily records of certain parameters (to be agreed with the Agency under Condition 5.8.2.1).
- 5.8.2.5 In order not to be considered a waste, compost produced by the facility shall comply with the quality standards established in *Schedule F: Standards for Compost Quality*, of this licence. Analysis of the compost shall be in accordance with the requirements of that Schedule.

### 5.8.3 Inert Waste

5.8.3.1 Only the inert wastes specified in *Schedule G: Acceptance of Inert Waste*, of this licence shall be accepted for recovery at the facility.

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

### 5.9 Off-site Disposal and Recovery

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

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

5.9.3 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.

### 5.10 Civic Waste Facility

5.10.1 The Civic Waste Facility shall only be used by private vehicles. The disposal of waste by commercial waste disposal contractors or local authority waste collection vehicles shall not be permitted.

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

- a) Into a skip;
- b) Into the hopper of the compactor for disposal;
- c) Into a receptacle for recovery; or
- d) In the case where inspection is required, into a designated inspection area.

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

5.10.4 All unsorted domestic waste and household hazardous wastes (including batteries and waste oils) accepted at the new Civic Waste Facility shall be stored in appropriately bunded storage areas. Waste fluorescent tubes shall be stored in an enclosed container in such a manner so as to prevent breakage.

5.10.5 Domestic waste delivered to the Civic Waste Facility for disposal shall be deposited at the working face prior to the end of the working day or removed off-site to an alternative facility agreed with the Agency.

### 5.11 Leachate Management

5.11.1 All leachate collected at the facility shall be pumped/drained to the leachate storage lagoon (or similar storage structure) prior to removal off-site.

5.11.2 Leachate levels in lined cells shall not exceed a level of 1.0m over the top of the liner at the base of the landfill.

5.11.3 The frequency of leachate removal/discharge from the leachate storage lagoon shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoon at all times.

5.11.4 Leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers to Tullamore Waste Water Treatment Plant, unless otherwise agreed by the Agency.

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

## 5.12 Maintenance

- 5.12.1 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.
- 5.12.2 All lagoon structures on the facility shall be inspected and certified fit for purpose every three years by an independent and appropriately qualified chartered engineer.
- 5.12.3 The licensee shall maintain and clearly label and name all sampling and monitoring locations.
- 5.12.4 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.

*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





- 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.

7.3.5 The licensee shall implement procedures for the operation of the facility during adverse wind conditions.

#### 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.

7.4.2 All stockpiles shall be maintained so as to minimise dust generation.

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 maintain their presence every day, from before dawn to after dark, until the waste activities cease and all the waste is capped to the written satisfaction of the Agency.

*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 provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.

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

8.6 All persons conducting the sampling, monitoring and interpretation of monitoring results as required by this licence shall be suitably competent. The licensee shall maintain the following information at the facility:

- a) 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.
- 8.7 Meteorological Monitoring
- 8.7.1 The licensee shall maintain a meteorological station at the facility capable of monitoring the parameters listed in *Schedule D.6: Meteorological Monitoring*, of this licence.
- 8.8 Topographical Survey
- 8.8.1 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.
- 8.9 Archaeological Assessment
- 8.9.1 Prior to the development of lined cells/lagoons in any undisturbed area, the advice of Dúchas the Heritage Service shall be sought. On completion of such development, a report of the results of any archaeological monitoring shall be submitted to Dúchas and to the Agency.
- 8.10 Stability Assessment
- 8.10.1 The licensee shall carry out an annual stability assessment of the side slopes of the facility.
- 8.11 Nuisance Monitoring
- 8.11.1 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, dust and odours.
- 8.12 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.

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

## **CONDITION 9 CONTINGENCY ARRANGEMENTS**

- 9.1. In the event of an incident the licensee shall immediately:-
- a) Identify the date, time and place of the incident;
  - b) Carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
  - c) Isolate the source of any such emission;
  - d) Evaluate the environmental pollution, if any, caused by the incident;
  - e) Identify and execute measures to minimise the emissions/malfunction and the effects thereof; and
  - f) Provide a proposal to the Agency for its agreement within one month of the incident occurring to:-

- a) Identify and put in place measures to avoid reoccurrence of the incident;
  - b) Identify and put in place any other appropriate remedial action.
- 9.2. The licensee shall maintain, review annually and update as necessary, an 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 fire water retention facilities. The Fire Authority shall be consulted by the licensee during this assessment.
- 9.3. The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.
- 9.4. Emergencies
- 9.4.1. All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.
  - 9.4.2. No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.
  - 9.4.3. In the event that monitoring of the side slopes or exposed peat faces at the facility indicates that there may be a risk of slope failure, this will be treated as an emergency.
- 9.5. The licensee shall ensure that a documented Accident Prevention Policy is in place, 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.*

## **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:
- (i) the date and time;
  - (ii) the name of the carrier (including if appropriate, the waste carrier registration details);
  - (iii) the vehicle registration number;
  - (iv) the trailer, skip or other container unique identification number (where relevant);
  - (v) the name of the producer(s)/collector(s) of the waste as appropriate;
  - (vi) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
  - (vii) a description of the waste including the associated EWC/HWL codes;
  - (viii) the quantity of the waste, recorded in tonnes;
  - (ix) details of the treatment(s) to which the waste has been subjected;
  - (x) the classification and coding of the waste, including whether MSW or otherwise;

- (xi) whether the waste is for disposal or recovery and if recovery for what purpose;
- (xii) the name of the person checking the load; and
- (xiii) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.

### 10.3 Written Records

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

- a) The types and quantities of waste recovered and disposed of at the facility each year. These records shall include the relevant EWC Codes and any details required to complete national reports on waste statistics;
- 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.

10.4 The licensee shall maintain a written record of all complaints relating to the operation of the facility. Each such record shall give details of the following:-

- a) Date and time of the complaint;
- b) The name of the complainant;
- c) Details of the nature of the complaint;
- d) Actions taken on foot of the complaint and the results of such actions; and
- e) The response made to each complainant.

10.5 A written record shall be kept of each consignment of leachate removed from the facility. The record shall include the following:-

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

10.6 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;
- 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 waste, recorded in tonnes;
- f) The name of the person checking the load; and
- g) The time and date of departure.

10.7 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.

10.8 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 Administration, Waste Enforcement Section, at the Agency's headquarters;
- b) Comprise one original and three 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-f), 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 Shannon 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 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:

- a) The recovery of Construction and Demolition Waste;
- b) The recover of other waste in landfill operations, including restoration; and
- c) The recovery of energy through landfill gas combustion.

#### 11.4 Reports relating to Facility Operations

##### 11.4.1. Leachate Handling Procedures

11.4.1.1 The licensee shall maintain, and update when necessary, Leachate Handling Procedures for the storage and handling of leachate on the facility, and for the removal of leachate from the facility. These procedures shall address the abstraction of leachate from the six abstraction boreholes located within the waste body, and from the leachate interceptor drain.

##### 11.4.2. Achievement of Final Profile

11.4.2.1 The licensee shall achieve the final profile/height of the facility as agreed with the Agency. The licensee shall maintain, and revise as necessary, a drawing detailing the final contours of the facility, taking into account the Conditions of this licence.

##### 11.4.3. Landfill Gas Utilisation

11.4.3.1 The licensee shall utilise landfill gas as an energy source where feasible.

##### 11.4.4. Surfacewater Management

11.4.4.1 A programme for the management of surface water at the facility shall be maintained by the licensee, and agreed by the Agency. The programme shall be updated as necessary or as required by the Agency, and shall include adequate control measures for surface water at the facility.

11.4.5. European Pollution Emission Register reporting shall be in accordance with any relevant guidance issued by the Agency.

#### 11.5 Monitoring Locations

11.5.1 The licensee shall maintain an appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. The drawing(s) shall include a unique reference code and the twelve figure National Grid Reference for each monitoring point.

#### 11.6 Annual Environmental Report

11.6.1 The licensee shall submit to the Agency for its agreement an Annual Environmental Report (AER) by the 31<sup>st</sup> March each year. The AER shall be submitted on an annual basis thereafter.

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

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

- 11.8 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 5.2.3. 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 €20,148, 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 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 arrange for the completion, by an independent and appropriate 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.

12.2.2 The licensee shall from a date to be set by the Agency establish and maintain a fund, or provide a written guarantee, that is adequate to assure the Agency that the licensee is at all times financially capable of implementing the Restoration and Aftercare Plan required by Condition 4. The type of fund established and means of its release/recovery shall be agreed by the Agency prior to its establishment.

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

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



Where:-

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

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

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

12.2.4 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.

12.2.5 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.

12.2.6 As part of the measures identified in Condition 12.2.5, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities associated with the operation (including closure and aftercare) of the facility, not already covered by condition 12.2.2. 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 12.2.5.

*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 to be accepted for disposal

| WASTE TYPE                        | MAXIMUM (TONNES PER ANNUM) <sup>Note 1</sup> |
|-----------------------------------|--|
| Household                         | 15,500                                       |
| Commercial                        | 9,500  |
| Industrial Non-Hazardous Solids   | 7,500  |
| Treated Sewage Sludge             | 5,500  |
| Construction and Demolition Waste | 2,000  |
| <b>Total</b>                      | <b>40,000</b>                                |

**Note 1:** The tonnage of household waste, commercial waste, industrial non-hazardous solids, treated sewage sludge and construction and demolition waste accepted for disposal may be altered with the prior agreement of the Agency, provided that the total amount of waste accepted at the facility for disposal does not exceed 40,000 tonnes per annum (as specified in the total above).

Table A.2 Waste Categories and Quantities to be accepted for Recovery

| Waste Type   | Maximum (Tonnes Per Annum)                      |
|--|---|
| Biodegradable waste for composting                                 | To be agreed with the Agency. <sup>Note 1</sup> |
| Inert Waste  | To be agreed with the Agency. <sup>Note 1</sup> |
| Waste to be accepted at the Civic Waste Facility <sup>Note 2</sup> | To be agreed with the Agency. <sup>Note 1</sup> |

**Note 1:** The agreed tonnages shall only be amended with the prior agreement of the Agency.

**Note 2:** Unless otherwise agreed with the Agency, the following wastes may be accepted at the Civic Waste Facility: metal, white goods, paper, cardboard, plastic, glass, aluminium cans, waste oils, batteries and fluorescent tubes.

Table A.3 Total Permitted Landfill Capacity

|  |                         |
|--|-------------------------|
| Total quantity of waste permitted to be placed at the landfill facility (over authorised life of facility) | 1,564,000m <sup>3</sup> |
|--|-------------------------|

## SCHEDULE B : Specified Engineering Works

| Specified Engineering Works   |
|---|
| Development of the facility including preparatory works and lining. |
| Final capping.  |
| Installation of Compost Facility.                                   |
| Installation of the proposed new Civic Amenity 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 any noise sensitive locations).

| Day Db(A) L <sub>Aeq</sub> (15 minutes) | Night dB(A) L <sub>Aeq</sub> (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 monitoring points indicated in Table D.1.1).

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

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

### C.4 Emission Limits Values for Landfill Gas Plant:

Emission Point Reference no.s: To be agreed with the Agency.  
 Location: Landfill Gas Utilisation Plant and/or flare.  
 Max. Volume to be emitted: 3,000m<sup>3</sup>/hr. (unless otherwise agreed with the Agency).  
 Minimum discharge height: 5m (unless otherwise agreed with the Agency).

| Parameter                               | Flare (enclosed)<br>Emission Limit Value <sup>Note 1, 2</sup> | Utilisation Plant<br>Emission Limit Value <sup>Note 1, 2</sup> |
|---|---|--|
| Nitrogen oxides (NO <sub>x</sub> )      | 150 mg/m <sup>3</sup>   | 500 mg/m <sup>3</sup>  |
| CO                                      | 50 mg/m <sup>3</sup>  | 1400 mg/m <sup>3</sup>   |
| Particulates                            | Not applicable  | 130 mg/m <sup>3</sup>  |
| Total Volatile Organic Compounds (VOCs) | Not applicable  | 1000 mg/m <sup>3</sup>   |
| Total non-methane VOCs                  | Not applicable  | 75 mg/m <sup>3</sup>   |
| Total organic carbon (TOC)              | 10 mg/m <sup>3</sup>  | Not applicable   |
| Hydrogen Chloride                       | 50 mg/m <sup>3</sup> (at mass flows > 0.3 kg/h)               | 50 mg/m <sup>3</sup> (at mass flows > 0.3 kg/h)                |
| Hydrogen Fluoride                       | 5 mg/m <sup>3</sup> (at mass flows > 0.05 kg/h)               | 5 mg/m <sup>3</sup> (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: These emission limit values may be revised with the agreement of the Agency on the basis of the technology employed.

# SCHEDULE D : Monitoring

## D.1 Monitoring Locations

Monitoring locations shall be those as set out in Table D.1.1.

Table D.1.1 Monitoring Locations

| Landfill Gas Stations <sup>Note 1</sup>                | Dust Deposition Stations <sup>Note 1</sup> | Noise Stations <sup>Note</sup> | Surface Water Stations <sup>Note 1</sup> | Ground Water Stations <sup>Note 1</sup> | Leachate Stations <sup>Note 1</sup>                         |
|--|--|--------------------------------|--|---|---|
| GP-01, GP-03, GP-05, GP-08, GP-09, GP-13, GP-14, GP-15 | -DM-02, DM-04, DM-05, DM-07                | N2, N3, N6, N8                 | SW1, SW7, SW8 <sup>Note 5</sup> , SW11   | MW-01D, MW-05D, MW-08S, MW-08B          | LE-01, LE-02, LE-03, LE-04, LE-05, LE-06 <sup>Note 10</sup> |
| Site Office & Buildings                                |  |                                | 1 upstream location <sup>Note 6</sup>    | BH-01S, BH-01D <sup>Note 8</sup>        | Lined cells <sup>Note 11</sup>                              |
| Perimeter locations <sup>Note 2</sup>                  |  |                                | Discharge locations <sup>Note 7</sup>    | 3 other locations <sup>Note 9</sup>     | Leachate storage structure <sup>Note 4</sup>                |
| Lined cells <sup>Note 3</sup>                          |  |                                |  |   |   |
| Flare / Utilisation Plant <sup>Note 4</sup>            |  |                                |  |   |   |

**Note 1:** As shown on Map J.1 "Environmental Monitoring (Amendment 4)" in Article 13 response received by the Agency on 24/9/02 from Bord na Mona.

**Note 2:** Perimeter wells to monitor for potential off-site migration of landfill gas to be provided in accordance with Condition 3.20.1 at locations to be agreed with the Agency.

**Note 3:** At least one per cell within lined waste disposal areas.

**Note 4:** Locations to be agreed with the Agency.

**Note 5:** SW8 to be located on the main surfacewater outfall from the present moate on the western boundary of the facility.

**Note 6:** One surfacewater monitoring point to be located upstream of the northern boundary of the facility at a location to be agreed with the Agency.

**Note 7:** At those locations to be agreed under Condition 3.15.3.

**Note 8:** As shown on Map C6.2 "Piezometric Map (Revision 2)" in Article 13 response received by the Agency on 13/1/03 from Bord na Mona.

**Note 9:** As per the requirements of Condition 3.20.2.

**Note 10:** Leachate quality and levels to be monitored at LE-05. Only leachate levels to be recorded at the other locations.

**Note 11:** At two locations per lined cell, as per the requirements of Condition 3.20.3.

## D.2 Landfill Gas

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

| Parameter                               | Monitoring Frequency          |             | Analysis Method <sup>Note 1</sup> / Technique <sup>Note 2</sup> |
|---|-------------------------------|-------------|---|
|   | Gas Boreholes/<br>Vents/Wells | Site Office |   |
| Methane (CH <sub>4</sub> ) % v/v        | Monthly                       | Continuous  | Infrared analyser/flame ionisation detector                     |
| Carbon dioxide (CO <sub>2</sub> ) % v/v | Monthly                       | Continuous  | Infrared analyser/ flame ionisation detector                    |
| Oxygen (O <sub>2</sub> ) % v/v          | Monthly                       | Continuous  | Electrochemical cell  |
| Atmospheric Pressure                    | Monthly                       | -           | Standard  |
| Temperature                             | Monthly                       | -           | Standard  |

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

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

### D.3 Dust Monitoring

Table D.3.1 Dust Monitoring Parameters, Frequency and Technique

| Parameter (mg/m <sup>2</sup> /day) | Monitoring Frequency                 | Analysis Method/Technique         |
|------------------------------------|--------------------------------------|-----------------------------------|
| Dust Deposition <sup>Note 1</sup>  | Three times a year <sup>Note 2</sup> | Standard Method <sup>Note 3</sup> |

**Note 1:** A wind rose, obtained from the meteorological station for the relevant sampling period, shall be submitted with each set of results.

**Note 2:** At least twice during the period May to September.

**Note 3:** 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.

### D.4 Noise

Table D.4.1 Noise Monitoring Parameters, Frequency and Technique

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

**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

| <b>PARAMETER</b> <sup>Note 1</sup>                    | <b>SURFACE WATER</b> <sup>Note 2</sup> | <b>GROUNDWATER</b>          | <b>LEACHATE</b> <sup>Note 3</sup> |
|---|--|-----------------------------|-----------------------------------|
|   | <b>Monitoring Frequency</b>            | <b>Monitoring Frequency</b> | <b>Monitoring Frequency</b>       |
| <b>Visual Inspection/Odour</b> <sup>Note 2</sup>      | Weekly                                 | Quarterly                   | Quarterly                         |
| <b>Groundwater Level</b>                              | Not Applicable                         | Monthly                     | Not Applicable                    |
| <b>Leachate Level</b>                                 | Not Applicable                         | Not Applicable              | Continuous <sup>Note 6</sup>      |
| <b>Ammoniacal Nitrogen</b>                            | Quarterly                              | Quarterly                   | Annually                          |
| <b>BOD</b>  | Quarterly                              | Not Applicable              | Annually                          |
| <b>COD</b>  | Quarterly                              | Not Applicable              | Annually                          |
| <b>Chloride</b>                                       | Quarterly                              | Quarterly                   | Annually                          |
| <b>Dissolved Oxygen</b>                               | Quarterly                              | Quarterly                   | Not Applicable                    |
| <b>Electrical Conductivity</b>                        | Quarterly                              | Quarterly                   | Annually                          |
| <b>PH</b>   | Quarterly                              | Quarterly                   | Annually                          |
| <b>Total Suspended Solids</b>                         | Quarterly                              | Not Applicable              | Not Applicable                    |
| <b>Temperature</b>                                    | Quarterly                              | Quarterly                   | Quarterly                         |
| <b>Metals / non metals</b> <sup>Note 3</sup>          | Annually                               | Annually                    | Annually                          |
| <b>Cyanide (Total)</b>                                | Not Applicable                         | Annually                    | Annually                          |
| <b>Fluoride</b>                                       | Not Applicable                         | Annually                    | Annually                          |
| <b>List I/II organic substances</b> <sup>Note 4</sup> | Once off <sup>Note 5</sup>             | Annually <sup>Note 5</sup>  | Once off <sup>Note 5</sup>        |
| <b>Mercury</b>  | Annually                               | Annually                    | Annually                          |
| <b>Sulphate</b>                                       | Annually                               | Annually                    | Annually                          |
| <b>Total Alkalinity</b>                               | Annually                               | Annually                    | Not applicable                    |
| <b>Total P/orthophosphate</b>                         | Annually                               | Annually                    | Annually                          |
| <b>Total Oxidised Nitrogen</b>                        | Annually                               | Annually                    | Annually                          |
| <b>Total Organic Carbon</b>                           | Not Applicable                         | Quarterly                   | Not Applicable                    |
| <b>Residue on evaporation</b>                         | Not Applicable                         | Annually                    | Not Applicable                    |

**Note 1:** All the analyses 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 with the Agency for these parameters.

**Note 6:** Continuous monitoring in the leachate storage lagoon/structure and in lined cells, and weekly in the leachate abstraction boreholes (unlined areas).

### ***D.6 Meteorological Monitoring***

Data to be obtained from the meteorological monitoring station on-site.

Table D.6.1 Meteorological Monitoring Parameters, Frequency and Technique

| <b>Parameter</b>                              | <b>Monitoring Frequency</b> | <b>Analysis Method/Technique</b> |
|---|-----------------------------|----------------------------------|
| <b>Precipitation Volume</b>                   | Daily                       | Standard                         |
| <b>Temperature (min/max.)</b>                 | Daily                       | Standard                         |
| <b>Wind Force and Direction</b>               | Daily                       | Standard                         |
| <b>Evaporation</b>                            | Daily                       | Standard                         |
| <b>Humidity</b>                               | Daily                       | Standard                         |
| <b>Atmospheric Pressure</b> <sup>Note 1</sup> | Daily                       | Standard                         |

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

### D.7 Landfill Gas Enclosed Flare/Utilisation Plant

Location: to be agreed with the Agency in advance.

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

| Parameter                               | Flare (enclosed)     | Utilisation Plant    | Analysis Method <sup>Note 1</sup> /<br>Technique <sup>Note 2</sup> |
|---|----------------------|----------------------|--|
|   | Monitoring Frequency | Monitoring Frequency |  |
| <b>Inlet</b>                            |                      |                      |  |
| Methane (CH <sub>4</sub> ) % v/v        | Continuous           | Weekly               | Infrared analyser/flame ionisation detector/thermal conductivity   |
| Carbon dioxide (CO <sub>2</sub> ) % v/v | Continuous           | Weekly               | Infrared analyser/thermal conductivity                             |
| Oxygen (O <sub>2</sub> ) % 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  |
| <b>Process Parameters</b>               |                      |                      |  |
| Combustion Temperature                  | Continuous           | Quarterly            | Temperature Probe/datalogger                                       |
| <b>Outlet</b>                           |                      |                      |  |
| CO                                      | Continuous           | Continuous           | Flue gas analyser/datalogger                                       |
| NO <sub>x</sub>                         | Annually             | Continuous           | Flue gas analyser  |
| SO <sub>2</sub>                         | Annually             | Annually             | Flue gas analyser  |
| Particulates                            | Not applicable       | Annually             | Isokinetic/Gravimetric   |
| Total VOCs                              | Not applicable       | Annually             | Flame ionisation   |
| Total non-methane VOCs                  | Not applicable       | Annually             | Adsorption-thermal desorption                                      |
| 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 with the Agency.

### D.8 Waste Monitoring

| Waste class                   | Frequency                         | Parameter | Method    |
|-------------------------------|-----------------------------------|-----------|-----------|
| Bio-stabilised residual waste | Every 200 tonnes from each source | As agreed | As agreed |



## SCHEDULE E : Recording and Reporting to the Agency

| Report   | Reporting Frequency <small>Note 1</small> | Report Submission Date  |
|--|---|---|
| <b>Environmental Management System Updates</b>       | Annually                                  | One month after the end of the year reported on.  |
| <b>Annual Environment Report (AER)</b>               | Annually                                  | By 31 <sup>st</sup> March each year.  |
| <b>Record of incidents</b>                           | As they occur                             | Within five days of the incident.   |
| <b>Bund, tank and container integrity assessment</b> | Every three years                         | Prior to the use of any new structures and within one month after end of the three year period being reported on. |
| <b>Specified Engineering Works reports</b>           | As they arise                             | Prior to the works commencing.  |
| <b>Monitoring of landfill gas</b>                    | Quarterly                                 | Ten days after end of the quarter being reported on.  |
| <b>Monitoring of Surface Water Quality</b>           | Quarterly                                 | Ten days after end of the quarter being reported on.  |
| <b>Monitoring of Groundwater Quality</b>             | Quarterly                                 | Ten days after end of the quarter being reported on.  |
| <b>Monitoring of Leachate</b>                        | Quarterly                                 | Ten days after end of the quarter being reported on.  |
| <b>Dust Monitoring</b>                               | Three times a year                        | Ten days after the period being reported on   |
| <b>Noise Monitoring</b>                              | Annually                                  | One month after end of the year being reported on.  |
| <b>Topographical Survey</b>                          | Annually                                  | One month after the end of the year being reported on.  |
| <b>Stability Assessment</b>                          | Annually                                  | One month after the end of the year being reported on.  |
| <b>Any other monitoring</b>                          | As they occur                             | Within ten days of obtaining results.   |

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

## SCHEDULE F : Standards for Compost Quality

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<sub>4</sub>-N, NO<sub>3</sub>-N, pH and dry matter content should also be measured.

Compost/digestate shall meet the standards below if not more than 25% of samples fail the criteria below. No sample shall exceed 1.2 times the quality limit values set.

### 1. Maturity (Compost only)

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<sub>4</sub> is ≤10mg/O<sub>2</sub>/g dry matter or Dynamic Respiration Index is ≤1,000mgO<sub>2</sub>/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.

Guidance on testing may be obtained from the German document LAGA M10 'Quality Criteria and Application Recommendations for Compost'.

### 2. Trace Elements (Compost and Digestate) <sup>Note 1</sup>

Maximum Trace Element Concentration Limits <sup>Note 2</sup>

| Parameter (mg/kg, dry mass)              | Compost Quality Standards <sup>Note 3</sup><br>/ Digestate Quality Standards <sup>Note 3</sup> |                           | Stabilised Biowaste |
|--|--|---------------------------|---------------------|
|  | Class 1 <sup>Note 5</sup>  | Class 2 <sup>Note 6</sup> |                     |
| Cadmium (Cd)                             | 0.7  | 1.5                       | 5                   |
| Chromium (Cr)                            | 100  | 150                       | 600                 |
| Copper (Cu)                              | 100  | 150                       | 600                 |
| Mercury (Hg)                             | 0.5  | 1                         | 5                   |
| Nickel (Ni)                              | 50   | 75                        | 150                 |
| Lead (Pb)                                | 100  | 150                       | 500                 |
| Zinc (Zn)                                | 200  | 400                       | 1500                |
| Impurities >2mm <sup>Note 4</sup>        | <0.5%  | <0.5%                     | <3%                 |
| Gravel and Stones >5mm <sup>Note 4</sup> | <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.

**Note 5:** All use of compost of Class 1 Standard shall be in accordance with best agronomic practice.

**Note 6:** All use of compost of Class 2 Standard shall be in accordance with best agronomic practice. Notwithstanding this, it shall be used in a quantity not exceeding 30 Tonnes dry matter per hectare (on a three year average).

### 3. Pathogens

Pathogenic organism content must not exceed the following limits:

|                         |  |       |
|-------------------------|--|-------|
| <i>Salmonella sp.</i>   | Absent in 50g                            | n = 5 |
| <i>Faecal Coliforms</i> | ≤ 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 compost operations, details of methods of analyses and sample numbers.

## SCHEDULE G : Acceptance of Inert Waste

### G.1 Acceptable Waste for Recovery

Only those inert wastes listed in Table G.1.1 are acceptable for recovery at the facility, unless otherwise agreed with the Agency.

Table G.1.1 Waste for Recovery

| WASTE                   |  |
|-------------------------|--|
| Topsoil                 | Solid Road Planings, Solid Tarmacadam, Solid Asphalt <sup>Note 1</sup> |
| Subsoil                 | Brickwork  |
| Stone, Rock and Slate   | Natural Sand   |
| Clay, Pottery and China | Concrete   |

Note 1: Acceptance for recovery is subject to prior agreement with the Agency.

## SCHEDULE H : 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.

Report on the performance and compatibility of the septic tank (and associated percolation area) with the Agency's *Wastewater Treatment manual: "Treatment Systems for Single Houses"*.

Reported incidents and Complaints summaries.

Review of Nuisance Controls.

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

Report on training of staff.

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.

Any other items specified by the Agency.