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Ireland

WASTE LICENCE  
RECOMMENDED DECISION  
**LANDFILL FOR NON-HAZARDOUS WASTE**

<b>Waste Licence</b>	W0066-03
<b>Register Number:</b>	
<b>Licensee:</b>	Wicklow County Council
<b>Location of Facility:</b>	Rampere Landfill, Rampere, County Wicklow

# INTRODUCTION

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

This waste licence relates to an existing local authority owned and operated landfill accepting municipal, commercial and non-hazardous wastes at Rampere, County Wicklow.

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

The licence sets out in detail the conditions under which Wicklow 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, all submissions received from other parties and the report of its inspector.

## *Part I Activities Licensed*

In pursuance of the powers conferred on it by the Waste Management Acts, 1996 to 2008, the Environmental Protection Agency (Agency) proposes, under Section 46(8) of the said Acts to grant this Waste Licence to Wicklow County Council, Whitegates, Wicklow Town, County Wicklow to carry on the waste activity/activities listed below at Rampere Landfill, Rampere, County Wicklow subject to twelve conditions, with the reasons therefor 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 2</b>	<b>Land treatment, including biodegradation of liquid or sludge discards in soils:</b> This activity is limited to the deposition of treated sewage sludge at the landfill up to a maximum of 3,000 tonnes per annum.
<b>Class 4</b>	<b>Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons:</b> This activity is limited to the storage of leachate.
<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> This activity is limited to the disposal of the waste types specified in this licence.

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

<b>Class 4</b>	<b>Recycling or reclamation of other inorganic materials:</b> This activity is limited to the storage of inorganic materials at the Civic Amenity Facility and the recovery and the reuse of inert waste for landfill restoration and construction works.
<b>Class 13</b>	<b>Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced:</b> This activity is limited to the temporary storage of waste prior to inspection, recycling, recovery and/or reuse at the facility or elsewhere.

# 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.

<b>Aerosol</b>	A suspension of solid or liquid particles in a gaseous medium.
<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>Attachment</b>	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
<b>Application</b>	The application by the licensee for this waste licence.
<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>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 by 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.
<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 layering 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>Inert waste</b>	Waste as defined in SI 336 of 2002 Waste Management (Licensing) (Amendment) Regulations, 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>	Wicklow 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

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>Mobile Plant</b>	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
<b>Monthly</b>	A minimum of 12 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>Non-hazardous Asbestos Waste</b>	Includes bonded asbestos, such as tiles, which are not classified as hazardous waste and which are authorised for disposal at the facility.
<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>SCADA system</b>	Supervisory Control and Data Acquisition system.
<b>Sensitive Receptors</b>	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of nuisance.
<b>Sludge</b>	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% 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>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.

**Wastewater**

Contaminated water including water that has been used for washing, and/or flushing (including foul water).

**Working Face**

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



## ***PART II CONDITIONS***

### **CONDITION 1 SCOPE OF THE LICENCE**

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and authorised by this licence.
- 1.2. For the purposes of this licence, the facility is the area of land outlined in red on Drawing No. DG0001 Rev. A02 of Article 14 reply received on 20<sup>th</sup> June 2003. Any reference in this licence to "facility" shall mean the area thus outlined in red.
- 1.3. This licence is for the purposes of waste licensing under the Waste Management Acts, 1996 to 2008 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.4. Municipal Waste, Commercial Waste and non-hazardous Industrial Waste may be recovered and disposed of at the facility subject to the maximum quantities and other constraints listed in *Schedule A: Waste Acceptance*, of this licence.
- 1.5. Waste Acceptance
  - 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.
  - 1.5.3 Waste Treatment

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.
  - 1.5.4 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.
  - 1.5.5 The dilution or mixture of waste solely in order to fulfil relevant waste acceptance criteria established under Condition 5.3.1 is prohibited.
- 1.6. Waste Acceptance Hours and Hours of Operation
  - 1.6.1 Landfill
    - 1.6.1.1 Waste may be accepted at the facility for disposal at the landfill only between the hours of 08:30 to 16:30 Monday to Friday (Summertime); 08:30 to 16:00 Monday to Friday (Wintertime) and 08:00 to 14:30 on Saturdays.

1.6.1.2 The landfill at the facility may be operated only during the hours of 08:00 to 17:00 Monday to Friday (Summertime); 8:30 to 16:30 Monday to Friday (Wintertime) and 08:00 to 15:00 on Saturdays. Waste shall not be accepted at the landfill on Bank Holidays.

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 be accepted at the Civic Waste Facility only between the hours of 08:00 to 18:00 Monday to Friday (Summertime); 08:00 to 17:00 Monday to Friday (Wintertime) and 08:00 to 16:00 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; and

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> April 2004 and bearing Waste Licence Register No: W0066-02. The previous waste licence (Register No. W0066-02) is superseded by this licence.

1.11 Limit on acceptance of biodegradable municipal waste

1.11.1 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 1.11.2.

1.11.2 Two or more licensed landfills may seek the agreement of the Agency that collectively they will arrange to comply with condition 1.11.1. Any agreements entered into become part of this licence. In seeking agreement the following factors, as a minimum, shall be addressed in any proposal submitted to the Agency:

- BAT;
- age, intake rate and life expectancy of 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.

#### 1.12 Determination of biodegradable municipal waste content of municipal waste

- 1.12.1 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 1.12.4 shall not be considered BMW.
- 1.12.2 Bio-stabilised residual wastes meeting the requirements of Condition 1.12.4 received at the landfill facility may be included in the determination of MSW quantities accepted at the facility for the purposes of Condition 1.11.1.
- 1.12.3 In determining BMW content, the licensee shall use approved calculation factors for BMW content of municipal waste streams published by the EPA. With the agreement of the EPA, alternative factors can be used if they have been determined following waste characterisation carried out in accordance with EPA-approved characterisation protocols including, where appropriate, the use of EPA-approved contractors.
- 1.12.4 In the case of bio-stabilised residual wastes, stabilisation means the reduction of the decomposition properties of the waste to such an extent that offensive odours are minimised and that the respiration activity after four days ( $AT_4$ ) is  $<10\text{mg O}_2/\text{g DM}$  until 1 January 2016 and  $<7\text{mg O}_2/\text{g DM}$  thereafter.
- 1.12.5 Bio-stabilised residual wastes shall be monitored in accordance with Schedule D.8.
- 1.12.6 Waste that was accepted to the body of the landfill as stabilised but subsequently is found not to meet the stabilisation standard set out in Condition 1.12.4 shall be notified to the Agency and included in the calculation of BMW accepted to the body of the landfill when assessing compliance with Condition 1.11.1. In the event of failure to meet the stabilisation standard, each and every load of bio-stabilised residual waste accepted from the failed source following receipt of the failed test result shall be tested, notwithstanding the testing frequency set out in Schedule D.8, until otherwise agreed with the Agency.

- 1.12.7 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with condition 1.11.1, which shall be available for inspection by Agency personnel.

*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 experience 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 by the Agency) and associated on site assessment appraisal within twelve months of appointment.
- 2.1.4 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience, as required and shall be aware of the requirements of this licence.

### **2.2 Management Structure**

- 2.2.1 The licensee shall maintain written details of the updated management structure of the facility to the Agency. 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 at the facility. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

- 2.3.2 The EMS shall include as a minimum the following elements:-

#### **2.3.2.1 Schedule of Environmental Objectives and Targets**

The licensee shall prepare and maintain a Schedule of Environmental Objectives and Targets. The schedule shall, as a minimum, provide for a review of all operations and processes, including an evaluation of practicable options, for energy and resource efficiency, the use of cleaner technology (including emissions prevention/reduction), and the beneficial recovery/recycling of waste in subsequent landfill engineering operations. The schedule shall include time frames for the

achievement of set targets and shall address a five-year period as a minimum. The schedule shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

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

#### 2.3.2.2 Environmental Management Plan (EMP)

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

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

2.3.2.3 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 included in the EMP. 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 the local community and to ensure that members of the public can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility.

### 2.5 Resource Use and Energy Efficiency

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

- (i) identify all opportunities for energy use reduction and efficiency;
- (ii) be carried out in accordance with the guidance published by the Agency - "Guidance Note on Energy Efficiency Auditing"; and
- (iii) be repeated at intervals as required by the Agency.

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

- 2.5.2 The licensee shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into the Schedule of Environmental Objectives and Targets.
- 2.5.3 The licensee shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity. Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets.

*REASON: To make provision for the proper management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment. To provide for the efficient use of resources and energy in all site operations.*

### **CONDITION 3 FACILITY INFRASTRUCTURE**

- 3.1 The licensee shall establish all infrastructure referred to in this licence as required by the conditions of this licence.
- 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 Security and stockproof fencing and gates shall be installed and maintained as described in Attachment D.1.a of the application around the entire boundary of the facility. The security fence and gates shall be at the locations shown on Drawing No. DG0001 Rev. A02. The base of the fencing shall be set in the ground. Subject to the implementation of the restoration and aftercare plan and to the agreement of the Agency, the requirement for such site security may be removed.

3.4.2 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.

3.4.3 The positioning of a number of CCTV surveillance system points as described in Attachment D.1.a of the application shall be notified to the Agency within one month of their installation

### 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 and the Civic Waste Facility itself 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 provided and 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 the leachate collection chamber.

### 3.8 Weighbridge

3.8.1 The licensee shall provide and maintain a weighbridge at the facility.

### 3.9 Wheel Cleaning

3.9.1 The licensee shall establish and maintain a wheelwash/dry wheel shake at the facility in accordance with the guidelines provided in the Agency's Landfill Manual, Landfill Site Design.

### 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 sewage arising on-site. Any percolation area shall satisfy the criteria set out in the *Wastewater Treatment Manual, Treatment Systems for Single Houses*, published by the Environmental Protection Agency.

3.10.2 Effluent from the Wastewater Treatment System shall be diverted to the leachate collection chamber.

### 3.11 Tank and Drum Storage Areas

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

3.11.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following: -

- (a) 110% of the capacity of the largest tank or drum within the bunded area; or
- (b) 25% of the total volume of substance which could be stored within the bunded area.

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

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

3.11.5 Bunds should be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004). The integrity and water tightness of all the bunds and their resistance to penetration by water or other materials stored therein shall be confirmed by the licensee and shall be reported to the Agency following their installation and prior to their use as a storage area. This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.

### 3.12 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 by 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; and
- d) The side walls shall be designed and constructed to achieve an equivalent protection.

3.12.2 The liner detailed design and 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 Formation levels of the liner in each cell shall be agreed by the Agency prior to construction of the liner.

### 3.13 Buffer Zone



- 3.13.1 A 50m Buffer Zone, in which no waste shall be landfilled, shall be provided and maintained between the landfill footprint and the intersection of the southern boundary and south western boundary of the facility, adjacent to the nearby residences.
- 3.13.2 A minimum 5m buffer zone shall be provided and maintained between the landfill footprint and the facility boundary in all other areas of the extended facility, excluding the area referred to in Condition 3.13.1.

#### 3.14 Leachate Management Infrastructure

- 3.14.1 Leachate management infrastructure shall be provided and maintained at the facility as described in Section D.4 of the application and specified in Volume 2, Sections 3.3.8, 3.3.9 and 3.3.10 of the EIS.
- 3.14.2 Leachate shall be treated off-site at a suitable Wastewater Treatment Plant agreed in advance by the Agency.
- 3.14.3 Conveyance of leachate to a suitable Wastewater Treatment Plant shall be agreed in advance by the Agency.
- 3.14.4 All structures for the storage of leachate shall be fully enclosed except for inlet and outlet piping.

#### 3.15 Landfill Gas Management

- 3.15.1 Infrastructure for the active collection and flaring of landfill gas shall be installed at the facility. This shall include infrastructure for the collection and flaring of landfill gas arising from waste deposits in the 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.
- 3.15.2 The combustion air supply to the enclosed gas flare shall be controlled so as to achieve a minimum temperature of 1,000°C and 0.3 second retention time.
- 3.15.3 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.
- 3.15.4 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.
- 3.15.5 The licensee shall maintain all gas wells, pipework, valves, pumps, flares and other infrastructure that form part of the landfill gas management scheme in a safe and fully operational manner.
- 3.15.6 If landfill gas utilisation at the facility is assessed to be feasible, as may be agreed by the Agency, the licensee shall install, commission and maintain a system for the utilisation of landfill gas. The licensee shall install continuous carbon monoxide monitoring on the outlets of the gas engine(s) prior to their commissioning.

#### 3.16 Surface Water Management

- 3.16.1 Effective surface water management infrastructure shall be provided and maintained at the facility during construction, operation, restoration and aftercare of the facility. As a minimum, the infrastructure shall be capable of the following: -
  - a) The prevention of contaminated water and leachate discharges into surface water drains and courses; and

- b) The collection/diversion of run off arising from capped and restored areas. All surface water arising from capped and restored areas shall be diverted to a surface water retention pond.

Surface water run-off arising from 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 an oil separator 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). The licensee shall comply with the management programme for the control of surface water run-off from the facility.

### 3.17 Groundwater Management

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

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

Any groundwater and surface water arising from the construction of the facility shall be diverted to the surface water retention pond.

### 3.18 Civic Waste Facility

3.18.1 Unless otherwise agreed by the Agency, the licensee shall provide and maintain a Civic Waste Facility.

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

### 3.19 External Access Road

3.19.1 Traffic awaiting access to the landfill shall queue inside the facility boundary along the site access road only, and not along the public road.

### 3.20 Telemetry

3.20.1 A telemetry system shall be installed and maintained at the facility. This system shall include:-

- a) Recording of leachate levels in the lined cells; and
- b) Recording of leachate levels in the leachate storage chamber.

### 3.21 Monitoring Infrastructure

#### 3.21.1 Landfill Gas

(i) The licensee shall install landfill gas monitoring infrastructure as follows:

- a) The licensee shall review annually the risk assessment to identify all on-site structures at risk from landfill gas migration/accumulation and implement appropriate monitoring and control measures. The results of this assessment (to include a schedule of 'at-risk structures' and details of monitoring/control results/measures) are to be documented and maintained on site for inspection by

Agency officers. Any revisions to the assessment shall be documented in the site safety plan.

- b) Perimeter landfill gas monitoring boreholes shall be constructed and installed at approximately 45m intervals around the periphery of the landfill footprint. The construction of the boreholes shall be phased so as to match the phased development of the cells. These monitoring points shall be located so as to monitor effectively the occurrence of off-site migration of landfill gas.
- c) A minimum of two boreholes per cell within the cell.

#### 3.21.2 Groundwater

- a) The licensee shall as a minimum and subject to the agreement of the relevant landowners, install one additional groundwater monitoring point upgradient and two additional groundwater monitoring points downgradient of the facility to allow for the sampling and analyses of groundwater.
- b) The licensee, with the agreement of the Agency, shall provide and maintain a series of monitoring boreholes along the length of the northern boundary of the extended facility adjacent to Rampere Stream to allow for the sampling and analyses of groundwater.

#### 3.21.3 Leachate

The licensee shall install leachate monitoring points in each operational cell to allow for the determination of leachate levels and the sampling and analyses of leachate.

#### 3.21.4 Replacement of Infrastructure

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 agreed Restoration and Aftercare Plan shall incorporate the plan submitted in Vol 3, Appendix 6 of the EIS and shall detail the phasing of restoration of the facility including the final profile of the facility, ensuring that the final height of the facility peak does not exceed 146mOD Malin Head.

### 4.2. Final Capping

4.2.1. Unless otherwise agreed with 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.

- 4.3. No material or object that is incompatible with the proposed restoration of the facility shall be present within one metre of the final soil surface levels.
- 4.4. Where tree planting is to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Combined topsoil and subsoil depths shall be a minimum of 1m.
- 4.5. Unless otherwise agreed by the Agency, the restoration of the facility shall be completed within twelve months of reaching the final profile agreed under Condition 4.1.
- 4.6. Soil Storage
  - 4.6.1. All soils shall be stored to preserve the soil structure for future use.
- 4.7. 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 Wastes shall be accepted at the facility only from holders of waste collection permits issued under the Waste Management (Collection) Permit Regulations, 2007, unless exempted. Copies of the Waste Collection Permits, Waste Licences and Waste Permits must be maintained at the facility.
- 5.3 Waste Acceptance and Characterisation Procedures
  - 5.3.1 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 updated procedures shall also 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.
  - 5.3.2 Gypsum wastes shall not be placed in any landfill cell accepting biodegradable waste.
- 5.4 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.
- 5.5 All waste arriving at the facility, excluding waste arriving at the Civic Waste Facility shall be processed through the main site weighbridge operated by the licensee. Data on incoming waste shall be recorded electronically and be available for inspection on site.
- 5.6 Working Face
  - 5.6.1 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.
- 5.6.2 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.
- 5.6.3 The working face, or faces, shall each day at the end of the day, be covered with suitable material.
- 5.7 Daily and Intermediate Cover
- 5.7.1 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.
- 5.7.2 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.
- 5.7.3 Bio-stabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 1.12.4, 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.
- 5.8 Landscaping
- 5.8.1 Landscaping work shall commence in accordance with the agreed landscaping plan. The plan shall include the following:
- a) Details of planting around the buffer zones described in Condition 3.13
  - b) A programme of planting
- 5.8.2 The noise/visual barrier shall be planted and screened.
- 5.8.3 The existing hedgerow network which forms the boundary of the facility shall be retained and enhanced by the licensee.
- 5.8.4 The licensee shall consult with adjacent residents in advance, in relation to any landscape proposals/measures required under Condition 5.8.
- 5.9 Operational Controls
- 5.9.1 The landfill shall be filled in the order Cell 1 to Cell 3. Waste will be filled starting at the north end and will progress in a southerly direction.
- 5.9.2 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.9.3 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 landfill gas or leachate collection systems only, or with the prior agreement from the Agency.
- 5.9.4 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.

- 5.9.5 Filled cells shall be permanently capped within twelve months of the cells having been filled to the required level.
- 5.9.6 Scavenging shall not be permitted at the facility.
- 5.9.7 Gates shall be locked shut when the facility is unsupervised.
- 5.9.8 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.9.9 Fuels shall be stored only at appropriately bunded locations on the facility.
- 5.9.10 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.9.11 No smoking shall be allowed on the facility other than in the administration building.

#### 5.10 Waste Handling

##### 5.10.1 Sludges

- 5.10.1.1 Only treated sewage sludge with greater than 25% solids shall be accepted at the landfill extension. Only treated sewage sludge with a solids content greater than 17% shall be disposed of, prior to operation of the landfill extension.
- 5.10.1.2 Treated sewage sludge shall be accepted at the facility only between the hours of 0830 hrs and 1400 hrs, Monday to Friday inclusive. All sewage sludge shall be covered immediately with other waste.
- 5.10.1.3 In addition to the characterisation required under the Waste Acceptance Procedures, the licensee shall carry out analyses to include % solids on a minimum of ten samples per annum for all sludges being accepted at the facility. The results of these analyses shall be presented in the Annual Environmental Report (AER).

#### 5.11 Off-site Disposal and Recovery

5.11.1 Waste sent off-site for recovery or disposal shall be conveyed by a waste carrier agreed in advance by the Agency only. Any request for such agreement of a waste carrier shall include the following:-

- i) Copies of the waste carrier's permit(s) under the Waste Management (Collection Permit) Regulations 2007; and
- ii) Details of the waste types it is proposed the carrier will transfer from the facility

5.11.2 All waste transferred from the facility shall be transferred to an appropriate facility agreed by the Agency only. Any request for agreement of such a facility shall be forwarded to the Agency at least one month in advance of its proposed use and shall include the following;

- i) A copy of the waste permit or waste licence where applicable;
- ii) The proposed waste types and quantities; and
- iii) Details of any limitations on waste types and quantities acceptable at the facility

#### 5.12 Civic Waste Facility

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

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

- a) Into a skip;
- b) Into a receptacle for recovery; and
- c) In the case where inspection is required, into a designated inspection area.

- 5.12.3 The licensee shall assign and clearly label each container at the Civic Waste Facility to indicate their contents.
- 5.12.4 At the end of the working day the floor of the Civic Waste Facility shall be cleared of waste.
- 5.12.5 Domestic waste delivered to the Civic Waste Facility for disposal shall be deposited at the working face at least weekly or removed off-site to an alternative facility agreed by the Agency.
- 5.13 Leachate Management
- 5.13.1 Leachate levels in the waste shall not exceed a level of 1.0m over the top of the liner at the base of the landfill.
- 5.13.2 The frequency of leachate removal/discharge from the leachate lagoon shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoon at all times.
- 5.13.3 Unless treated on the facility, leachate stored in the leachate storage chamber shall be disposed of by tankering off-site in fully enclosed road tankers, unless otherwise agreed by the Agency.
- 5.13.4 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.
- 5.14 Maintenance
- 5.14.1 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.
- 5.14.2 The leachate collection chamber shall be inspected and certified fit for purpose every three years by an independent and appropriately qualified chartered engineer.
- 5.14.3 The licensee shall maintain and clearly label and name all sampling and monitoring locations.
- 5.14.4 The wheel-wash shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel-wash and disposed of at the working face or to a skip.
- 5.15 The waste acceptance procedures established under Condition 5.3.1 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.
- 5.16 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 appropriate operation of the facility to ensure protection of the environment.*

## CONDITION 6 EMISSIONS

- 6.1. No specified emission from the facility shall exceed the emission limit values set out in *Schedule C: Emission Limits*, of this licence. There shall be no other emissions of environmental significance.
- 6.2. The licensee shall ensure that the activities shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.
- 6.3. Landfill Gas
- 6.3.1. The following are the trigger levels for landfill gas emissions from the facility measured in any service duct or manhole on, at or immediately adjacent to the facility and/or at any other point located outside the body of the waste: -
- a) Methane, greater than or equal to 1.0% v/v; or
  - b) Carbon dioxide, greater than or equal to 1.5% v/v.
- 6.3.2. The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of :-
- a) In the case of landfill gas flare:  
Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen.
- 6.3.3. Emission limits for emissions from landfill gas flare to atmosphere in this licence shall be interpreted in the following way:-
- 6.3.3.1. Continuous monitoring
- a) No 24 hour mean value shall exceed the emission limit value;
  - b) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value; and
  - c) No 30-minute mean value shall exceed twice the emission limit value.
- 6.3.3.2 Non-Continuous Monitoring
- a) For any parameter where, due to sampling/analytical limitations, a 30 minute samples is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value;
  - b) For all other parameters, no 30 minute mean value shall exceed the emission limit value; and
  - c) For flow, no hourly or daily mean value shall exceed the emission limit value.
- 6.4. Emissions to Groundwater
- 6.4.1 There shall be no direct emissions to groundwater.
- 6.4.2 The licensee shall maintain and submit to the Agency for its agreement any proposals for their revision, groundwater monitoring trigger levels in accordance with the requirements of Directive 1999/31/EC.
- 6.5. Emissions to Surface Water
- 6.5.1. No raw leachate, treated leachate or contaminated surface water shall be discharged to surfacewater.



6.5.2. No substance shall be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish.

6.5.3. The outlet from the retention ponds shall be closed when the criteria/trigger levels agreed with the Agency are exceeded in the discharge from the ponds. Conductivity, pH and TOC monitoring shall be carried out in the surface water retention pond.

6.6. Disposal of Leachate

6.6.1. No leachate shall be discharged to surface water

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

## **CONDITION 7 NUISANCE CONTROL**

7.1 The licensee shall ensure that vermin, birds, flies, mud, dust, litter, noise and odours do not give rise to nuisance at the facility or in the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution.

7.2 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay.

7.3 Litter Control

7.3.1 The measures and infrastructure as described in Attachment C.8 of the application shall be applied to control litter at the facility.

7.3.2 Litter fencing shall be installed and maintained around the perimeter of the active tipping area to the specifications described in the Agency's Landfill Manual, Landfill Operational Practices prior to the disposal of any waste in any cell.

7.3.3 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting as follows: -

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

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

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

7.4 Noise/Disturbance

7.4.1 Prior to the commencement of the operation of the extended facility, the licensee shall ensure that a noise barrier is constructed along the south-western corner of the facility as described in Volume II Section 5.8.2 of the EIS and shown on Figure No. 5.2 and 5.3. and in Article 14 reply received on 20<sup>th</sup> June 2003. The location of the noise/visual barrier is to be agreed in advance by the Agency.

7.5 Dust Control

7.5.1 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.

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

#### 7.7 Bird Control

7.7.1 A scavenging-bird control program shall be devised and implemented in agreement with the Agency that will deter birds from gathering on and feeding at the facility by the use of birds of prey and/or other agreed bird-control techniques. The program shall be revised as necessary, and in any case maintained until the waste activities cease and all the waste is capped to the written satisfaction of the Agency. The use of gas-operated bird scaring devices is prohibited at the facility.

*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 carry out monitoring at the additional monitoring points in the extended facility for landfill gas, groundwater, surfacewater, noise and dust monitoring locations, in accordance with proposals agreed by the Agency.

8.3 The licensee shall amend the frequency, locations, methods and scope of monitoring as required by this licence upon the written instruction of the Agency only 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.

8.4 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.

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

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

8.7 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 relevant experience of all persons that will carry out sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring.

#### 8.8 Groundwater Monitoring

8.8.1 The licensee shall, subject to the agreement of the well owners, commence a programme for the representative monitoring of groundwater quality of private wells. The scope of this monitoring programme shall be agreed in advance by the Agency.

#### 8.9 Meteorological Monitoring

8.9.1 The licensee shall provide for the monitoring/collection of meteorological data as specified in *Schedule D.6: Meteorological Monitoring*, of this licence.

- 8.9.2 The licensee shall install in a prominent location on the facility a wind sock or other wind direction indicator.
- 8.10 Topographical Survey
- 8.10.1 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.
- 8.11 Biological Assessment
- 8.11.1 A biological assessment of Rampere Stream shall be undertaken annually. This assessment shall use appropriate biological methods such as the EPA Q-rating system for the assessment of rivers and streams. The location of monitoring points shall be agreed by the Agency.
- 8.12 Archaeological Assessment
- 8.12.1 Prior to the development of any undisturbed area, the advice of the Development Applications Section, Department of the Environment, Heritage and Local Government (formerly known as Dúchas) shall be sought. On completion of such development a report of the results of any archaeological monitoring shall be submitted to Development Applications Section, Department of the Environment, Heritage and Local Government (formerly known as Dúchas) and to the Agency.
- 8.13 Stability Assessment
- 8.13.1 The licensee shall carry out a stability assessment annually of the side slopes of the facility.
- 8.14 Nuisance Monitoring
- 8.14.1 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, noise and odours. Written subjective daily odour assessments shall be carried out by site personnel either prior to, or immediately following their arrival on-site, to include the area surrounding the sensitive receptors around the boundary of the site. Records of these assessments are to be maintained on site and available for inspection by Agency officers.
- 8.15 Odour Monitoring
- 8.15.1 The licensee shall undertake an independent odour assessment of the facility annually, unless otherwise agreed with the Agency, which shall include but is not limited to the identification and quantification of any significant odour sources and an assessment of the suitability and adequacy of the control system(s) for odour sources at the facility. The scope and methodology for this assessment shall be agreed by the Agency prior to its completion.
- 8.16 Waste Testing
- 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. The licensee shall maintain documented criteria to establish and determine significant adverse effects on groundwater quality as a result of landfilling activities at the facility, in accordance with proposals agreed with the Agency. In the event that monitoring of local wells indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply, this shall be treated as an emergency and the licensee shall provide an alternative supply of water to those affected.
- 9.4.4. In the event that monitoring of the slide slopes of the facility indicate that there may be a risk of slope failure this will be treated as an emergency.
- 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. To provide for the protection of the environment.*

## CONDITION 10 RECORDS

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

- a) The current waste licence relating to the facility;
- b) The current EMS for the facility;
- c) The previous year's AER for the facility; and
- d) All written procedures produced by the licensee which relate to the licensed activities.

10.2 The licensee shall maintain a written record for each load of waste arriving at the facility. 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, in writing, notify the Agency without delay of any waste that arrived at the facility that does not meet the waste acceptance criteria.

*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, Office of Environmental Enforcement, 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-e), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident;
- c) In the event of any incident which relates to discharges to surface/sewer water, notify Eastern 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:

- (i) the recovery of Construction and Demolition Waste;
- (ii) the recovery of other waste in landfill operations, including restoration;
- (iii) the recovery of energy through landfill gas combustion.

11.4 Reports relating to Facility Operations

11.4.1. Leachate Handling Procedures

11.4.1.1 The licensee shall submit to the Agency for its agreement Leachate Handling Procedures for the handling of leachate on the facility and during removal from the collection chamber and subsequent transport/discharge to the Waste Water Treatment Plant.

11.4.2 Operation in Adverse Wind Conditions

11.4.2.1 The licensee shall maintain procedures agreed with the Agency for operation of the facility in adverse wind conditions.

11.5 Vermin and Flies

11.5.1 The licensee shall maintain and implement an agreed procedure for the control and eradication of vermin and fly infestations at the facility. This procedure should include as a minimum, operator training, details on the rodenticide(s) and insecticide(s) to be

used, mode and frequency of application and measures to contain sprays within the facility boundary.

#### 11.6 Monitoring Locations

11.6.1 All monitoring locations shall be as stipulated in this licence or as agreed by the Agency. Following any alteration or addition to monitoring locations stipulated herein, as may be agreed by the Agency, the licensee shall submit to the Agency an appropriately scaled drawing(s) showing all the monitoring locations. The drawing(s) shall include the reference code of each monitoring point.

#### 11.7 Annual Environmental Report

11.7.1 The licensee shall submit to the Agency, by the 31<sup>st</sup> March of each year, an Annual Environmental Report (AER) covering the previous calendar year.

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

#### 11.8 Reporting to demonstrate compliance with diversion targets

The Licensee shall report to the Agency such data and records, and at such frequency, as may be specified by the Agency in order to demonstrate compliance with the requirements of Condition 1.11.1. From 1 January 2010, and unless otherwise advised by the Agency, the licensee shall submit quarterly summary reports to the Agency within one week of the end of each quarter on the quantity of MSW and BMW accepted at the landfill during the preceding quarter and on a cumulative basis for the calendar year to date. The report shall detail the tonnage of MSW and BMW accepted and the basis (including all calculation factors) on which the figures have been calculated.

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

## **CONDITION 12 CHARGES AND FINANCIAL PROVISIONS**

#### 12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €21,184, 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 31<sup>st</sup> 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 from a date to be set by the Agency establish and maintain a fund, or provide a written guarantee, that is adequate to assure the Agency that the licensee is at all times financially capable of implementing the Restoration and Aftercare Plan required by Condition 4. The type of fund established and means of its release/recovery shall be agreed by the Agency prior to its establishment.
- 12.2.2 Any fund established shall be maintained in an amount always sufficient to underwrite the current Restoration and Aftercare Plan.
- 12.2.3 The licensee shall revise the cost of restoration and aftercare annually and any details of the necessary adjustments to the fund or guarantee must, within two weeks of the revision, be forwarded to the Agency for its agreement. Any adjustment agreed by the Agency shall be effected within four weeks of said written agreement.
- 12.2.4 Unless otherwise agreed any revision to the fund shall be computed using the following formula:-

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

Where:-

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

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

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

### 12.3 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.

### 12.4 Environmental Liabilities

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

12.4.2 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.

12.4.3 As part of the measures identified in Condition 12.4.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities associated

with operation, including closure and aftercare, of the facility not already covered in condition 12.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.4.1.

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

# SCHEDULE A : Waste Acceptance

## A.1 Waste Acceptance

**Table A.1 Waste Categories and Quantities**

Waste Type	Maximum (Tonnes Per Annum) <sup>Note 1</sup>
Treated Sewage Sludge	3,000 <sup>Note 3</sup>
Household & Commercial	47,000
<b>TOTAL</b>	50,000 <sup>Note 2</sup>

**Note 1:** The maximum annual tonnage of individual waste types listed in Table A.1 for disposal at the landfill may be altered subject to agreement of the Agency provided that the total maximum tonnage deposited does not exceed 50,000 tonnes per annum.

**Note 2:** Construction and demolition waste shall not be disposed of at the facility but can be accepted for use as daily cover, site construction works and landfill restoration.

**Note 3:** Only sludges with >25% solids shall be disposed of at the landfill extension.

**Table A.2 Total Permitted Landfill Capacity**

Total quantity of waste permitted to be placed at the landfill facility (over authorised life of facility)	361,624 m <sup>3</sup>
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# SCHEDULE B : Specified Engineering Works

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

## SCHEDULE C : Emission Limits

### C.1 Noise Emissions:

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

Day Db(A) $L_{Aeq}$ (30 minutes)	Night dB(A) $L_{Aeq}$ (30 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 ( $mg/m^2/day$ ) <sup>Note 1</sup>
350

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

### C.4 Surface Water Discharge Limits:

Measured at the outlet from the surface water retention pond.

Level (Suspended Solids mg/l)
35

### C.5 Emission Limits Values for Landfill Gas Plant

Emission Point Reference numbers: *To be agreed by the Agency in advance.*

Volume to be emitted:  $3000m^3/hr$  (unless results from modelling suggests otherwise)

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

Parameter	Flare (enclosed) Emission Limit Value <sup>Note 1,2</sup>	Utilisation Plant Emission Limit Value <sup>Note 1,2</sup>
Nitrogen oxides ( $NO_x$ )	$150 mg/m^3$	$500 mg/m^3$
CO	$50 mg/m^3$	$1,400mg/m^3$
Particulates	Not applicable	$130 mg/m^3$
Total Volatile Compounds (VOC's)	Not applicable	$1,000mg/m^3$
Total non-methane VOC's	Not applicable	$75mg/m^3$
Total organic carbon (TOC)	$10 mg/m^3$	Not applicable
Hydrogen Chloride	$50 mg/m^3$ (at mass flows > 0.3 kg/h)	$50 mg/m^3$ (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	$5 mg/m^3$ (at mass flows > 0.05 kg/h)	$5 mg/m^3$ (at mass flows > 0.05 kg/h)

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

**Note 2:** 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 within Waste and Boundary Locations	Dust Deposition Note 1	Noise Note 4	Surface Water	Ground Water Note 5	Leachate
Stations	Stations	Stations	Stations	Stations	Stations
Within Waste Note 1, 2		NSL's NSL1 NSL2 NSL3 NSL4	SW2 SW3 SW4 SW5 SW6 SW8 PD-1 PD-2	AQ1 AQ4 GW1 LFG3 BD5	Leachate Collection Chamber Note 6
Perimeter Locations Note 3 GW1 LFG1 LFG2 LFG3 BD3A			Inlet and Outlet to surface water pond	Private Wells H1 H2 H3 H4 H5	Within Cell Note 7
Site Office and Buildings			Biological assessment locations to be agreed by the Agency.		
Flare/Utilisation Plant Note 1					

**Note 1:** Locations to be agreed by the Agency.

**Note 2:** At least two per cell within lined cells.

**Note 3:** Perimeter wells to monitor for potential off-site migration of landfill gas to be provided in accordance with Condition 3.21.1.

**Note 4:** Additional monitoring locations to be agreed by the Agency.

**Note 5:** Additional groundwater boreholes to be installed as per Condition 3.21.2.

**Note 6:** Leachate collection chamber and one other leachate location to be agreed by the Agency to be monitored for leachate composition and level. Leachate level only at other monitoring points.

**Note 7:** Leachate monitoring locations within cells to be agreed and confirmed with the Agency as required by Condition 3.21.1.

## 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/ Vents/Wells	Site Office <sup>Note 3</sup>	
Methane (CH <sub>4</sub> ) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO <sub>2</sub> ) % v/v	Monthly	Weekly	Infrared analyser/ flame ionisation detector
Oxygen(O <sub>2</sub> ) % v/v	Monthly	Weekly	Electrochemical cell
Atmospheric Pressure	Monthly	Weekly	Standard
Temperature	Monthly	Weekly	Standard

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

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

**Note 3:** The licensee shall ensure, to the Agency's satisfaction, that there are landfill gas monitoring boreholes located between the fill and identified proximal residential buildings. These locations to be monitored on a weekly basis.

## D.3 Dust

Table D.3.1 Dust Monitoring Frequency and Technique

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

**Note 1:** Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). Any modifications to eliminate interference due to algae growth in the gauge should be reported to the Agency.

**Note 2:** Monthly interval for the monitoring station(s) to be located in the south-western part of the site adjacent to residences. Otherwise, twice during the period May to September.

## D.4 Noise

Table D.4.1 Noise Monitoring Frequency and Technique

Parameter	Monitoring Frequency <sup>Note 2</sup>	Analysis Method/Technique
L(A) <sub>EQ</sub> [30 minutes]	Biannual	Standard <sup>Note 1</sup>
L(A) <sub>10</sub> [30 minutes]	Biannual	Standard <sup>Note 1</sup>
L(A) <sub>90</sub> [30 minutes]	Biannual	Standard <sup>Note 1</sup>
Frequency Analysis (1/3 Octave band analysis)	Biannual	Standard <sup>Note 1</sup>

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

**Note 2:** Monitoring at noise sensitive receptors on the south-western boundary to be undertaken on a quarterly basis. One of these events to coincide with any construction works being undertaken at the time.

### D.5 Surface Water, Groundwater and Leachate

Table D.5.1 Water and Leachate - Parameters / Frequency

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

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

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

**Note 3:** Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.

**Note 4:** Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).

**Note 5:** 2 surface water locations, 3 groundwater locations and 2 leachate locations to be agreed by the Agency for these parameters.

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

### D.6 Meteorological Monitoring

Table D.6.1 Meteorological Monitoring:  
Data to be obtained from a representative national Meteorological Station.

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

Location: Utilisation plant and enclosed flare (**note exact location of flare may need to be agreed by the Agency in advance**).

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

Parameter	Flare (enclosed)	Utilisation Plant	Analysis Method/Technique <sup>Note 1</sup> <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	Annually	Flue gas analyser
SO <sub>2</sub>	Annually	Annually	Flue gas analyser
Particulates	Not applicable	Annually	Isokinetic/Gravimetric
Total Voc's	Not applicable	Annually	Flame ionisation
Total non-methane VOC's	Not applicable	Annually	Adsorption-thermal desorption
TOC	Annually	Annually	Flame ionisation
Hydrochloric acid	Annually	Not applicable	Impinger /Ion Chromatography
Hydrogen fluoride	Annually	Annually	Impinger /Ion Chromatography

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

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



**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 <sup>Note 1</sup>	Report Submission Date
Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	By the 31 <sup>st</sup> March each year.
Notification of waste loads not meeting waste acceptance criteria	As they occur	As per Condition 10.8
Compliance with waste diversion targets	As required by the Agency	As per Condition 11.9
Record of incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	One month after end of the three year period being reported on.
Specified Engineering Works reports	As they arise	Prior to the works commencing.
Monitoring of landfill gas	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Surface Water Quality	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Groundwater Quality	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Leachate	Quarterly	Ten days after end of the quarter being reported on.
Meteorological Monitoring	Annually	One month after end of the year being reported on.
Dust Monitoring	Three times a year	Ten days after the period being reported on.
Noise Monitoring	Biennially	One month after end of the year being reported on.
Biological Monitoring	Annually	As per Condition 8.11
Side Slope Stability assessment	Annually	As per Condition 8.13
Topographical survey	Annually	As per Condition 8.10
Any other monitoring	As they occur	Within ten days of obtaining results.

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

# **SCHEDULE F : Content of the Annual Environmental Report**

## **Annual Environmental Report Content**

Reporting Period.

Waste activities carried out at the facility.

Quantity and Composition of waste 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.

Updates to Landfill environmental Management Plan (LEMP)

Review of Environmental Liabilities.

Report on waste recovery.

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

Tank, pipeline and bund testing and inspection report.

Reported incidents and Complaints summaries.

Review of Nuisance Controls.

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

Report on training of staff.

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.

**Sealed by the Seal of the Agency on this ... day of September 2009**

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

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**..., Director /Authorised Person**

