

AMENDMENT UNDER SECTION 76(4) OF THE WASTE MANAGEMENT ACTS, 1996 to 2003

This licence was amended on 17/10/2005 under Section 76(4) of the Waste Management Acts, 1996 to 2003. The details of the amendment must be read in conjunction with the licence. The amendment document is titled 165-1S76(4)Amendment A.doc.

This licence was amended on 11<sup>th</sup> September 2009 under Section 42B(1) of the Waste Management Acts, 1996 to 2008. The details of Amendment B must be read in conjunction with this licence. The amendment document is entitled "Technical Amendment B".

LICENCE REG. NO. W0165-01 HAS BEEN REVISED.  
Please note that licence Reg. No. W0165-01 was reviewed and replaced by  
the revised licence Reg. No. W0165-02



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

## LANDFILL FOR NON-HAZARDOUS WASTE WASTE LICENCE

<b>Waste Licence</b>	165-1
<b>Register Number:</b>	
<b>Licensee:</b>	Greenstar Recycling Holdings Limited
<b>Location of Facility:</b>	Ballynagran Residual Landfill, Ballynagran, Coolbeg and Kilcandra, County Wicklow.

# INTRODUCTION

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

The licence is for the development and operation of a landfill at a greenfield site at Ballynagran, Coolbeg and Kilcandra, County Wicklow. The proposed facility covers an area of approximately 128 hectares and the landfill footprint will occupy approximately 21 hectares. The landfill, which will accept residual non-hazardous household, commercial and industrial waste will consist of 5 separate phases and contain a total of 21 separate cells. Sludges are not permitted to be disposed of at the facility.

The facility will be designed to accept a total of 175,000 tonnes of waste per annum for disposal and 28,000 tonnes of waste per annum for recovery. The anticipated lifespan of the facility is 15 years. The licence requires that a buffer zone of 100 metres within which no waste is deposited be maintained between the landfill footprint and the boundary of the facility. The licensee will be required to undertake a landscaping programme and this is required to commence within the first planting season.

The infrastructure to be developed at the facility includes a lining system, leachate collection and management, landfill gas collection and flaring, weighbridges, wheelwash, administration building and a waste inspection and quarantine area. There is a borrow area(s) within the site boundary which will be used for the extraction of gravel for construction purposes. The licensee will be required to put in place a surface water management system at the facility prior to the commencement of any other construction works or excavation of the borrow area.

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

The licence sets out in detail the conditions under which Greenstar Recycling Holdings Limited will operate and manage this facility.

# *Table of Contents*

	Page No.
<b>REASONS FOR THE DECISION</b>	<b>1</b>
<b><i>PART I ACTIVITIES LICENSED</i></b>	<b>1</b>
<b>INTERPRETATION</b>	<b>3</b>
<b><i>PART II CONDITIONS</i></b>	<b>6</b>
<b>CONDITION 1 SCOPE OF THE LICENCE</b>	<b>6</b>
<b>CONDITION 2 MANAGEMENT OF THE FACILITY</b>	<b>7</b>
<b>CONDITION 3 FACILITY INFRASTRUCTURE</b>	<b>8</b>
<b>CONDITION 4 RESTORATION AND AFTERCARE</b>	<b>14</b>
<b>CONDITION 5 FACILITY OPERATION AND WASTE MANAGEMENT</b>	<b>14</b>
<b>CONDITION 6 EMISSIONS</b>	<b>17</b>
<b>CONDITION 7 NUISANCE CONTROL</b>	<b>18</b>
<b>CONDITION 8 MONITORING</b>	<b>20</b>
<b>CONDITION 9 CONTINGENCY ARRANGEMENTS</b>	<b>21</b>
<b>CONDITION 10 RECORDS</b>	<b>22</b>
<b>CONDITION 11 REPORTS AND NOTIFICATIONS</b>	<b>24</b>
<b>CONDITION 12 CHARGES AND FINANCIAL PROVISIONS</b>	<b>26</b>
<b>SCHEDULE A : Waste Acceptance</b>	<b>28</b>
<b>SCHEDULE B : Specified Engineering Works</b>	<b>28</b>
<b>SCHEDULE C : Emission Limits</b>	<b>29</b>
<b>SCHEDULE D : Monitoring</b>	<b>30</b>
<b>SCHEDULE E : Recording and Reporting to the Agency</b>	<b>34</b>
<b>SCHEDULE F : Acceptance of Inert Waste</b>	<b>34</b>
<b>SCHEDULE G : Content of the Annual Environmental Report</b>	<b>35</b>

# DECISION & REASONS FOR THE DECISION

## *Reasons for the Decision*

The Environmental Protection Agency (the Agency) is satisfied, on the basis of the information available, that the requirements of Section 40(4) of the Waste Management Act, 1996 have been complied with in respect of the application for a waste licence for the activities listed hereunder in Part I.

In reaching this decision the Agency has considered the application and supporting documentation received from the applicant, all submissions and objections received from other parties and the reports of its inspectors.

## *Part I Activities Licensed*

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Agency, under Section 40(1) of the said Act hereby grants this Waste Licence to Greenstar Recycling Holdings Limited to carry on the waste activities listed below at Ballynagran Residual Landfill, Ballynagran, Coolbeg and Kilcandra, County Wicklow subject to twelve conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

*Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Act 1996*

<b>Class 1</b>	<b>Deposit on, in or under land (including landfill):</b>  This activity is limited to the deposit of non-hazardous waste into lined cells that are on, in or under land.
<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 and management of leachate and surface water at the facility.
<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 is the principal activity. This activity is limited to the construction of the landfill in distinct phases consisting of specially engineered lined cells, the deposit of non-hazardous waste into these lined cells and the collection of leachate and landfill gas.
<b>Class 6</b>	<b>Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule:</b>  This activity is limited to the treatment of leachate at the facility.
<b>Class 13</b>	<b>Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced:</b>  This activity is limited to the storage of unacceptable waste prior to its transport off-site to another facility.

<b>Class 4</b>	<b>Recycling or reclamation of other inorganic materials:</b> This activity is limited to the use of recycled construction and demolition waste as cover and/or construction material at the facility.
<b>Class 9</b>	<b>Use of any waste principally as a fuel or other means to generate energy:</b> This activity is limited to the utilisation of landfill gas at the facility.
<b>Class 11</b>	<b>Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:</b> This activity is limited to the use of recycled construction and demolition waste at the facility.
<b>Class 13</b>	<b>Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced:</b> This activity is limited to the storage of recycled construction and demolition waste prior to reuse.

# 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>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>Biodegradable waste</b>	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
<b>Condition</b>	A condition of this licence.
<b>Construction and Demolition Waste</b>	All wastes which arise from construction, renovation and demolition activities.
<b>Containment boom</b>	A boom which can contain spillages and prevent them from entering drains or watercourses.
<b>Cover material</b>	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials; or other cover material the use of which has been agreed with the Agency.
<b>Daily Cover</b>	Is the term used to describe material spread (about 150mm if soil cover is used) over deposited waste at the end of each day. Synthetic materials may also be used. Its objective is to minimise odour, the amount of litter generated and to control flies and access to the waste by birds and vermin. Where soils are used for daily cover, it is recommended that they be removed at the start of the day and subsequently reused as much as possible.
<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>Hazardous Waste</b>	As defined in Section 4(2) of the Act.
<b>Hours of Operation</b>	The hours during which the facility is authorised to be operational. The hours of operation of a facility are usually longer than the hours of waste acceptance to facilitate preparatory and completion works, such as the removal and laying of daily cover.
<b>Hours of Waste Acceptance</b>	The hours during which the facility is authorised to accept waste.
<b>Inert waste</b>	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.
<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 Footprint</b>	Refers to the part of the facility where waste is deposited in lined cells.
<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>	Greenstar Recycling Holdings Limited.
<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 twelve times per year, at approximately monthly intervals.
<b>Night-time</b>	2200 hrs to 0800 hrs.
<b>Non-hazardous Waste</b>	Any waste which is not defined as a “hazardous waste” under Section 4(2) of the Act.
<b>Recyclable Materials</b>	Those waste types, such as cardboard, batteries, gas cylinders, etc. which may be recycled.
<b>Quarterly</b>	At approximately three monthly intervals.

<b>Residual Waste</b>	Residual waste means the fraction of waste remaining after the treatment of the waste.
<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>Sludge</b>	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with greater than 2% dry matter.
<b>Specified Emissions</b>	Those emissions listed in <i>Schedule C: Emission Limits</i> , of this licence.
<b>Specified Engineering Works</b>	Those engineering works listed in <i>Schedule B: Specified Engineering Works</i> , of this licence.
<b>Treatment</b>	Treatment means the physical, thermal, chemical or biological processes, including sorting, that change the characteristics of the waste in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery.
<b>Trigger Level</b>	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
<b>Wastewater</b>	Contaminated water including water that has been used for washing and/or flushing (including foul water).
<b>White Goods</b>	Refrigerators, cookers, ovens and other similar appliances.
<b>EPA Working Day</b>	Refers to the following hours: 0900 hrs to 1730 hrs Monday to Friday inclusive.
<b>Working Face</b>	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.



## ***PART II CONDITIONS***

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

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and authorised by this licence.
- 1.2. For the purposes of this licence, the facility is the area of land outlined in red on Drawing No. 2001-144-02-01, Rev. A entitled 'Proposed Site Layout Map including Landfill Phases' of the application. Any reference in this licence to "facility" shall mean the area thus outlined in red.
- 1.3. This licence is for the purposes of waste licensing under the Waste Management Act, 1996 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.4. Only those waste types listed in *Schedule A: Waste Acceptance*, of this licence may be recovered and disposed of at the facility subject to the maximum quantities and other constraints specified in that Schedule and in 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 from 16 July 2003. Shredded tyres shall not be disposed of at the facility from 16 July 2006.
  - 1.5.2. No hazardous wastes, liquid wastes or sludges shall be disposed of at the facility.
  - 1.5.3. The licensee shall ensure that all waste accepted at the facility is subject to treatment. This provision may not apply to inert wastes for which treatment is not technically feasible nor to any 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.
- 1.6. Waste Acceptance Hours and Hours of Operation.
  - 1.6.1. Landfill
    - 1.6.1.1. Waste may only be accepted at the facility for disposal at the landfill between the hours of 8.00am and 6.00pm Monday to Saturday inclusive.
    - 1.6.1.2. The landfill at the facility may only be operated during the hours of 7.00am and 7.00pm Monday to Saturday inclusive.
    - 1.6.1.3. Waste shall not be accepted at the landfill on Sundays or on Bank Holidays.
- 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.
  - d) Any indication that environmental pollution has, or may have, taken place.
- 1.8. Where the Agency considers that a non-compliance with any condition of this licence has occurred, it may serve a notice on the licensee specifying.
  - 1.8.1. That only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice.

1.8.2. That the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice.

1.8.3. That the licensee shall carry out any other requirement specified in the notice.

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

1.9. Every plan, programme or proposal submitted to the Agency for its agreement pursuant to any condition of this licence shall include a proposed timescale for its implementation. The Agency may modify or alter any such plan, programme or proposal in so far as it considers such modification or alteration to be necessary and shall notify the licensee in writing of any such modification or alteration. Every such plan, programme or proposal shall be carried out within the timescale fixed by the Agency but shall not be undertaken without the agreement of the Agency. Every such plan, programme or proposal agreed by the Agency shall be covered by the conditions of this licence.

*REASON: To clarify the scope of this licence.*

## **CONDITION 2 MANAGEMENT OF THE FACILITY**

### **2.1 Facility Management.**

2.1.1 The licensee shall employ a suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced, deputy shall be present on the facility at all times during its operation.

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

2.1.3 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 Prior to the commencement of waste activities, the licensee shall submit written details of the 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.
- 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 establish and maintain an EMS. Prior to the commencement of waste activities at the facility, the licensee shall submit to the Agency for its agreement a proposal for a documented Environmental Management System (EMS) for the facility. Following

the agreement of the Agency, the licensee shall establish and maintain such a system. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

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

2.3.2.1 Schedule of Environmental Objectives and Targets:-

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

2.3.2.2 Environmental Management Plan (EMP):-

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

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

2.3.2.3 Corrective Action Procedures:-

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

2.3.2.4 Awareness and Training Programme:-

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

2.4 Communications Programme.

Within six months of the date of grant of this licence, the licensee shall establish and maintain a Communications Programme to inform and involve the local community and ensure that members of the public can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility.

**REASON:** *To make provision for the proper management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.*

## **CONDITION 3 FACILITY INFRASTRUCTURE**

3.1 The licensee shall establish all infrastructure referred to in this licence prior to the commencement of the licensed activities or 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.
- 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.
- f) Where environmental information relating to the facility can be obtained.

### 3.4 Facility Security.

3.4.1 Effective security and stockproof fencing and gates shall be installed and maintained at the facility as agreed in advance with the Agency.

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.
- b) A repair to the standard of the original gates and/or fencing shall be undertaken within three working days.

3.4.3 Prior to the acceptance of waste at the facility, CCTV shall be provided and maintained at the facility at locations which have been agreed with the Agency.

### 3.5 Facility Roads.

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

### 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. Drainage from these areas shall be directed to the leachate lagoon.
- 3.8 Weighbridge.
- 3.8.1 The licensee shall provide and maintain two weighbridges at the facility. Drainage from these areas shall be directed to the leachate lagoon.
- 3.9 Wheel Cleaning.
- 3.9.1 The licensee shall establish and maintain a wheelwash at the facility. Drainage from the wheelwash shall be directed to the leachate lagoon.
- 3.10 Wastewater Treatment System.
- 3.10.1 The licensee shall provide and maintain a Wastewater Treatment system at the facility for the treatment of wastewater arising from the on-site canteen, toilets and washroom facilities in the administration/maintenance buildings. The treated wastewater shall be discharged to the leachate lagoon.
- 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 The integrity and water tightness of all the bunds and their resistance to penetration by water or other materials stored therein shall be confirmed by the licensee and shall be reported to the Agency following its installation and prior to its use as a storage area.
- This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.
- 3.12 Lining:
- 3.12.1 The landfill liner shall comprise:-
- a) a composite liner consisting of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to  $1 \times 10^{-9}$  m/s, (or equivalent to be agreed with the Agency) overlain by a 2mm thick high density polyethylene (HDPE) layer.
  - b) a geotextile protection layer placed over the HDPE layer.

- c) a 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of  $1 \times 10^{-3}$  m/s, of pre-washed, uncrushed, granular, rounded stone (16 - 32mm grain size) incorporating leachate collection drains.
- d) the side walls shall be designed and constructed to achieve an equivalent protection.

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

3.12.3 The lining of the leachate lagoon and the surface water lagoon shall be a composite liner equivalent to the landfill liner and constructed using the same methods.

3.12.4 Following the placement of the liner system in all cells, the leachate lagoon and the surface water lagoon, the licensee shall commission an independent leak detection survey of the liner system.

3.12.5 Formation levels of the cells shall be as shown on Drawing No. 2001-144-02-02 (Rev. A) of the EIS.

### 3.13 Buffer Zone/Perimeter Berm

3.13.1 A Buffer Zone, in which no waste shall be landfilled, shall be provided and maintained within the facility. The Buffer Zone shall be a minimum of 100m between the landfill footprint and the facility boundary.

3.13.2 A perimeter berm shall be constructed around the landfill footprint. The berm shall be constructed prior to the development of the cells.

### 3.14 Leachate Management Infrastructure

3.14.1 Leachate management infrastructure shall be provided and maintained at the facility as described in Section 3.1.3 of the EIS and as shown on relevant drawings in the EIS.

3.14.2 Prior to the commencement of waste disposal activities, the licensee shall provide and maintain a leachate storage lagoon at the facility to facilitate the storage of leachate abstracted/collected from the waste.

3.14.3 All structures for the storage and/or treatment of leachate shall be fully covered except for inlet and outlet piping to prevent the ingress of rain.

3.14.4 Prior to the construction of the leachate lagoon, the licensee shall provide suitable infrastructure for the collection of leachate and wastewater and its subsequent tankering to an agreed off-site Waste Water Treatment Plant.

### 3.15 Landfill Gas Management.

3.15.1 Within six months of the date on which waste is first disposed of at the facility, infrastructure for the active collection and flaring of landfill gas shall be installed at the facility.

3.15.2 Until the operation of the landfill gas flare, passive landfill gas management at the facility shall be carried out. Landfill gas management and infrastructure shall meet the recommendations given in the Agency Manual on "Landfill Operational Practices".

3.15.3 The landfill gas flare shall be of an enclosed type design and the combustion air supply shall be controlled so as to achieve a minimum temperature of 1,000°C and 0.3 seconds retention time at this temperature. The design and operation of the landfill gas flare shall be agreed in advance with the Agency. Flares should be maintained in accordance with the manufacturers recommendations.

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.

### 3.16 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.

3.16.2 The surface water lagoon, associated surface water management infrastructure and the site access roads shall be constructed prior to the commencement of construction of the remainder of the facility.

3.16.3 The surface water lagoon shall be capable of dealing with all surface water run-off arising at the facility. A surface water cut-off drain shall be constructed around the external toe of the perimeter landfill embankment and this cut-off drain shall discharge to the surface water lagoon. The surface water drainage swales shall be designed and constructed in such a manner as to prevent erosion, stagnation and inadequate capacity.

3.16.4 The licensee shall consult with the Eastern Regional Fisheries Board in advance of the in-stream works associated with the culverting/bridging of the Long Ford stream.

3.16.5 Surface water run-off arising from impermeable surfaces and other areas as shown on Drawing No. 2001-144-02-05 (Rev. A) of the EIS shall pass through a Class I oil interceptor prior to discharging to the surface water lagoon.

### 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.
- b) the protection of other infrastructure, such as the liner, from any adverse effects caused by the groundwater.

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

### 3.18 External Access Road.

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

### 3.19 SCADA system

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

- a) Recording of levels in the lined cells, leachate lagoon and the surface water lagoon.
- b) Recording of flows to and flows in the perimeter stream ('Long Ford' stream).
- c) Quality of the surface water being discharged from the surface water lagoon to the perimeter stream ('Long Ford' stream).
- d) Status of penstock chamber on outlet from surface water lagoon and status of landfill gas flare.

- e) Permanent gas monitoring system to be installed in the administration building, weighbridge hut and any other enclosed structures at the facility.

The monitoring infrastructure (in relation to surface water) required by (a), (b), (c) and (d) above shall be operational prior to the commencement of surface water discharges from the surface water lagoon.

3.20 Prior to the commencement of waste disposal activities, the licensee shall provide and maintain a meteorological station at the facility capable of monitoring the parameters listed in *Schedule D.6: Meteorological Monitoring* of this licence.

3.21 Monitoring Infrastructure.

3.21.1 Landfill gas

- (i) The licensee shall install landfill gas monitoring infrastructure as follows:
  - (a) a permanent continuous gas monitoring system with an alarm in the site office and any other enclosed structures at the facility.
  - (b) perimeter landfill gas monitoring boreholes shall be constructed and installed at 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 cells.
  - (c) a minimum of two monitoring boreholes per cell within the waste mass.

The construction of the landfill gas monitoring boreholes shall be carried out so as to match the phased development of cells.

3.21.2 Leachate

- (i) Prior to the commencement of waste disposal activities, the licensee shall install leachate monitoring points in each cell and in the leachate lagoon to allow for the sampling and analyses of leachate.

3.21.3 Groundwater

- (i) Prior to the commencement of waste disposal activities, the licensee shall install and provide the groundwater monitoring locations specified in Table D.1.1 to allow for the sampling and analyses of groundwater.

3.21.4 Surface Water

- (i) Prior to the commencement of construction of the facility, the licensee shall install a continuous flow monitor to facilitate the monitoring of flows in the 'Long Ford' stream.
- (ii) The following shall be installed at the surface water lagoon: (a) penstock for preventing surface water discharges in the event that monitoring should indicate contamination of the surfacewater or that insufficient flow is available in the perimeter stream (Long Ford stream) (b) Class I oil interceptor and (c) chamber for continuous flow and discharge quality monitoring.

3.21.5 Replacement of Infrastructure:-

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

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



## **CONDITION 4 RESTORATION AND AFTERCARE**

- 4.1. Within eighteen months of the date of grant of the licence, the licensee shall submit a detailed Restoration and Aftercare Plan for the facility to the Agency for its agreement. The Restoration and Aftercare Plan for the facility shall incorporate the plan submitted in Section 4.10 of the EIS and shall refer to the phased restoration of the facility. The licensee shall restore the facility on a phased basis.
- 4.2. The final profile/height of the facility shall be as shown in Drawing No. 2001-144-02-03 (Rev. A) of the EIS.
- 4.3. Final Capping.
- 4.3.1. The final capping shall consist of the following:-
- a) Top soil (150 -300mm).
  - b) Subsoils, such that total thickness of top soil and subsoils is at least 1m.
  - c) Drainage layer of 0.5m thickness having a minimum hydraulic conductivity of  $1 \times 10^{-4}$  m/s.
  - 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.
  - e) Gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.
- 4.4. No material or object that is incompatible with the proposed restoration of the facility shall be present within one metre of the final soil surface levels.
- 4.5. Where tree planting is to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Combined topsoil and subsoil depths shall be a minimum of 1m.
- 4.6. Soil Storage.
- 4.6.1. All soils shall be stored to preserve the soil structure for future use.
- 4.6.2. The quantity of inert material which is stockpiled at the facility for the purposes of construction and restoration, should at any given time be no greater than that which will be required and utilised over the following three-month period.

*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 only be accepted at the facility from holders of waste collection permits issued under the Waste Management (Collection) Permit Regulations 2001 and from licensed/permitted facilities. 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 Prior to commencement of waste acceptance at the facility, the licensee shall submit to the Agency and obtain its agreement on written procedures for the acceptance and handling of all wastes. These procedures shall include details of the pre-treatment of all waste to be

carried out prior to acceptance at the facility and shall also include methods for the characterisation of waste in order to distinguish between inert, non-hazardous and hazardous wastes. The procedures shall have regard to the EU decision (2003/22/EC) on establishing the criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive (1999/31/EC) on the landfill of waste.

- 5.3.2 The acceptance of inert waste for recovery shall be as specified in *Schedule F: Acceptance of Inert Waste* of this licence.
- 5.4 All wastes shall be checked at the working face. Any wastes not suitable for acceptance shall be removed for recovery or disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area only. No waste shall be stored in the Waste Quarantine Area for more than one month.
- 5.5 Working Face.
- 5.5.1 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.
  - 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 25 metres in length and have a slope no greater than 1 in 3.
- 5.5.2 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.
- 5.5.3 The working face shall each day at the end of the day, be covered with suitable material.
- 5.6 Cover material.
- 5.6.1 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 Landscaping and Protection of Habitats/Ecology.
- 5.7.1 Landscaping of the facility as described in Section 4.10 and associated figures of the EIS shall be carried out within the first planting season from the date of grant of this licence.
- 5.7.2 Apart from the removal of hedgerow to facilitate the facility entrance, the existing hedgerow network which forms the boundary of the facility shall be retained by the licensee. The existing hedgerows (apart from those removed during development) and the buffer zones shall be maintained and supplemented with additional planting to minimise the view of the facility from the surrounding countryside.
- 5.7.3 The mitigation measures proposed for the protection of habitats/ecology shall be as described in Section 4.7.2.3 of the EIS.
- 5.7.4 Clearance of trees or areas of scrub, where required, shall only take place outside of the bird nesting season (1<sup>st</sup> March to 31<sup>st</sup> August) as defined in the Wildlife (Amendment) Act 2000.
- 5.8 Operational Controls.
- 5.8.1 The landfill shall be filled in accordance with the five phase sequence outlined in Section 3.1.3 and specified on Drawing No's 2001-144-02-01 (Rev. A) and 2001-144-02-02 (Rev. A) of the EIS unless otherwise agreed with the Agency.
- 5.8.2 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.8.3 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over unless otherwise agreed with the Agency.

- 5.8.4 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.
  - 5.8.5 Filled cells shall be permanently capped within twelve months of the cells having been filled to the required level.
  - 5.8.6 Scavenging shall not be permitted at the facility.
  - 5.8.7 Gates shall be locked shut when the facility is unsupervised.
  - 5.8.8 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
  - 5.8.9 Fuels shall only be stored at appropriately banded locations on the facility.
  - 5.8.10 All tanks and drums, including tankers used to transport leachate from the facility shall be labelled to clearly indicate their contents.
  - 5.8.11 No smoking shall be allowed on the facility other than in the administration building.
  - 5.8.12 Flare unit efficiency shall be tested once it is installed and once every three years thereafter.
- 5.9 Off-site Disposal and Recovery.
- 5.9.1 Waste sent off-site for recovery or disposal shall only be conveyed by a waste contractor agreed by the Agency.
  - 5.9.2 All waste transferred from the facility shall only be transferred to an appropriate facility agreed by the Agency.
  - 5.9.3 All wastes removed off-site for recovery or disposal shall be transported from the facility to the consignee in a manner which will not adversely affect the environment.
- 5.10 Leachate Management.
- 5.10.1 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.
  - 5.10.2 The level of leachate in the pump sumps and in the filled waste shall be monitored continuously by a SCADA system which shall automatically activate leachate pumps to maintain the leachate head at the required level. The SCADA system shall be linked to an automatic level alarm in the administration building, and at another location outside the facility when the administration building is unmanned.
  - 5.10.3 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.
  - 5.10.4 Recirculation of leachate or other contaminated water shall not be undertaken without the prior agreement of the Agency.
  - 5.10.5 Leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers unless otherwise agreed with the Agency.
- 5.11 Maintenance
- 5.11.1 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.
  - 5.11.2 The licensee shall maintain and clearly label and name all sampling and monitoring locations.
  - 5.11.3 All leachate management structures, leachate lagoon and surface water lagoon on the facility shall be inspected and certified fit for purpose on an annual basis by an independent and appropriately qualified chartered engineer.

5.11.4 Any excess liquid which has accumulated in the wheelwash shall drain only to the leachate lagoon. Silt, stones and other accumulated material shall be removed as required and disposed of at the working face or to a skip.

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

## **CONDITION 6 EMISSIONS**

- 6.1. No specified emission from the facility shall exceed the emission limit values set out in *Schedule C: Emission Limits* of this licence. There shall be no other emissions of environmental significance.
- 6.2. The licensee shall ensure that the activities shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.
- 6.3. Landfill Gas:
- 6.3.1. The following are the trigger levels for landfill gas emissions from the facility measured in any service duct or manhole on, at or immediately adjacent to the facility and/or at any other point located outside the body of the waste:-
- a) Methane, greater than or equal to 1.0% v/v; or
  - b) Carbon dioxide, greater than or equal to 1.5% v/v.
- 6.3.2. The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of :-
- a) In the case of landfill gas flare:  
Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and
  - b) In the case of landfill gas combustion plant:  
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.
- 6.3.3. Emission limits for landfill gas emissions 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.
  - c) No 30 minute mean value shall exceed twice the emission limit value.
- 6.3.3.2. Non-Continuous Monitoring:-
- a) For any parameter where, due to sampling/analytical limitations, a 30 minute sample is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.
  - b) For all other parameters, no 30 minute mean value shall exceed the emission limit value.
  - c) For flow, no hourly or daily mean value shall exceed the emission limit value.

6.4. Groundwater.

6.4.1 There shall be no direct emissions to groundwater.

6.4.2 The trigger levels for groundwater measured at the monitoring boreholes specified in Table D.1.1 are as follows:

Ammonia: >0.15mg/l; Chloride: >40mg/l; Potassium: >12mg/l;  
pH: <6 or >9; TOC: >50mg/l

The above groundwater trigger levels shall be reviewed by the licensee on an annual basis and submitted to the Agency for its agreement as part of the AER.

6.5. Emissions to Surface Water

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

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. In the event that monitoring should indicate that (i) contamination of the water in the surface water lagoon or (ii) insufficient flow is available in the perimeter stream (Long Ford stream), the outlet penstock shall be closed and the water shall be pumped to the leachate lagoon or tankered off-site to an agreed WWTP.

6.5.4. The licensee shall ensure that the surface water management infrastructure prevents the emission of polluting matter to the surface water resources within and adjacent to the facility during construction of the facility and in particular during construction of the surface water management infrastructure and surface water lagoon.

6.6. Noise

6.6.1 There shall be no clearly audible tonal component or impulsive component in the noise emissions from the facility at the facility boundary.

6.7. Trigger Level for PM<sub>10</sub>

6.7.1. The trigger level for PM<sub>10</sub> from the facility measured at any location on the boundary of the facility is:-

a) PM<sub>10</sub> greater than 50µg/m<sup>3</sup> for a daily sample.

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

## **CONDITION 7 NUISANCE CONTROL**

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

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

7.3 Litter Control.

7.3.1 The measures and infrastructure as described in Sections 3.3.4 and 4.8.1.3 of the EIS shall be applied to control litter at the facility.

- 7.3.2 Prior to the disposal of any waste in any cell, litter fencing shall be installed and maintained around the perimeter of the active tipping area and portable litter nets/screens shall also be used at the active tipping face.
- 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.
  - 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 licences, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working day after such waste is discovered.
- 7.3.5 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.
- 7.4 Dust Control.
- 7.4.1 From the date of commencement of construction of the facility, dust control measures shall be implemented at the facility.
- 7.4.2 In dry weather, site roads and any other areas used by vehicles shall be sprayed with water as and when required to minimise airborne dust nuisance.
- 7.4.3 Potential dust emissions from all stockpiles of construction and demolition waste shall be controlled by appropriate covering of such materials or by other means to be agreed with the Agency.
- 7.5 Prior to exiting the facility, all construction and waste vehicles shall use the wheelwash.
- 7.6 Bird Control.
- 7.6.1 Birds shall be prevented from gathering on and feeding at the facility by the use of birds of prey and/or other bird scaring techniques. The birds of prey and/or other techniques shall be in place on the facility at least two weeks prior to any waste being disposed of and shall maintain their presence every day, from before dawn to after dark, until the waste activities cease and all the waste is capped to the written satisfaction of the Agency. The use of gas operated bird scaring devices is prohibited at the facility.
- 7.7 Noise/Disturbance
- 7.7.1 From the date of commencement of construction of the facility, the licensee shall ensure the following:
- (a) that low sound level plant is used on site;
  - (b) that speed restrictions are imposed on internal site roads; and
  - (c) that all heavy machinery and mechanical plant used on-site are fitted with acoustic panels and acoustic mufflers (exhaust silencers).
- 7.8 Vermin Control
- 7.8.1 Prior to the commencement of waste activities, the licensee shall submit to the Agency for its agreement a proposal for the control and eradication of vermin and fly infestations at the facility. The licensee shall commence control measures prior to the acceptance of waste at the facility. This proposal should include as a minimum;
- (a) details on the rodenticide(s) and insecticide(s) to be used;

- (b) mode and frequency of application and measures to contain sprays within the facility boundary;
- (c) operator training;
- (d) details on the precautions (including supporting documentation) to be used to minimise the secondary poisoning of birds and other species from the use of the insecticides and rodenticides proposed; and
- (e) details of any consultation with *Development Applications Section, Department of the Environment, Heritage & Local Government (formally known as Dúchas)* on the vermin control proposed.

**REASON:** *To provide for the control of nuisances.*

## **CONDITION 8 MONITORING**

- 8.1 The licensee shall carry out such monitoring and at such locations and frequencies as set out in *Schedule D: Monitoring* of this licence and as specified in this licence. Unless otherwise specified by this licence, all environmental monitoring shall commence no later than two months after the date of grant of this licence. Where monitoring infrastructure needs to be installed environmental monitoring shall commence no later than two months after its installation.
- 8.2 The licensee shall amend the frequency, locations, methods and scope of monitoring as required by this licence only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.
- 8.3 Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers' instructions (if any) so that all monitoring results accurately reflect any emission, discharge or environmental parameter.
- 8.4 The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.
- 8.5 Prior to the commencement of waste activities, the licensee shall submit to the Agency for its agreement an updated appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. The drawing shall include the twelve figure National Grid Reference for the various monitoring points.
- 8.6 Surface Water Monitoring
- 8.6.1 Prior to the commencement of the construction of the facility, the licensee shall submit to the Agency for its agreement proposals for (i) continuous monitoring of water in the surface water lagoon and (ii) the criteria for when discharges shall take place from the lagoon taking into account the quality and quantity of the discharge and the flows in the perimeter stream (Long Ford stream). These proposals shall include the criteria/trigger levels which will determine when the outlet from the lagoon shall be closed. Such continuous monitoring shall, as a minimum, include conductivity, pH and TOC and shall be carried out on the outlet from the surface water lagoon.
- 8.7 Groundwater Monitoring.
- 8.7.1 The licensee shall, prior to the commencement of waste disposal activities and, subject to the agreement of the landowners, commence a programme for the representative monitoring of groundwater quality of private wells. The scope of this monitoring programme shall be agreed in advance with the Agency.

8.8 Topographical Survey.

8.8.1 A topographical survey shall be carried out within twelve months of the date of commencement of waste deposition at the facility and shall be repeated annually thereafter. The survey shall be in accordance with any written instructions issued by the Agency and shall include a measurement of the remaining available void space following the commencement of waste disposal.

8.9 Ecological/Biological Assessment.

8.9.1 Prior to the commencement of construction of the facility, the licensee shall carry out a badger survey and a bat survey of the areas which are likely to be affected by the construction of the facility. The licensee shall consult with the *Development Applications Section, Department of the Environment, Heritage & Local Government (formally known as Dúchas)* prior to undertaking the surveys and any recommendations arising from the assessments shall be implemented as agreed with the Agency.

8.9.2 A biological assessment of the surface water quality at monitoring locations SW1 to SW7 shall be undertaken within six months of the date of grant of this licence and annually thereafter. 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 with the Agency.

8.10 Archaeological Assessment.

8.10.1 Prior to the development of any undisturbed area, the advice of the *Development Applications Section, Department of the Environment, Heritage & Local Government (formally known as Dúchas)* shall be sought. A suitably qualified archaeologist shall carry out monitoring (as required) during the development of undisturbed areas. On completion, a report of the results of any archaeological monitoring shall be submitted to *Development Applications Section, Department of the Environment, Heritage & Local Government (formally known as Dúchas)* and to the Agency.

8.11 Stability Assessment.

8.11.1 Within twelve months of the date of commencement of waste disposal activities at the facility, and annually thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility.

8.12 Nuisance Monitoring.

8.12.1 The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours. Written records shall be made of all inspections and any actions taken as a result of these inspections.

8.12.2 Prior to the commencement of waste disposal activities, the licensee shall submit a programme to the Agency for its agreement for the monitoring and assessment of odours arising from the facility in accordance with Table D.3.1 of this licence.

8.13 Data Management

8.13.1 The licensee shall, prior to the commencement of waste disposal activities, develop and establish a Data Management System for collation, archiving, assessing and graphically presenting the environmental data generated as a result of this licence.

<p><b>REASON:</b> To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions.</p>
--



## 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.
- 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, prior to commencement of construction of the facility, submit a written Emergency Response Procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment. This shall include a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities. The Fire Authority shall be consulted by the licensee during this assessment.

9.3. The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.

9.4. Emergencies.

9.4.1. All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.

9.4.2. No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.

9.4.3. In the event that monitoring of local wells indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an emergency and the licensee shall provide an alternative supply of water to those affected.

9.4.4. In the event that monitoring of the slide slopes of the facility indicate that there may be a risk of slope failure this will be treated as an emergency.

<p><i>REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions.</i></p>
--

## 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.
- 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. These documents shall be available electronically on-site for inspection. The licensee shall record the following:-

- a) The date.
- b) The name of the carrier (including the waste carrier registration and waste collection permit details).
- c) The vehicle registration number.
- d) The name of the producer(s)/collector(s) of the waste as appropriate.
- e) The name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number.
- f) A description of the waste including the associated EWC codes.
- g) The quantity of the waste, recorded in tonnes.
- h) The name of the person checking the load; and,
- i) Where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.

10.3 Written Records.

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

- a) The types and quantities of waste recovered 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 maintenance records for the landfill gas flare.
- e) Details of all nuisance inspections.
- f) 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.
- 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.
- e) Any incidents or spillages of leachate during its removal or transportation.

10.6 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.
- h) Measures to contain sprays within the facility boundary.

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

## **CONDITION 11 REPORTS AND NOTIFICATIONS**

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

- a) Be sent to the Agency's headquarters.
- b) Comprise one original and 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.
- 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 10.00 am the following working day after the occurrence of any incident.
- b) Submit a written record of the incident, including all aspects described in Condition 9.1(a-e), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident.
- c) In the event of any incident which relates to discharges to surface water, notify the Eastern Regional Fisheries Board as soon as practicable and in any case not later than 10.00 am on the following working day after such an incident.
- 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.

Within twelve months of the date of grant of this licence, a report examining waste recovery options shall be submitted to the Agency for its agreement. This report shall address methods to contribute to the achievement of the recovery targets stated in national and European Union waste policies and shall include the following:-

- a) Proposals for the contribution of the facility to the achievement of targets for the reduction of biodegradable waste to landfill, going to landfills as specified in the Landfill Directive.
- b) The treatment of waste as required by the Landfill Directive.
- c) The separation of recyclable materials from the waste.
- d) The recovery of Construction and Demolition Waste.
- e) The recovery of commercial waste, including cardboard.
- f) Inert waste to be used for cover/restoration material at the facility.
- g) The feasibility of using landfill gas as a fuel for on-site vehicles.

#### 11.4 Reports relating to Facility Operations.

##### 11.4.1 Leachate Handling Procedures:-

The licensee shall, submit to the Agency for its agreement prior to the use of the leachate storage lagoon, leachate Handling Procedures for the handling of leachate on the facility and during removal from the lagoon and subsequent transport/discharge to the Waste Water Treatment Plant.

##### 11.4.2 Achievement of Final Profile:-

Within eighteen months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, proposals for landfilling and restoration to achieve the final profile/height of the facility to the Agency for its agreement.

##### 11.4.3 Operation in Adverse Wind Conditions:-

Prior to the commencement of waste activities the licensee shall submit to the Agency for its agreement proposals for the operation of the facility in adverse wind conditions.

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

##### 11.4.5 Within twelve months of the date of commencement of waste activities and each year thereafter as part of the AER, the licensee shall submit an assessment of whether the utilisation of landfill gas as an energy resource is feasible. If feasible such a system shall be installed within a timeframe agreed with the Agency. This assessment shall include proposals regarding the utilisation of heat energy from this plant.

##### 11.4.6 Prior to the acceptance of waste at the facility, the licensee shall submit to the Agency a report for its agreement on the treatment of leachate arising at the facility. This shall include:

- a) the off-site Wastewater Treatment Plant(s) to which leachate and/or contaminated water will be tankered to for treatment;
- b) the capacity of the off-site WWTP(s) and its ability to treat leachate/contaminated water to appropriate standards;
- c) contingency arrangements in the event of process failure in the nominated off-site WWTP(s); and
- d) the provision of infrastructure for the on-site treatment of leachate at the facility.

#### 11.5 Annual Environmental Report.

##### 11.5.1 The licensee shall submit to the Agency for its agreement, not later than January 31 after the first year of operation, and within one month of the end of each year thereafter, an Annual Environmental Report (AER).

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

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

### 12.1 Agency Charges.

12.1.1 The licensee shall pay to the Agency an annual contribution of €31,557 or such sum as the Agency from time to time determines, towards the cost of monitoring the activity or otherwise in performing any functions in relation to the activity, as the Agency considers necessary for the performance of its functions under the Waste Management Act, 1996. The licensee shall in 2004 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Public Sector Average Earnings Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2003, the licensee shall pay a pro rata amount from the date of this licence to 31<sup>st</sup> December. This amount shall be paid to the Agency within one month of the date of grant of this licence.

12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased the licensee shall contribute such sums as determined by the Agency to defraying its costs.

### 12.2 Financial Provision for Closure, Restoration and Aftercare

12.2.1 Prior to the disposal of any waste at the facility, the licensee shall arrange for an independent third party risk assessment of the facility to be carried out. The risk assessment shall have particular regard to any accidents, emergencies, or other incidents, which might occur at the facility and their effect on the environment, on the neighbours of the facility and on adjoining land-uses. The risk assessment shall include a comprehensive and fully costed Environmental Liabilities Risk Assessment for the facility together with a proposal for Financial Provision arising from the carrying on of the activities to which this licence relates.

12.2.2 The amount of financial provision, held under Condition 12.2.1 shall be maintained by the licensee and be reviewed and revised as necessary, but at least annually. Any proposal for such a revision shall be submitted to the Agency for its agreement.

12.2.3 The licensee shall within two weeks of purchase, renewal or revision of the financial provision required under Condition 12.2.1, forward to the Agency written proof of such indemnity.

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.

Prior to the commencement of waste activities at the facility, the licensee shall submit a report to the Agency for agreement estimating the cost of closure and of aftercare of the facility for a period of at least thirty years. Using this information the licensee should show how the cost of the landfill of waste will cover these closure and aftercare costs, in accordance with Article 10 of the Landfill Directive (1999/31/EC).

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

## SCHEDULE A : Waste Acceptance

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

Waste Type	Maximum (Tonnes Per Annum) <sup>Note 1</sup>
<b>Household</b>	62,500
<b>Commercial</b>	67,500
<b>Industrial</b>	45,000
<b>TOTAL</b>	175,000

**Note 1:** The tonnage of household waste, commercial waste and industrial waste may be altered with the prior agreement of the Agency provided that the total amount of these wastes accepted at the facility does not exceed the combined tonnage of 175,000 tonnes per annum (as specified in the total above).

*Table A.2 Waste Categories and Quantities for recovery, restoration and site development works*

Waste Type	Maximum (Tonnes Per Annum)
<b>Construction and Demolition</b>	28,000

## 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 noise sensitive locations indicated in Table D.1.1).

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

**C.2 Landfill Gas Concentration Limits:** (Measured in any building on or adjacent to the facility).

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

**C.3 Dust Deposition Limits:** (Measured at the monitoring points indicated in Table D.1.1).

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

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

**C.4 Surface Water Discharge Limits:** (Measured at the outlet from the surface water lagoon).

Parameter	Limit
Suspended Solids	35 mg/l

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

Emission Point Reference numbers: To be agreed with the Agency

Location: Landfill Gas Utilisation Plant and/or flare

Volume to be emitted: 3000m<sup>3</sup>/hr (unless otherwise agreed with the Agency)

Minimum discharge height: 8m (unless otherwise agreed with the Agency)

Parameter	Flare Emission Limit Value <sup>Note 1,3</sup>	Utilisation Plant Emission Limit Value <sup>Note 1,3</sup>
Nitrogen Oxides (NO <sub>x</sub> )	150 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>
CO	50 mg/m <sup>3</sup>	650 mg/m <sup>3</sup>
Particulates	Not applicable	130 mg/m <sup>3</sup>
Total Organic Carbon (TOC)	10 mg/m <sup>3</sup>	Not applicable
TA Luft Organics Class I <sup>(Note 2)</sup>	Not applicable	20 mg/m <sup>3</sup> (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II <sup>(Note 2)</sup>	Not applicable	100 mg/m <sup>3</sup> (at mass flows > 2 kg/hr)
TA Luft Organics Class III <sup>(Note 2)</sup>	Not applicable	150 mg/m <sup>3</sup> (at mass flows > 3kg/hr)
Hydrogen Chloride	50 mg/m <sup>3</sup> (at mass flows > 0.3 kg/h)	50 mg/m <sup>3</sup> (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m <sup>3</sup> (at mass flows > 0.05 kg/h)	5 mg/m <sup>3</sup> (at mass flows > 0.05 kg/h)

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

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

**Note 3:** 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

**Table D.1.1 Monitoring Locations**

Landfill Gas <sup>Note 1</sup>	Landfill Gas Flare/Utilisation Plant <sup>Note 1</sup>	Dust <sup>Note 4</sup> Odour <sup>Note 1</sup>	Noise <sup>Note 5</sup>	Surface Water <sup>Note 6</sup>	Ground Water <sup>Note 7</sup>	Leachate <sup>Note 1</sup>
Within waste body <sup>Note 2</sup>	Flare	AD6, AD7, AD8, AD9, AD10, AD11, AD12 <sup>Note 1</sup>  PM <sub>10</sub> 1 <sup>Note 1</sup> PM <sub>10</sub> 2 <sup>Note 1</sup> PM <sub>10</sub> 3 <sup>Note 1</sup> PM <sub>10</sub> 4 <sup>Note 1</sup>	NL1, NL2, NL3, NL4	SW1, SW2, SW3, SW4, SW5, SW6, SW7  SW8 (Flow monitoring in stream) <sup>Note 1</sup>	MW1d, MW1s, MW2d, MW2s, MW3d, MW3s, MW4d, MW4s, MW5d, MW5s, MW6d, MW6s, MW7d MW7s <sup>Note 8</sup> MW8s MW8d <sup>Note 8</sup>	Leachate Lagoon
Perimeter locations <sup>Note 3</sup>	Utilisation Plant	OD1 OD2 OD3 OD4	NSL1 NSL2 NSL3 <sup>Note 1</sup>	SW9 & SW10 (Inlet /outlet - surface water lagoon) <sup>Note 1</sup>	Private wells <sup>Note 9</sup>	Each Cell

**Note 1:** Monitoring locations to be agreed with the Agency.

**Note 2:** At least 2 per cell.

**Note 3:** As per Condition 3.21.1.

**Note 4:** Dust deposition monitoring locations as indicated on Figure No. 3 (Proposed Dust Monitoring Locations) received by the Agency on 20/02/02 unless otherwise stated.

**Note 5:** As indicated on Figure No. 2 (Proposed Noise Monitoring Locations) received by the Agency on 20/02/02 unless otherwise stated.

**Note 6:** As indicated on Figure No. 2.5.3 of the EIS unless otherwise stated.

**Note 7:** As indicated on Figure No. 3.5.1 of the EIS unless otherwise stated.

**Note 8:** Upgradient wells, the locations which must be agreed with the Agency.

**Note 9:** As agreed with the Agency under Condition 8.7 of this licence.

## D.2 Landfill Gas

**Table D.2.1 Landfill Gas Combustion Plant/Enclosed Flare**

Parameter	Flare (enclosed) Monitoring Frequency	Utilisation Plant Monitoring Frequency	Analysis Method <sup>Note1</sup> /Technique <sup>Note2</sup>
<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
Process - Combustion	Continuous	Quarterly	Temperature Probe/datalogger
<b>Outlet</b>			
CO	Continuous	Continuous	Flue gas analyser/datalogger
NOx	Annually	Annually	Flue gas analyser
SO <sub>2</sub>	Annually	Annually	Flue gas analyser
Particulates	Not applicable	Annually	Isokinetic/Gravimetric
TA Luft Class I, II, III Organics	Not applicable	Annually	Adsorption/Desorption /GC/GCMS <sup>Note 3</sup>
TOC	Annually	Not applicable	Flame ionisation
Hydrochloric Acid	Annually	Annually	Impinger / Ion Chromatography
Hydrogen Fluoride	Annually	Annually	Impinger / Ion Chromatography

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

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

**Note 3:** Test methods should be capable of detecting acetonitrile, dichloromethane, tetrachloroethylene and vinyl chloride as a minimum.

**Table D.2.2 Landfill Gas Monitoring Parameters, Frequency and Technique**

Parameter	Monitoring Frequency		Analysis Method <sup>Note1</sup> /Technique <sup>Note2</sup>
	Gas Boreholes/ Vents/Wells	Site Office	
<b>Methane (CH<sub>4</sub>) % v/v</b>	Monthly	Continuous	Infrared analyser/flame ionisation detector
<b>Carbon Dioxide (CO<sub>2</sub>)%v/v</b>	Monthly	Continuous	Infrared analyser/ flame ionisation detector
<b>Oxygen(O<sub>2</sub>) %v/v</b>	Monthly	Continuous	Electrochemical cell
<b>Atmospheric Pressure</b>	Monthly	Continuous	Standard
<b>Temperature</b>	Monthly	Continuous	Standard

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

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

### D.3 Dust/Odour Monitoring

**Table D.3.1 Dust/Odour Monitoring Frequency and Technique**

Parameter	Monitoring Frequency	Analysis Method/Technique
<b>Dust</b>	Monthly	Standard Method <sup>Note 1</sup>
<b>Odour</b>	Bi-annually <sup>Note 4</sup>	Note 2
<b>PM<sub>10</sub></b>	Quarterly	Note 3

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

**Note 2:** To be agreed with the Agency.

**Note 3:** Monitoring shall be carried out as described in prEN12341 "Air Quality – field test procedure to demonstrate reference equivalence of sampling methods for PM<sub>10</sub> fraction of particulate matter" or an alternative agreed in writing with the Agency.

**Note 4:** Monitoring to commence within six months of the commencement of disposal of waste and thereafter on a bi-annual basis.

### D.4 Noise

**Table D.4.1 Noise Monitoring Frequency and Technique**

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

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

## D.5 Surface Water, Groundwater and Leachate

**Table D.5.1 Water and Leachate - Parameters / Frequency**

<b>Parameter</b> <sup>Note 1</sup>	<b>SURFACE WATER</b> <sup>Note 2, Note 9</sup>	<b>GROUNDWATER</b> <sup>Note 10</sup>	<b>LEACHATE</b>  <b>Monitoring Frequency</b>
	<b>Monitoring Frequency</b>	<b>Monitoring Frequency</b>	
<b>Visual Inspection/Odour</b> <sup>Note 2</sup>	Weekly	Quarterly	Quarterly
<b>Groundwater Level</b>	Not Applicable	Monthly	Not Applicable
<b>Leachate Level</b>	Not Applicable	Not Applicable	Continuous
<b>Flow</b>	Continuous <sup>Note 8</sup>	Not Applicable	Not Applicable
<b>Ammoniacal Nitrogen</b>	Quarterly	Quarterly	Quarterly
<b>BOD</b>	Quarterly	Not Applicable	Quarterly
<b>COD</b>	Quarterly	Not Applicable	Quarterly
<b>Chloride</b>	Quarterly	Quarterly	Quarterly
<b>Dissolved Oxygen</b>	Quarterly	Quarterly	Not Applicable
<b>Electrical Conductivity</b>	Quarterly <sup>Note 11</sup>	Quarterly	Quarterly
<b>pH</b>	Quarterly <sup>Note 11</sup>	Quarterly	Quarterly
<b>Total Suspended Solids</b>	Quarterly	Not Applicable	Not Applicable
<b>Temperature</b>	Quarterly	Quarterly	Quarterly
<b>Metals / Non Metals</b> <sup>Note 3</sup>	Annually	Annually	Annually
<b>Cyanide (Total)</b>	Not Applicable	Annually	Annually
<b>Fluoride</b>	Not Applicable	Annually	Annually
<b>List I/II Organic Substances</b> <sup>Note 4</sup>	Once off <sup>Note 7</sup>	Annually <sup>Note 7</sup>	Once off <sup>Note 7</sup>
<b>Mercury</b>	Annually	Annually	Annually
<b>Sulphate</b>	Annually	Annually	Annually
<b>Total Alkalinity</b>	Annually	Annually	Not applicable
<b>Total P/ Orthophosphate</b>	Annually	Annually	Annually
<b>Total Oxidised Nitrogen</b>	Annually	Annually	Annually
<b>Total Organic Carbon</b>	Continuous <sup>Note 11</sup>	Quarterly	Not Applicable
<b>Residue on Evaporation</b>	Not Applicable	Annually	Not Applicable
<b>Faecal Coliforms</b> <sup>Note 5</sup>	Not Applicable	Annually	Not Applicable
<b>Total Coliforms</b> <sup>Note 5</sup>	Not Applicable	Annually	Not Applicable
<b>Biological Assessment</b>	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, 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:** In the case where groundwater is used for drinking water, if there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.

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

**Note 7:** 3 surface water locations, 3 groundwater locations and 2 leachate locations to be agreed with the Agency.

**Note 8:** Applicable to monitoring locations SW8, SW9 and SW10 only.

**Note 9:** Monitoring to commence at least one month prior to the commencement of construction of the facility.

**Note 10:** Monitoring to commence within six months of the date of grant of this licence.

**Note 11:** Continuous monitoring on the outlet from the surface water lagoon (SW10).

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

**Table D.6.1** ***Meteorological Monitoring*** (Monitoring location to be agreed with the Agency (Condition 3.20))

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

## SCHEDULE E :Recording and Reporting to the Agency

Report	Reporting Frequency <sup>Note1</sup>	Report Submission Date
<b>Environmental Management System Updates</b>	Annually	One month after the end of the year reported on.
<b>Annual Environment Report (AER)</b>	Annually	Thirteen months from the date of grant of licence and one month after the end of each year thereafter.
<b>Record of incidents</b>	As they occur	Within five days of the incident.
<b>Bund, tank and container integrity assessment</b>	Every three years	Six months from the date of grant of licence and one month after end of the three year period being reported on.
<b>Specified Engineering Works reports</b>	As they arise	Prior to the works commencing.
<b>Monitoring of landfill gas</b>	Quarterly	Ten days after end of the quarter being reported on.
<b>Monitoring of Surface Water Quality</b>	Quarterly	Ten days after end of the quarter being reported on.
<b>Monitoring of Groundwater Quality</b>	Quarterly	Ten days after end of the quarter being reported on.
<b>Monitoring of Leachate</b>	Quarterly	Ten days after end of the quarter being reported on.
<b>Meteorological Monitoring</b>	Annually	One month after end of the year being reported on.
<b>Dust Monitoring</b>	Quarterly	Ten days after the quarter being reported on.
<b>Noise Monitoring</b>	Quarterly	Ten days after the quarter being reported on.
<b>Any other monitoring</b>	As they occur	Within ten days of obtaining results.

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

## SCHEDULE F : Acceptance of Inert Waste

### *F.1 Acceptable Waste for Recovery*

Only the wastes listed below are acceptable for recovery at the facility, unless otherwise agreed with the Agency.

WASTE	
Topsoil	Solid Road Planings, Solid Tarmacadam, Solid Asphalt
Subsoil	Brickwork
Stone, Rock and Slate	Natural Sand
Clay, Pottery and China	Concrete

# SCHEDULE G : Content of the Annual Environmental Report

## Annual Environmental Report Content

Reporting Period.

Waste activities carried out at the facility.

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

Calculated remaining capacity of the facility and year in which final capacity is expected to be reached.

Methods of deposition of waste and the treatment of waste received.

Summary report on emissions.

Summary of results and interpretation of environmental monitoring. This must include the following:

- Summary of monitoring results for key leachate indicator parameters;
- Comparison of monitoring results against baseline data and relevant standards;
- Graphical presentation of the trends in the concentration of key indicator parameters;
- An assessment and explanation of the significance of the results and trends detected;
- Ecological report; and
- Review of groundwater monitoring trigger levels.

Resource and energy consumption summary.

Proposed development and restoration of the facility together with report on restoration of completed cells/ phases.

Report on progress of implementation of landscaping programme including progress in planting, mortality rate, proposed works to meet the objectives set.

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

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

Estimated annual and cumulative quantity of indirect emissions to groundwater.

Annual water balance calculation and interpretation.

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

Schedule of Environmental Objectives and Targets for the forthcoming year.

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

Tank, pipeline and bund testing and inspection report.

Reported incidents and Complaints summaries.

Review of Nuisance Controls.

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

Report on the use of a portion of the waste charges and gate fees on appropriate local environmental improvement projects.

Report on progress in meeting the requirements of the Landfill Directive.

Report on training of staff.

Any other items specified by the Agency.

**Sealed by the seal of the Agency on this the 5<sup>th</sup> day of September 2003**

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

---

**Padraic Larkin, Director, Authorised Person**