



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

## **LANDFILL FOR NON-HAZARDOUS WASTE**

### **RECOMMENDED DECISION WASTE LICENCE**

<b>Waste Licence</b>	W0165-02
<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 continued operation and development of a landfill at Ballynagran, Coolbeg and Kilcandra, County Wicklow. The facility covers an area of approximately 128 hectares and the landfill footprint will occupy approximately 21 hectares. Over its lifetime, 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 total 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 is required to undertake a landscaping programme.

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.

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# 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, subject to compliance with the conditions of this licence, any emissions from the activity will comply with, and not contravene, the requirements of Section 40(4) of the Waste Management Acts, 1996 to 2008.

In reaching this decision the Environmental Protection Agency has considered the documentation received from the licensee, all submissions received and the report of its inspector.

## *Part I Activities Licensed*

In pursuance of the powers conferred on it by the Waste Management Acts, 1996 to 2008, the Agency proposes, under Section 46(8) of the said Acts, to grant this Waste Licence to Greenstar Recycling Holdings Limited to carry on the waste activity/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. For the purpose of Article 48 of the Waste Management (Licensing) Regulations 2004 (S.I. No. 395) this facility is classed as a non-hazardous waste landfill.

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

<b>Class 1</b>	<b>Deposit on, in or under land (including landfill):</b> 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.

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

<b>Class 4</b>	<b>Recycling or reclamation of other inorganic materials:</b> This activity is limited to the 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 Acts, 1996 to 2008 (the Acts), 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>BAT</b>	Best Available Techniques.
<b>Biodegradable waste</b>	Waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste and paper and cardboard.
<b>Biodegradable municipal waste (BMW)</b>	The biodegradable component of municipal waste, not including bio-stabilised residual waste. Biodegradable municipal waste is typically composed of food and garden waste, wood, paper, cardboard and textiles.
<b>Bio-stabilised residual waste</b>	Residual biodegradable municipal waste that has been treated to achieve an EPA-approved biodegradability stability standard (as defined in this licence) prior to landfilling or alternative use agreed.
<b>Characterisation of waste</b>	The sampling and analysis of waste to determine, amongst other things, its nature and composition, including the proportions of biodegradable, recyclable and other materials in the waste.
<b>Classification of waste</b>	The classification of waste as inert, non-hazardous or hazardous for the purpose of article 4 of Council Directive (1999/31/EC) on the landfill of waste.
<b>Coding of waste</b>	The allocation of a European Waste Catalogue/Hazardous Waste List code and a concise/standardised description of the waste, including information on the source of the waste, e.g. municipal, industrial, construction and demolition etc.
<b>Condition</b>	A condition of this licence.
<b>Construction and Demolition Waste</b>	All wastes which arise from construction, renovation and demolition activities.
<b>Containment boom</b>	A boom which can contain spillages and prevent them from entering drains or watercourses.
<b>Cover material</b>	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials; or other cover material the use of which has been agreed 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>Municipal waste (MSW)</b>	<b>solid</b> Household waste as well as commercial and other waste which, because of its nature or composition, is similar to household waste. Excluding municipal sludges and effluents.
<b>Night-time</b>	2200 hrs to 0800 hrs.
<b>Non-hazardous 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>Residual waste</b>	The fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal.
<b>Quarterly</b>	At approximately three monthly intervals.
<b>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/pre-treatment</b>	In relation to waste, any manual, thermal, physical, chemical or biological processes that change the characteristics of waste in order to reduce its volume or hazardous nature or facilitate its handling, disposal or recovery.
<b>Trigger Level</b>	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
<b>Wastewater</b>	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.



**Working Face**

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

## ***PART II CONDITIONS***

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

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and authorised by this licence.
- 1.2. For the purposes of this licence, the facility is the area of land outlined in red on Drawing No. 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 Acts, 1996 to 2008 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.4. Only 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. Shredded tyres shall not be disposed of at the facility.
  - 1.5.2. No hazardous wastes, liquid wastes or sludges shall be disposed of at the facility.
  - 1.5.3. Only waste that has been subject to treatment shall be accepted for disposal at the landfill facility.
    - (i) Treatment shall reflect published EPA technical guidance as set out in *Municipal Solid Waste – Pre-treatment and Residuals Management*, EPA, 2009.
    - (ii) With the agreement of the Agency, this condition shall not apply to:
      - inert wastes for which treatment is not technically feasible;
      - other waste for which such treatment does not contribute to the objectives of the Landfill Directive as set out in Article 1 of the Directive by reducing the quantity of the waste or the hazards to human health or the environment.
  - 1.5.4. No waste which in the conditions of the landfill, is explosive, corrosive, oxidising, highly flammable or flammable as defined in EU Council Directive 91/689/EEC shall be accepted at the landfill.
  - 1.5.5. Gypsum wastes shall not be placed in any landfill cell accepting biodegradable waste.
  - 1.5.6. The dilution or mixture of waste solely in order to fulfil relevant waste acceptance criteria established under Condition 5.3.1 is prohibited.
- 1.6. Limit on acceptance of biodegradable municipal waste
  - 1.6.1. Unless otherwise as may be specified by the Agency, the following limits shall apply:
    - (i) For the calendar years 2010, 2011 and 2012, a maximum of 40% by weight of municipal solid waste (MSW) accepted for disposal to the body of the landfill shall comprise biodegradable municipal waste (BMW),

- (ii) For the calendar years 2013, 2014 and 2015, a maximum of 24% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW, and
- (iii) For the calendar year 2016 and thereafter, a maximum of 15% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW,

unless an alternative has been agreed in writing by the Agency in accordance with condition 1.6.2.

1.6.2 Two or more licensed landfills may seek the agreement of the Agency that collectively they will arrange to comply with condition 1.6.1. Any agreements entered into become part of this licence. In seeking agreement the following factors, as a minimum, shall be addressed in any proposal submitted to the Agency:

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

#### 1.7 Determination of biodegradable municipal waste content of municipal waste

- 1.7.1 The licensee shall determine the biodegradable municipal waste content of MSW accepted for disposal to the body of the landfill. Waste that has been bio-stabilised in accordance with condition 1.7.4 shall not be considered BMW.
- 1.7.2 Bio-stabilised residual wastes meeting the requirements of Condition 1.7.4 received at the landfill facility may be included in the determination of MSW quantities accepted at the facility for the purposes of Condition 1.6.1.
- 1.7.3 In determining BMW content, the licensee shall use approved calculation factors for BMW content of municipal waste streams published by the EPA. With the agreement of the EPA, alternative factors can be used if they have been determined following waste characterisation carried out in accordance with EPA-approved characterisation protocols including, where appropriate, the use of EPA-approved contractors.
- 1.7.4 In the case of bio-stabilised residual wastes, stabilisation means the reduction of the decomposition properties of the waste to such an extent that offensive odours are minimised and that the respiration activity after four days ( $AT_4$ ) is  $<10\text{mg O}_2/\text{g DM}$  until 1 January 2016 and  $<7\text{mg O}_2/\text{g DM}$  thereafter.
- 1.7.5 Bio-stabilised residual wastes shall be monitored in accordance with Schedule D.7.
- 1.7.6 Waste that was accepted to the body of the landfill as stabilised waste but subsequently is found not to meet the stabilisation standard set out in Condition 1.7.4 shall be notified to the Agency and included in the calculation of BMW accepted to the body of the landfill when assessing compliance with Condition 1.6.1. In the event of failure to meet the stabilisation standard, each and every load of bio-stabilised residual waste accepted from the failed source following receipt of the failed test result shall be tested, notwithstanding the testing frequency set out in Schedule D.7, until otherwise agreed with the Agency.

1.7.7 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with condition 1.6.1, which shall be available for inspection by Agency personnel.

1.8 Waste Acceptance Hours and Hours of Operation.

1.8.1 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.

1.8.2 The landfill at the facility may only be operated during the hours of 7.00am and 7.00pm Monday to Saturday inclusive.

1.8.3 Waste shall not be accepted at the landfill on Sundays or on Public Holidays.

1.9 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.

1.10 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:

1.10.1 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.

1.10.2 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.

1.10.3 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.

1.11 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 The licensee shall maintain written details of the management structure of the facility. Any proposed replacement in the management structure shall be notified in advance in writing to the Agency. Written details of the management structure shall include the following information:-

- a) The names of all persons who are to provide the management and supervision of the waste activities authorised by the licence, in particular the name of the facility manager and any nominated deputies.
- b) Details of the responsibilities for each individual named under a) above.
- 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. The EMS shall be updated on an annual basis with amendments being notified to the Agency for agreement as part of the AER.

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

### 2.3.2.1 Schedule of Environmental Objectives and Targets:-

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

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

### 2.3.2.2 Environmental Management Plan (EMP):-

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

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

2.3.2.3 Notwithstanding the provisions of Condition 2.3.2.2, the operator shall prepare, operate and maintain a Landfill Environmental Management Plan (LEMP) covering aspects not already included in the EMP. The LEMP shall be regularly reviewed (at least annually) in light of operational experiences at the facility, the stage of development of the facility (active, closure, aftercare), evolving legislative

and BAT requirements, as well as any Agency instructions that may issue, with updates notified to the EPA as part of the AER.

2.3.2.4 Corrective Action Procedures:-

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

2.3.2.5 Awareness and Training Programme:-

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

2.4 Communications Programme.

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.

2.5 Resource Use and Energy Efficiency

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

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

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

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

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

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

### **CONDITION 3 FACILITY INFRASTRUCTURE**

3.1 The licensee shall establish all infrastructure 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 A CCTV system 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 Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004). The integrity and water tightness of all the bunds and 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 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.

### 3.15 Landfill Gas Management.

#### 3.15.1 Infrastructure for the active collection and flaring of landfill gas shall be installed and maintained at the facility.

#### 3.15.2 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 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) The licensee shall install and maintain 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) The licensee shall install and maintain 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) The licensee shall install and maintain 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.

3.22 Daily and intermediate cover

Bio-stabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 1.7.4, complies with any requirements of the Department of Agriculture, Fisheries and Food relating to the management of animal by-products and has been agreed in advance with the Agency.

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

## CONDITION 4 RESTORATION AND AFTERCARE

- 4.1. The licensee shall maintain a detailed Restoration and Aftercare Plan for the facility to the Agency for its agreement. The Restoration and Aftercare Plan 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. Unless otherwise agreed by the Agency, the final capping shall consist of the following:-
    - a) Top soil (150 -300mm).
    - b) Subsoils, such that total thickness of top soil and subsoils is at least 1m.
    - c) Drainage layer of 0.5m thickness having a minimum hydraulic conductivity of  $1 \times 10^{-4}$  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.
- 4.7. A final validation report to include a certificate of completion for the Restoration and Aftercare Plan, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

*REASON: To provide for the restoration of the facility.*

## CONDITION 5 FACILITY OPERATION AND WASTE MANAGEMENT

- 5.1. Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency.
- 5.2. Wastes shall only be accepted at the facility from holders of waste collection permits issued under the Waste Management (Collection Permit) Regulations 2007 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 Within one month of grant of this licence, the licensee shall submit to the Agency for its agreement updated written procedures for the acceptance and handling of all wastes. These procedures shall include details of the treatment of all waste to be carried out in advance of acceptance at the facility and shall also include methods for the characterisation, classification and coding of waste. The procedures shall have regard to the Council Decision (2003/33/EC) establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC on the landfill of waste.

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

### 5.5 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 Unless otherwise agreed, filled cells shall be permanently capped within 24 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 bunded 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.

5.12 The waste acceptance procedures established under Condition 5.3.1 shall provide:-

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

**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 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.

7.4 Prior to exiting the facility, all construction and waste vehicles shall use the wheelwash.

7.5 Bird Control.

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.

7.6 Noise/Disturbance

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).

7.7 Vermin Control

The licensee shall maintain and implement procedures for the control and eradication of vermin and fly infestations at the facility. This procedures 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.

#### 7.8 Odour Control & Monitoring

- 7.8.1 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for agreement, an Odour Management Plan (OMP) for the facility. The plan, as agreed, shall be implemented from the time of commencement of waste activities unless otherwise agreed by the Agency.
- 7.8.2 The OMP referred to in 7.8.1 shall include measures to control potential sources of odour nuisance, including inter alia, provisions regarding:
  - (i) Requirements of relevant conditions of this licence;
  - (ii) Adequate resources and training on-site to provide for the maintenance, monitoring and operation of the landfill gas extraction system;
  - (iii) Acceptance and management of odorous waste deliveries;
  - (iv) Following completion of waste acceptance in any cell /sub-cell, the licensee shall on a bi-annual basis arrange to the carrying out of an independent assessment and report on surface VOC emissions at the facility;
  - (v) Use of sacrificial gas extraction systems; phased capping of the waste body; and an interim capping system at inter-cell boundaries;
  - (vi) Working face/active cell sizing and covering;
  - (vii) Landfill gas collection:- locations of infrastructure including access/haul roads, well design and density, monitoring, condensate management, field balancing, flare/combustion plant operation;
  - (viii) Identification of fugitive sources of landfill gas emissions (e.g. from leachate management infrastructure);
  - (ix) Monitoring:- VOC surface emissions from capped areas, odour checks off- and on-site, receipt and evaluation/verification of odour complaints received.
- 7.8.3 To meet the requirements of the OMP, the licensee shall carry out a monthly review of control measures in place at the facility and maintain findings in a monthly report. This review shall include:
  - (i) Consideration of odour complaints received during period (including details and nature of complaints, times and weather conditions, any unusual circumstances, problems, etc.);
  - (ii) Review of any monitoring, including ambient odour monitoring in accordance with Schedule D.3, carried out (including investigation of complaints and actions taken where relevant);

- (iii) An update on the existing landfill gas control infrastructure (including operational status, number of wells & vents connected and unconnected to the landfill gas collection system, quantity of gas collected and flared/utilised, estimated quantity of landfill gas being produced, details of any problems with equipment during period);
- (iv) Details of any remedial/corrective actions taken, where relevant, including actions taken on foot of recommendations from previous report; and
- (v) Recommendations.

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

- 7.8.4 The OMP shall be reviewed annually and any updates/amendments submitted to the Agency as part of the Annual Environmental Report.
- 7.8.5 In relation to surface emissions from the waste body and identified features, the following shall constitute a trigger level:
  - (i) VOC greater than or equal to 50ppmv average over capped area; or
  - (ii) VOC greater than or equal to 100ppmv instantaneous reading on open surfaces within the landfill footprint; or
  - (iii) VOC greater than or equal to 500ppmv around all identified features.
- 7.8.6 Leachate holding tanks/lagoons shall be covered, and head gases vented to treatment as may be required by the Agency.
- 7.8.7 All odorous or odour-forming wastes shall be covered as soon as practicable and in any case at the end of the working day.
- 7.8.8 Where it is proposed to take biological sludges at the facility, these must be subject to appropriate pre-treatment in advance of acceptance at the facility.
- 7.8.9 When siting and operating landfill gas infrastructure, regard shall be had to the potential for, and mitigation of, odour nuisance.

<p><i>REASON: To provide for the control of nuisances.</i></p>
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## 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. 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 The licensee shall maintain 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

The licensee shall implement, following agreement by the Agency, a surface water monitoring programme which shall include (i) continuous monitoring of water in the surface water lagoon; (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); (iii) 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.

The licensee shall, 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.

A topographical survey shall be carried out annually at the facility. 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 development of any undisturbed area, 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)* or The National Parks and Wildlife Service 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 annually. This assessment shall use appropriate biological methods such as the EPA Q-rating system for the assessment of rivers and streams. The location of monitoring points shall be agreed with the Agency.

8.10 Archaeological Assessment.

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.

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

8.12 Nuisance Monitoring.

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.

### 8.13 Data Management

The licensee shall provide and maintain a Data Management System for collation, archiving, assessing and graphically presenting the environmental data generated as a result of this licence.

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

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

## CONDITION 9 CONTINGENCY ARRANGEMENTS

- 9.1. In the event of an incident the licensee shall immediately:-
- a) Identify the date, time and place of the incident.
  - b) Carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom.
  - c) Isolate the source of any such emission.
  - d) Evaluate the environmental pollution, if any, caused by the incident.
  - e) Identify and execute measures to minimise the emissions/malfunction and the effects thereof.
  - f) Provide a proposal to the Agency for its agreement within one month of the incident occurring to:-
    - a) Identify and put in place measures to avoid reoccurrence of the incident.
    - b) Identify and put in place any other appropriate remedial action.
- 9.2. The licensee shall maintain, review annually and amend as necessary a written Emergency Response Procedure (ERP). The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment. This shall include a risk assessment to determine the requirements at the facility for fire fighting and 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.

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

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

## **CONDITION 10 RECORDS**

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

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

- 10.2 The licensee shall maintain a written record for each load of waste arriving at the facility. The licensee shall record the following:

- (i) the date and time;
- (ii) the name of the carrier (including if appropriate, the waste carrier registration details);
- (iii) the vehicle registration number;
- (iv) the trailer, skip or other container unique identification number (where relevant);
- (v) the name of the producer(s)/collector(s) of the waste as appropriate;
- (vi) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
- (vii) a description of the waste including the associated EWC/HWL codes;
- (viii) the quantity of the waste, recorded in tonnes;
- (ix) details of the treatment(s) to which the waste has been subjected;
- (x) the classification and coding of the waste, including whether MSW or otherwise;
- (xi) whether the waste is for disposal or recovery and if recovery for what purpose;
- (xii) the name of the person checking the load; and
- (xiii) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.

- 10.3 Written Records.

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

- a) The types and quantities of waste recovered and disposed of at the facility each year. These records shall include the relevant EWC Codes and any details required to complete National Reports on Waste Statistics.
- b) All training undertaken by facility staff.
- c) Results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them.
- d) Details of 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.

<p><i>REASON: To provide for the keeping of proper records of the operation of the facility.</i></p>
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## **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.

The licensee shall as part of the Annual Environmental Report for the site submit a report on the contribution by this facility to the achievement of the waste recovery objectives stated in Condition 2.3.2.1 and as otherwise may be stated in National and European Union waste policies and shall, as a minimum, include tonnages of the following:

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

### 11.4 Reports relating to Facility Operations.

#### 11.4.1 Leachate Handling Procedures:-

The licensee shall maintain and implement 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:-

The licensee shall carry out the agreed plan for landfilling and restoration to achieve the final profile/height of the facility.

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

The licensee shall maintain procedures 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 Each year 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 The licensee shall maintain and implement procedures for the treatment of leachate arising at the facility, which 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, by the 31<sup>st</sup> March of each year, an Annual Environmental Report (AER) covering the previous year.
- 11.5.2 The AER shall include as a minimum the information specified in *Schedule G: Content of Annual Environmental Report* of this licence and shall be prepared in accordance with any relevant written guidance issued by the Agency.
- 11.6 The licensee shall provide a written acknowledgement (to carrier/waste contractor) of receipt of each delivery of waste to the facility (for disposal in the landfill).
- 11.7 The licensee shall, in writing, notify the Agency without delay of any waste that arrived at the facility that does not meet the waste acceptance criteria.
- 11.8 Reporting to demonstrate compliance with diversion targets

The Licensee shall report to the Agency such data and records, and at such frequency, as may be specified by the Agency in order to demonstrate compliance with the requirements of Condition 1.6.1. From 1 January 2010, and unless otherwise advised by the Agency, the licensee shall submit quarterly summary reports to the Agency within one week of the end of each quarter on the quantity of MSW and BMW accepted at the landfill during the preceding quarter and on a cumulative basis for the calendar year to date. The report shall detail the tonnage of MSW and BMW accepted and the basis (including all calculation factors) on which the figures have been calculated.

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

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

### 12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €28,382, or such sum as the Agency from time to time determines, having regard to variations in the extent of reporting, auditing, inspection, sampling and analysis or other functions carried out by the Agency, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Waste Management Acts 1996 to 2008. The first payment shall be a pro-rata amount for the period from the date of grant of this licence to the 31<sup>st</sup> day of December, and shall be paid to the Agency within one month from the date of grant of the licence. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Waste Management Acts 1996 to 2008, and all such payments shall be made within one month of the date upon which demanded by the Agency.

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

### 12.2 Environmental Liabilities

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

12.2.2 The licensee shall arrange for the completion, by an independent and appropriate qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) to address the liabilities from past and present activities. The

assessment shall include those liabilities and costs identified in Condition 4 for execution of the RAP. A report on this assessment shall be submitted to the Agency for agreement within twelve months of date of grant of this licence. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement. The results of the review shall be notified as part of the AER.

12.2.3 As part of the measures identified in Condition 12.2.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities associated with the operation (including closure and aftercare) of the facility. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.1.1.

12.2.4 Unless otherwise agreed any revision to those provisions of the fund dealing with restoration and aftercare of the facility shall be computed using the following formula:-

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

Where:-

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

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

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

### 12.3 Cost of landfill of waste.

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

*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>
Household	62,500
Commercial	67,500
Industrial	45,000
<b>TOTAL</b>	<b>175,000</b>

**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)
Construction and Demolition	28,000

*Table A.3 Total Permitted Landfill Capacity*

Total quantity of waste permitted to be placed at the landfill facility (over authorised life of facility)	2,770,000m <sup>3</sup>
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## SCHEDULE B : Specified Engineering Works

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

## SCHEDULE C : Emission Limits

**C.1 Noise Emissions:** (Measured at the 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 Note 1	Landfill Gas Flare/Utilisation Plant Note 1	Dust Note 4 Odour Note 1	Noise Note 5	Surface Water Note 6	Ground Water Note 7	Leachate Note 1
Within waste body Note 2	Flare	AD6, AD7, AD8, AD9, AD10, AD11, AD12 Note 1  PM <sub>10</sub> 1 Note 1 PM <sub>10</sub> 2 Note 1 PM <sub>10</sub> 3 Note 1 PM <sub>10</sub> 4 Note 1	NL1, NL2, NL3, NL4	SW1, SW2, SW3, SW4, SW5, SW6, SW7  SW8 (Flow monitoring in stream) Note 1	MW1d, MW1s, MW2d, MW2s, MW3d, MW3s, MW4d, MW4s, MW5d, MW5s, MW6d, MW6s, MW7d MW7s Note 8 MW8s MW8d Note 8	Leachate Lagoon
Perimeter locations Note 3	Utilisation Plant	OD1 OD2 OD3 OD4	NSL1 NSL2 NSL3 Note 1	SW9 & SW10 (Inlet /outlet - surface water lagoon) Note 1	Private wells Note 9	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 Note 1 / Technique Note 2
<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 Note 3
TOC	Annually	Not applicable	Flame ionisation
Hydrochloric Acid	Annually	Annually	Impinger / Ion Chromatography
Hydrogen Fluoride	Annually	Annually	Impinger / Ion Chromatography

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

Note 2: Or other methods agreed in advance 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	
Methane (CH <sub>4</sub> ) % v/v	Monthly	Continuous	Infrared analyser/flame ionisation detector
Carbon Dioxide (CO <sub>2</sub> )%v/v	Monthly	Continuous	Infrared analyser/ flame ionisation detector
Oxygen(O <sub>2</sub> ) %v/v	Monthly	Continuous	Electrochemical cell
Atmospheric Pressure	Monthly	Continuous	Standard
Temperature	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
Dust	Monthly	Standard Method <sup>Note 1</sup>
Ambient Odour	Monthly	Note 2
PM <sub>10</sub>	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.

### D.4 Noise

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

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

Parameter <sup>Note 1</sup>	SURFACE WATER <sup>Note 2, Note 9</sup>	GROUNDWATER	LEACHATE
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
Visual Inspection/Odour <sup>Note 2</sup>	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Continuous
Flow	Continuous <sup>Note 8</sup>	Not Applicable	Not Applicable
Ammoniacal Nitrogen	Quarterly	Quarterly	Quarterly
BOD	Quarterly	Not Applicable	Quarterly
COD	Quarterly	Not Applicable	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Quarterly	Quarterly
PH	Quarterly	Quarterly	Quarterly
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	Quarterly	Quarterly
Metals / Non Metals <sup>Note 3</sup>	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
List I/II Organic Substances <sup>Note 4</sup>	Once off <sup>Note 7</sup>	Annually <sup>Note 7</sup>	Once off <sup>Note 7</sup>
Mercury	Annually	Annually	Annually
Sulphate	Annually	Annually	Annually
Total Alkalinity	Annually	Annually	Not applicable
Total P/ Orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Annually	Annually
Total Organic Carbon	Continuous	Quarterly	Not Applicable
Residue on Evaporation	Not Applicable	Annually	Not Applicable
Faecal Coliforms <sup>Note 5</sup>	Not Applicable	Annually	Not Applicable
Total Coliforms <sup>Note 5</sup>	Not Applicable	Annually	Not Applicable
Biological Assessment	Annually <sup>Note 6</sup>	Not Applicable	Not Applicable

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

**Note 2:** Where there is evident gross contamination, 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:** 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>
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Force and Direction	Daily	Standard
Evaporation	Daily	Standard
Atmospheric Pressure	Daily	Standard
Humidity	Daily	Standard

### **D.7 Waste Monitoring**

<b>Waste class</b>	<b>Frequency</b>	<b>Parameter</b>	<b>Method</b>
Bio-stabilised residual waste	Every 200 tonnes from each source	As agreed	As agreed



## SCHEDULE E :Recording and Reporting to the Agency

Report	Reporting Frequency <sup>Note 1</sup>	Report Submission Date
Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	By 31 <sup>st</sup> March each year
Notification of waste loads not meeting waste acceptance criteria	As they occur	As per Condition 11.7
Compliance with waste diversion targets	As required by the Agency	As per Condition 11.8
Record of incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	One month after end of the three year period being reported on.
Specified Engineering Works reports	As they arise	Prior to the works commencing.
Monitoring of landfill gas	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Surface Water Quality	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Groundwater Quality	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Leachate	Quarterly	Ten days after end of the quarter being reported on.
Meteorological Monitoring	Annually	One month after end of the year being reported on.
Dust Monitoring	Quarterly	Ten days after the quarter being reported on.
Noise Monitoring	Quarterly	Ten days after the quarter being reported on.
Odour Management Plan (OMP)	As required	Six months after the date of grant of this licence.
Environmental Liabilities Risk Assessment (ELRA)	As required	Within 12 months after the date of grant of licence and at least every three years thereafter as part of the AER.
Any other monitoring	As they occur	Within ten days of obtaining results.

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

## SCHEDULE F : 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 <sup>Note 1</sup>
Subsoil	Brickwork
Stone, Rock and Slate	Natural Sand
Clay, Pottery and China	Concrete

Note 1: Acceptance subject to prior agreement with the Agency

## 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.

Updates/Amendments to Odour Management Plan (OMP)

Updates to Landfill environmental Management Plan (LEMP)

Review of Environmental Liabilities.

Report on waste recovery.

Statement of Measures for prevention of environmental damage and financial provisions.

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.

Statement of compliance of facility with any updates of the relevant Waste Management Plan

Statement on the achievement of the waste acceptance and treatment obligations

Any other items specified by the Agency.

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

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

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

