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**WASTE LICENCE
Recommended Decision**

Licence Register Number:	W0077-04
Applicant:	Cavan County Council
Location of Facility:	Corranure Landfill, Lismagratty and Corranure Townlands, Cootehill Road, Cavan, County Cavan

INTRODUCTION

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

This licence is for the continued operation of a landfill and civic amenity site at the facility.

A landfill has operated at this site since 1988 by Cavan County Council. Since 2007 the landfill and civic amenity facility were operated by Oxigen Environmental Ltd. under a concessionary agreement with Cavan County Council. Much of the original landfill has been capped and restored (cells 0, 1 and 2). Cell 3 of the active landfill has been filled and will be finally capped by 2012. Cell 4 of the active landfill will be operated under the conditions of this licence and will be finally capped within 4 years of commencement.

A civic amenity site operates at this site and this licence authorises the continued operation of this publicly accessible infrastructure.

This licence limits the acceptance of waste for landfilling to an intake of 45,000 tonnes per annum, a reduction from the previously authorised 90,000 tonnes.

The relevant class of activity for the landfill in the IPPC Directive (2008/1/EC) is class 5.4 of Annex I – *landfills receiving more than 10 tonnes per day or with a total capacity exceeding 25,000 tonnes, excluding landfills of inert waste.*

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

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Glossary of Terms

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Acts 1996 to 2010, unless otherwise defined in the section.

Adequate lighting	20 lux measured at ground level.
AER	Annual Environmental Report.
Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Agreement	Agreement in writing.
Annually	At approximately twelve-monthly intervals.
Application	The application by the licensee for this licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of this licence application.
BAT	Best Available Techniques.
Biannually	All or part of a period of six consecutive months.
Biodegradable waste	Waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste and paper and cardboard.
Biological Treatment	Biological Treatment involves composting, anaerobic digestion, mechanical-biological treatment or any other process for stabilising biodegradable waste.
Biodegradable municipal waste (BMW)	The biodegradable component of municipal waste, not including bio-stabilised residual waste. Biodegradable municipal waste is typically composed of food and garden waste, wood, paper, cardboard and textiles.
Bio-stabilised residual waste	Residual biodegradable municipal waste that has been treated to achieve an EPA-approved biodegradability stability standard (as defined in this licence) prior to landfilling or alternative use agreed.
BOD	5 day Biochemical Oxygen Demand (without nitrification suppression).
CEN	Comité Européen De Normalisation – European Committee for Standardisation.
Characterisation of waste	The sampling and analysis of waste to determine, amongst other things, its nature and composition, including the proportions of biodegradable, recyclable and other materials in the waste.
Classification of waste	The classification of waste as inert, non-hazardous or hazardous for the purpose of article 4 of Council Directive (1999/31/EC) on the landfill of waste.
Coding of waste	The allocation of a European Waste Catalogue/Hazardous Waste List code and a concise/standardised description of the waste, including information on the source of the waste, e.g. municipal, industrial, construction and demolition etc.
COD	Chemical Oxygen Demand.
Construction and demolition (C&D) waste	Wastes that arise from construction, renovation and demolition activities: Chapter 17 of the EWC or as otherwise may be agreed.

Containment boom	A boom that can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
Cover material	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials or other cover material, the use of which has been agreed with the Agency.
Daily	During all days of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement on any one day.
Daily cover	Is the term used to describe material spread (to a depth of 150 mm 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.
Day	Any 24 hour period.
Daytime	0800 hrs to 2200 hrs
dB(A)	Decibels (A weighted).
DO	Dissolved Oxygen.
Documentation	Any report, record, results, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
Emergency	Those occurrences defined in Condition 9.
Emission limits	Those limits, including concentration limits and deposition rates, established in <i>Schedule B: Emission Limits</i> , of this licence.
EMP	Environmental Management Programme.
Environmental damage	As defined in Directive 2004/35/EC.
EPA	Environmental Protection Agency.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC and any subsequent amendment published in the Official Journal of the European Community.
Facility	Any site or premises used for the purpose of the recovery of disposal of waste.
Fortnightly	A minimum of 24 times per year, at approximately two week intervals.
Gas Oil	Gas Oil as defined in Council Directive 1999/32/EC and meeting the requirements of S.I. No. 119 of 2008.
GC/MS	Gas chromatography/mass spectroscopy.
ha	Hectare.
Heavy metals	This term is to be interpreted as set out in "Parameters of Water Quality, Interpretation and Standards" published by the Agency in 2001, ISBN 1-

84095-015-3.

Hours of operation	The hours during which the facility is authorised to be operational.
Hours of waste acceptance	The hours during which the facility is authorised to accept waste.
ICP	Inductively coupled plasma spectroscopy.
Incident	The following shall constitute as incident for the purposes of this licence: <ul style="list-style-type: none"> (i) an emergency; (ii) any emission which does not comply with the requirements of this licence; (iii) any exceedance of the daily duty capacity of the waste handling equipment; (iv) any trigger level specified in this licence which is attained or exceeded; and (v) any indication that environmental pollution has, or may have, taken place.
Industrial waste	As defined in Section 5(1) of the Waste Management Acts 1996 to 2010.
Inert waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.
Initial development works	Such works, actions or constructions as may be specified, which for the purposes of environmental protection and safe construction and operation of the facility, have to be carried out in the initial stages of site development, and in any case in advance of the commencement of construction of the landfill cells.
Intermediate cover	Refers to placement of suitable, adequate and stable material (minimum of 300mm if soil is used) over deposited waste for a period of time prior to temporary capping in uncapped areas other than daily cover.
IPPC	Integrated Pollution Prevention & Control.
K	Kelvin.
kPa	Kilopascals.
Landfill Directive	Council Directive 1999/31/EC.
Landfill footprint	The area of the facility where waste is deposited.
LEMP	Landfill Environmental Management Plan
L_{eq}	Equivalent continuous sound level.
Licence	A Waste Licence issued in accordance with the Acts.
Licensee	Cavan County Council
Liquid waste	Any waste in liquid form and containing less than 2% dry matter.

List I	As listed in the EC Directives 2006/11/EC and 80/68/EEC and amendments.
List II	As listed in the EC Directives 2006/11/EC and 80/68/EEC and amendments.
LLDPE	Linear low-density polyethylene
Local Authority	Cavan County Council.
Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to perform its function adequately.
Monthly	A minimum of 12 times per year, at intervals of approximately one month.
Municipal waste	As defined in Section 5(1) of the Acts.
Municipal solid waste (MSW)	Household waste as well as commercial and other waste which, because of its nature or composition, is similar to household waste. Excluding municipal sludges and effluents.
Night-time	2200 hrs to 0800 hrs
Noise-sensitive location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation/facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Oil separator	Device installed according to the International Standard I.S. EN 858-2:2003 (Separator system for light liquids, (e.g. oil and petrol) – Part 2: Selection of normal size, installation, operation and maintenance).
OMP	Odour Management Plan
PRTR	Pollutant Release and Transfer Register.
Quarterly	All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
Residual waste	The fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal.
Sample(s)	Unless the context of this licence indicates to the contrary, the term samples shall include measurements taken by electronic instruments.
Sanitary effluent	Wastewater from facility toilet, washroom and canteen facilities.
Separate Collection	The collection of biowaste separately from other kinds of waste in such a way as to avoid the different waste fractions or waste components from waste being mixed, combined or contaminated with other potentially polluting wastes, products or materials.
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment, with greater than 2% dry matter.
SOP	Standard operating procedure.
Source segregated waste	Waste which is separated at source; meaning that the waste is sorted at the point of generation into a recyclable fraction(s) for separate collection (e.g., paper, metal, glass, plastic, bulk dry recyclables, biodegradables, etc.) and a residual fraction. The expression 'separate at source' shall be construed accordingly.
Specified emissions	Those emissions listed in <i>Schedule B: Emission Limits</i> , of this licence.

Standard method	A National, European or internationally recognised procedure (e.g. I.S. EN, ISO, CEN, BS or equivalent); or an in-house documented procedure based on the above references; a procedure as detailed in the current edition of "Standard Methods for the Examination of Water and Wastewater" (prepared and published jointly by A.P.H.A., A.W.W.A. & W.E.F.), American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA; or an alternative method as may be agreed by the Agency.
Storm water	Rain water run-off from roof and non-process areas.
Temporary capping	Refers to provision of a temporary capping system, of at least 0.5m thick and including a gas barrier membrane, to allow for settlement prior to the installation of the final capping system. A sacrificial gas barrier membrane should also be laid on the interfaces between the cell being capped and future cells. [The application of the sub-soil/top soil layers to such interfaces is not considered necessary by the Agency].
The Agency	Environmental Protection Agency.
TOC	Total organic carbon.
Trade effluent	Trade effluent has the meaning given in the Water Services Act, 2007.
Treated Sludge	Sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as significantly to reduce its fermentability and the health hazards resulting from its use.
Treatment/pre-treatment	In relation to waste, any manual, thermal, physical, chemical or biological processes that change the characteristics of waste in order to reduce its volume or hazardous nature or facilitate its handling, disposal or recovery.
Trigger level	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
VOC	Volatile Organic Compounds
Water Services Authority	Cavan County Council.
Weekly	During all weeks of plant operation and, in the case of emissions, when emissions are taking place: with at least one measurement in any one week.
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.
WWTP	Waste water treatment plant.

Decision & Reasons for the Decision

The Environmental Protection Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence, any emissions from the activity will comply with and will not contravene any of the requirements of Section 40(4) of the Waste Management Acts 1996 to 2010.

Recommended Determination

In reaching this decision the Environmental Protection Agency has considered:

- the application and supporting documentation received from the applicant, all submissions received from other parties and the **two** reports of its inspector **relating to the application (register number W0077-04)**;
- **the application made by Oxigen Environmental Ltd for a waste licence (application register number W0248-01), all submissions received from other parties and the report of its inspector in respect of that application; and**
- **documents dated 17 August 2009 and 1 February 2010 provided to the Office of Environmental Enforcement by Oxigen Environmental Ltd relating to proposals for the development of landfilling infrastructure at the facility.**

Part I Schedule of Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2010, the Environmental Protection Agency (the Agency) proposes, under Section 46(8) of the said Acts to grant this Waste Licence to **Cavan County Council, Courthouse, Cavan, County Cavan to carry on the waste activities listed below at Corranure Landfill, Lismagratty and Corranure Townlands, Cootehill Road, Cavan, County Cavan**, subject to 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 2010

Class 1	Deposit on, in or under land (including landfill).
Class 4	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
Class 5	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
Class 7	Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule.
Class 11	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 12	Repacking prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2010

Class 2	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes).
Class 3	Recycling or reclamation of metals and metal compounds.
Class 4	Recycling or reclamation of other inorganic materials. [Principal Activity].
Class 9	Use of any waste principally as a fuel or other means to generate energy.
Class 11	Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
Class 12	Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

Part II Schedule of Activities Refused

None of the proposed activities as set out in the licence application have been refused.

Part III Conditions

Condition 1. Scope

- 1.1 Waste activities at this facility shall be restricted to those listed and described in *Part I Schedule of Activities Licensed*, and shall be as set out in the licence application or as modified under Condition 1.4 of this licence and subject to the conditions of this licence.
- 1.2 Activities at this facility shall be limited as set out in *Schedule A: Limitations*, of this licence.
- 1.3 For the purposes of this licence, the facility authorised by this licence is the area of land outlined in red on Drawing No. DG 0012-01 Rev. F01 *Corranure Landfill Site Plan (dated 20/06/2007)*. Any reference in this licence to "facility" shall mean the area thus outlined in red. The licensed activities shall be carried on only within the area outlined.
- 1.4 No alteration to, or reconstruction in respect of, the activity, or any part thereof, that would, or is likely to, result in
- (i) a material change or increase in:
- the nature or quantity of any emission;
 - the abatement/treatment or recovery systems;
 - the range of processes to be carried out;
 - the fuels, raw materials, intermediates, products or wastes generated, or
- (ii) any changes in:
- site management, infrastructure or control with adverse environmental significance;
- shall be carried out or commenced without prior notice to, and without the agreement of, the Agency.
- 1.5 The facility shall be controlled, operated and maintained, and emissions shall take place as set out in the licence. All programmes required to be carried out under the terms of this licence become part of this licence.
- 1.6 This licence is for purposes of waste licensing under the Waste Management Acts 1996 to 2010 only and nothing in this licence shall be construed as negating the licensee's statutory obligations, or requirements under any other enactments or regulations.
- 1.7 Waste Acceptance Hours and Hours of Operation
- 1.7.1 Landfill
- Waste may be accepted at the facility for disposal at the landfill only between the hours of 8:30 to 16:30 Monday to Friday inclusive and 8:00 to 12:30 on Saturdays.
- The landfill at the facility may be operated only during the hours of 8:00 to 17:30 Monday to Friday inclusive and 8:00 to 13:00 on Saturdays.
- Waste shall not be accepted at the facility on Sundays and Bank/Public Holidays, other than with the written agreement of the Agency.
- 1.7.2 Civic Amenity Facility
- The civic amenity facility shall be operated only between the hours of 08.00 and 19.30 Monday to Saturday inclusive.**
- Waste shall be accepted only between the hours of 08.00 and 19.00.**
- 1.7.3 Construction activities
- Construction activities at the facility may take place only between the hours of 08.00 and 18.00 Monday to Saturday inclusive (public holidays excluded, unless otherwise agreed by the Agency).**

- 1.8 **With the exception of the civic amenity facility, only non-hazardous waste shall be accepted at the facility.**
- 1.9 This licence is being granted in substitution for the waste licence granted to the licensee on 2^{4th} March 2010 and bearing Waste Licence Register No: W0077-03. The previous waste licence (Register No: W0077-03) is superseded by this licence.

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

Condition 2. Management of the Facility

2.1 Facility Management

- 2.1.1 The licensee shall employ a suitable qualified and experienced (**minimum 5 years as manager of a landfill**) facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced (**minimum 2 years landfill management experience**) deputy shall be present on the facility at all times during its operation or as otherwise required by the Agency.
- 2.1.2 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. In addition, the facility manager and his/her deputy shall successfully complete a FÁS waste management training programme or equivalent agreed by the Agency.
- 2.1.3 The Civic Waste Facility shall be supervised by an appropriately qualified and competent person at all times while waste is accepted.

2.2 Environmental Management System (EMS)

- 2.2.1 The licensee shall **maintain** an Environmental Management System (EMS). The EMS shall be updated on an annual basis.

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

2.2.2.1 Management and Reporting Structure

2.2.2.2 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.

2.2.2.3 Landfill Environmental Management Plan (LEMP)

The licensee shall maintain a LEMP, including a time schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.2.2.2. The LEMP shall have regard to the guidance set out in the EPA Manual on Landfill Operational Practices. The LEMP shall include:

- designation of responsibility for targets;
- the means by which they may be achieved; and
- the time within which they may be achieved.

The LEMP shall be reviewed annually and take into account 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. Amendments shall be notified to the Agency for agreement as part of the Annual Environmental Report (AER).

A report on the programme, including the success in meeting agreed targets, shall be prepared and submitted to the Agency as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Agency.

2.2.2.4 Documentation

- (i) The licensee shall **maintain** an environmental management documentation system which shall be to the satisfaction of the Agency.
- (ii) The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

2.2.2.5 Corrective Action

The licensee shall **maintain** procedures to ensure that corrective action is taken should the specified requirements of this licence not be fulfilled. The responsibility and authority for persons initiating further investigation and corrective action in the event of a reported non-conformity with this licence shall be defined.

2.2.2.6 Awareness and Training

The licensee shall **maintain** procedures for identifying training needs and for providing appropriate training for all personnel whose work can have a significant effect upon the environment. Appropriate records of training shall be maintained.

2.2.2.7 Communications Programme

The licensee shall **maintain** a Public Awareness and Communications Programme to ensure that members of the public are informed, and can obtain information at the facility at all reasonable times concerning the environmental performance of the facility.

2.2.2.8 Maintenance Programme

The licensee shall **maintain** a programme for maintenance of all plant and equipment based on the instructions issued by the manufacturer/supplier or installer of the equipment. Appropriate record keeping and diagnostic testing shall support this maintenance programme. The licensee shall clearly allocate responsibility for the planning, management and execution of all aspects of this programme to appropriate personnel (see **Condition 2.1** above).

2.2.2.9 Efficient Process Control

The licensee shall **establish and maintain** a programme to ensure there is adequate control of processes under all modes of operation. The programme shall identify the key indicator parameters for process control performance, as well as identifying methods for measuring and controlling these parameters. Abnormal process operating conditions shall be documented, and analysed to identify any necessary corrective action.

<p>Reason: <i>To make provision for management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.</i></p>

Condition 3. Infrastructure and Operation

- 3.1 The licensee shall establish and maintain, for each component of the facility, all infrastructure referred to in this licence in advance of the commencement of the licensed activities in that component, or as required by the conditions of this licence
- 3.2 The landfill footprint (maximum lateral extent of landfilling) shall be **limited to the development and filling of cell 4 at the facility.**
- 3.3 Wastes shall not be deposited in any new cell without the prior agreement of the Agency.
- 3.4 Phased Construction Plan
- 3.4.1 The licensee shall **maintain, in a manner agreeable to the Agency,** a construction schedule, sequence and timescale (Construction Plan) incorporating the requirements of this licence and to give effect to the commitments in the application documentation. This Plan shall have regard, **as appropriate,** to the following development phases: (i) initial development works, (ii) main infrastructure development works (pre-acceptance of waste for disposal), and (iii) future/planned works (in parallel with waste disposal, e.g. future cell development/phasing). The Construction Plan for cell development shall have regard to the sequencing necessary to provide short-, medium- and long-term screening of the operational areas.
- 3.4.2 For cells accepting biodegradable wastes, cell development/phasing plans shall have regard to the following timeframes:
- (i) Completed (filled) parts of cells, side slopes and cell interfaces shall be capped (temporary capping system) within **10 months** of the commencement of waste disposal in that cell/sub-cell;
 - (ii) A settlement period, subsequent to (i), of up to 24 months prior to the installation of the final capping system for the cell;
 - (iii) The permanent capping (final capping system as per Condition 10.4) of cells or sub-cells within 48 months of the commencement of waste disposal in that cell/sub-cell.
- 3.4.3 The maximum depth of waste to be deposited in cell 4 shall be 15 metres.**
- 3.5 Specified Engineering Works (SEW)
- 3.5.1 The licensee shall submit proposals for any Specified Engineering Works, as defined in *Schedule D: Specified Engineering Works*, of this licence, to the Agency for its agreement at least two months in advance of the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.
- 3.5.2 All specified engineering works shall be supervised by an appropriately qualified person, and that person, or persons, shall be present at all times during which relevant works are being undertaken.
- 3.5.3 Following the completion of any 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, as appropriate, include the following information:
- (i) A description of the works;
 - (ii) As-built drawings of the works;
 - (iii) Records and results of all tests carried out (including failures);
 - (iv) Drawings and sections showing the location of all samples and tests carried out;
 - (v) Name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;

- (vi) Records of any problems and the remedial works carried out to resolve those problems; and
 - (vii) Any other information requested in writing by the Agency.
- 3.6 The licensee shall have regard to the guidance given in the Environmental Protection Agency Landfill Manuals (Site Design, Operational Practices, Monitoring, Site Investigations, and Restoration and Aftercare), as may be relevant, in the development, operation and closure of the facility.
- 3.7 Landfill Lining
 - 3.7.1 Unless otherwise agreed in writing, the landfill lining system shall comprise:
 - (i) A composite liner consisting of a 1m layer of clay with a hydraulic conductivity of less than or equal to $1 \times 10^{-9} \text{ m}^3/\text{m}^2 \text{ per/s}$, overlain by a 2mm thick high-density polyethylene (HDPE) layer;
 - (ii) A geotextile protection layer placed over the HDPE layer. (The choice of geotextile is to be proven in advance by an appropriate cylinder test, the results of which are to be submitted as part of the SEW identified in Condition 3.5);
 - (iii) A 500 mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of $1 \times 10^{-3} \text{ m}^3/\text{m}^2 \text{ per/s}$, of pre-washed, uncrushed, granular, rounded stone (16-32mm grain size) incorporating leachate collection drains;
 - (iv) The lining system on the base of the facility shall be laid to a minimum slope of 1:50, and
 - (v) The side walls shall be designed and constructed to achieve an equivalent protection.
 - 3.7.2 Unless otherwise agreed by the Agency, formation levels of Phase 3 shall be arranged such that sufficient thickness (at least 3m) of in-situ clay remains between base of facility and bedrock.
- 3.8 Facility Notice Board
 - 3.8.1 The licensee shall **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. The notice board shall be maintained thereafter.
 - 3.8.2 The board shall clearly show:
 - (i) the name and telephone number of the facility;
 - (ii) the normal hours of opening and operation;
 - (iii) the name of the licence holder;
 - (iv) an emergency out of hours contact telephone number;
 - (v) the licence reference number; and
 - (vi) where environmental information relating to the facility can be obtained.
 - 3.8.3 A plan of the facility clearly identifying the location of each storage and treatment area shall be displayed as close as is possible to the entrance to the facility. The plan shall be displayed on a durable material such that is legible at all times. The plan shall be replaced as material changes to the facility are made.
- 3.9 Facility Security
 - 3.9.1 Security and stockproof fencing and gates shall be installed and maintained. The base of the fencing shall be set in the ground. Subject to the implementation of the restoration and aftercare plan and to the agreement of the Agency, the requirement for such site security may be removed.
 - 3.9.2 Gates shall be locked shut when the facility is unsupervised.
 - 3.9.3 The licensee shall remedy any defect in the gates and/or fencing as follows:
 - (i) a temporary repair shall be made by the end of the working day; and

- (ii) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days.
- 3.10 Facility Roads and Hardstanding
 - 3.10.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.
 - 3.10.2 The facility entrance area, the access road to the civic waste facility, the civic waste facility itself and hardstanding areas shall be appropriately paved and maintained in an **impervious**, fit and clean condition.
- 3.11 Facility Office
 - 3.11.1 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.
 - 3.11.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.
- 3.12 Construction & Demolition Waste Storage Area

In advance of commencement of landfill construction activities involving approved imported recovered construction & demolition waste streams, the licensee shall provide and maintain a construction and demolition waste storage area. This infrastructure shall at a minimum comprise the following:

 - (i) an impermeable concrete slab; and
 - (ii) collection and disposal infrastructure for all run-off.
- 3.13 Waste Inspection and Quarantine Areas
 - 3.13.1 A waste inspection area and a waste quarantine area shall be provided and maintained at the facility.
 - 3.13.2 These areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The waste inspection area and the waste quarantine area shall be clearly identified and segregated from each other.
 - 3.13.3 Drainage from these areas shall be directed to the leachate management system.
- 3.14 Weighbridge and Wheel Cleaner
 - 3.14.1 The licensee shall provide and maintain a weighbridge and wheel cleaners at the facility.
 - 3.14.2 The wheel cleaners shall be used by all vehicles leaving the facility as required to ensure that no process water or waste is carried off-site. All water from the wheel cleaning area shall be directed to the leachate management system.
- 3.15 Leachate Management Infrastructure
 - 3.15.1 Leachate management infrastructure shall be provided and maintained at the facility as described in the application documentation, **updated as appropriate** or as may be varied by a licence condition **or by agreement with the Agency**.
 - 3.15.2 Leachate pumps shall be provided on the basis of 100% standby capacity.**
 - 3.15.3 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping. The leachate lagoon lining shall be a composite liner equivalent to the landfill liner and constructed using the same methods.
- 3.16 Landfill Gas Management
 - 3.16.1 Active landfill gas management infrastructure as appropriate, to include gas flare(s) and interconnecting pipework, shall be provided **as described in the application documentation, updated as appropriate or as may be varied by a licence condition or by agreement with the Agency**, and ready for operation prior to the

commencement of disposal of gas forming wastes in the landfill. Such infrastructure shall be provided in advance to match the phased filling of the landfill cells.

3.16.2 The active landfill gas management infrastructure shall consist of horizontal and vertical gas collection. The horizontal systems shall be installed at lifts no greater than **3 metres**, and shall be used during cell filling to, in as far as practicable, provide a negative pressure within the waste body. In addition this shall include provision of a horizontal gas collection system at the top of side slopes to minimise gas emanating from the leachate collection layer.

3.16.3 All landfill gas extraction well-heads shall be designed to include a regulating valve and monitoring points either side of the said valve. The licensee shall also provide monitoring ports at regular intervals along the gas extraction system. The monitoring ports shall be suitable for the monitoring outlined in *Schedule C*.

3.16.4 Condensate Management

The licensee shall implement a landfill gas condensate management plan at the facility and this shall include, as a minimum, the following:

- (i) identification of all areas of the landfill gas extraction system where condensate is likely to accumulate;
- (ii) daily maintenance schedule to provide for the inspection and removal of condensate from landfill gas extraction pipework; and
- (iii) rationalisation/elimination of narrow diameter pipework (i.e. 50mm I.D. or less) at the facility.

3.16.5 The licensee shall, as part of Conditions 3.4 and 3.5, submit for agreement a specification for the construction, location and installation phasing of landfill gas monitoring locations.

3.16.6 A network of perimeter gas monitoring wells shall be maintained and developed to the Agency's satisfaction.

3.16.7 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.

3.16.8 Within three months of the date of grant of this licence, 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 or directed by the Agency.

3.17 Groundwater

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

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

3.17.2 All wells & boreholes shall be adequately sealed to prevent surface contamination and, as may be appropriate, decommissioned according to the UK Environment Agency guidelines "Decommissioning Redundant Boreholes and Wells" (or as otherwise may be agreed by the Agency).

3.17.3 Groundwater monitoring wells shall be constructed having regard to the guidance given in the Agency's landfill manual "Landfill Monitoring".

3.17.4 The licensee shall implement any agreed groundwater management programme in the case of a high water table at the lining works phase to include a proposal on monitoring of extracted groundwater.

3.18 Civic Waste Facility

- 3.18.1 The licensee shall provide and maintain appropriate receptacles at the Civic Waste Facility for the storage of various waste types.
- 3.18.2 At the end of the working day the floor of the Civic Waste Facility shall be cleared of waste.
- 3.19 The licensee shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the Agency. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.
- 3.20 In the case of composite sampling of aqueous emissions from the operation of the facility, a separate composite sample or homogeneous sub-sample (of sufficient volume as advised) shall be refrigerated immediately after collection and retained as required for EPA use.
- 3.21 The licensee shall clearly label and provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency. The requirement with regard to off-site points is subject to the prior agreement of the landowner(s) concerned.
- 3.22 Tank, Container and Drum Storage Areas
- 3.22.1 All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2004).
- 3.22.2 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:
- (i) 110% of the capacity of the largest tank or drum within the bunded area; or
 - (ii) 25% of the total volume of substance that could be stored within the bunded area.
- 3.22.3 All drainage from bunded areas shall be treated as hazardous waste unless it can be demonstrated to be otherwise. All drainage from bunded areas shall be diverted for collection and safe disposal.
- 3.22.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 3.22.5 All tanks, containers and drums shall be labelled to clearly indicate their contents.
- 3.23 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.
- 3.24 Silt Traps and Oil Separators
- The licensee shall **maintain** silt traps and oil separators at the facility:
- (i) Silt traps to ensure that all storm water discharges, other than from roofs, from the facility pass through a silt trap in advance of discharge;
 - (ii) An oil separator on the storm water discharge from yard **and all hardstanding** areas. The separator shall be a Class I full retention separator.
- The silt traps and separator shall be in accordance with I.S. EN-858-2:2003 (separator systems for light liquids). A manual shut-off valve shall be installed at the interceptor.
- 3.25 Fire-water Retention
- 3.25.1 The licensee shall carry out a risk assessment to determine if the activity should have a fire-water retention facility. The licensee shall submit the assessment and a report to the Agency on the findings and recommendations of the assessment within six months of the date of grant of this licence.
- 3.25.2 In the event that a significant risk exists for the release of contaminated fire-water, the licensee shall, based on the findings of the risk assessment, prepare and implement, with the agreement of the Agency, a suitable risk management programme. The risk management programme shall be fully implemented within three months of date of notification by the Agency.

- 3.25.3 In the event of a fire or a spillage to storm water, the site storm water shall be diverted to the containment pond. The licensee shall examine, as part of the response programme in Condition 3.25.1 above, the provision of automatic diversion of storm water to the containment pond. The licensee shall have regard to any guidelines issued by the Agency with regard to firewater retention.
- 3.25.4 The licensee shall have regard to the Environmental Protection Agency Draft Guidance Note to Industry on the Requirements for Fire-Water Retention Facilities when implementing Conditions 3.25.1 and 3.25.2 above.
- 3.26 All pump sumps, storage tanks, lagoons or other treatment plant chambers from which spillage of environmentally significant materials might occur in such quantities as are likely to breach local or remote containment or separators, shall be fitted with high liquid level alarms (or oil detectors as appropriate) within **six** months from the date of grant of this licence.
- 3.27 The provision of a catchment system to collect any leaks from flanges and valves of all over-ground pipes used to transport material other than water shall be examined. This shall be incorporated into a Schedule of Environmental Objectives and Targets set out in Condition 2 of this licence for the reduction in fugitive emissions.
- 3.28 All wellheads shall be adequately protected to prevent contamination or physical damage.
- 3.29 The licensee shall **maintain** in a prominent location on the site a wind sock, or other wind direction indicator, which shall be visible from the public roadway outside the site.
- 3.30 The licensee shall operate a weather monitoring station on the site at a location agreed by the Agency which records conditions of wind speed and wind direction **and other parameters specified in Schedule C.9.**
- 3.31 Surface Water Management
- 3.31.1 Effective surface water management infrastructure shall be provided and maintained at the facility during construction, operation, restoration and aftercare of the facility. As a minimum, the infrastructure shall be capable of the following:-
- the prevention of contaminated water and leachate discharges into surface water drains and courses; and
 - the collection/diversion of run-off arising from capped and restored areas.
- 3.31.2 Surface water run-off perimeter drains shall be installed and maintained at the facility unless otherwise agreed by the Agency.
- 3.31.3 The licensee shall maintain a drawing indicating all drainage arrangements at the facility.
- 3.32 The licensee shall provide shut-off valves on any surface/wastewater discharge lines.
- 3.33 A buffer zone in which no waste shall be landfilled shall be provided and maintained within the facility. The buffer zone shall be located as shown on Drawing No. DG0030-01 Rev. F01 *Buffer Zone Existing and Proposed* received by the Agency on 30/08/04.

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

Condition 4. Interpretation

- 4.1 Emission limit values for emissions to atmosphere in this licence shall be interpreted in the following way:
- 4.1.1 Continuous Monitoring
- No 24 hour mean value shall exceed the emission limit value.

- (ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
 - (iii) No 30 minute mean value shall exceed twice the emission limit value.
- 4.1.2 Non-Continuous Monitoring
- (i) 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.
 - (ii) For flow, no hourly or daily mean value, calculated on the basis of appropriate spot readings, shall exceed the relevant limit value.
 - (iii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.
- 4.2 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 :
- 4.2.1 In the case of landfill gas flare:
Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and
- 4.2.2 In the case of landfill gas combustion plant:
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.
- 4.3 Emission limit values for emissions to sewer/waters in this licence shall be interpreted in the following way:
- 4.3.1 Continuous Monitoring
- (i) No flow value shall exceed the specific limit.
 - (ii) No pH value shall deviate from the specified range.
 - (iii) No temperature value shall exceed the limit value.
- 4.3.2 Composite Sampling
- (i) No pH value shall deviate from the specified range.
 - (ii) For parameters other than pH and flow, eight out of ten consecutive composite results, based on flow proportional composite sampling, shall not exceed the emission limit value. No individual results similarly calculated shall exceed 1.2 times the emission limit value.
- 4.3.3 Discrete Sampling
- For parameters other than pH and temperature, no grab sample value shall exceed 1.2 times the emission limit value.
- 4.4 Where the ability to measure a parameter is affected by mixing before emission, then, with agreement from the Agency, the parameter may be assessed before mixing takes place.
- 4.5 Noise from the facility shall not give rise to sound pressure levels (Leq, T) measured at **noise sensitive locations** which exceed the limit value(s).
- 4.6 Dust and particulate matters from the activity shall not give rise to deposition levels which exceed the limit value(s).

Reason: To clarify the interpretation of limit values fixed under the licence.

Condition 5. Emissions

- 5.1 No specified emission from the facility shall exceed the emission limit values set out in *Schedule B: Emission Limits*, of this licence. There shall be no other emissions of environmental significance.
- 5.2 No emissions, including odours, from the activities carried on at the site shall result in an impairment of, or an interference with amenities or the environment beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary.
- 5.3 The licensee shall ensure that all or any of the following:
- vermin
 - birds
 - flies
 - mud
 - dust
 - litter

associated with the activity do not result in an impairment of, or an interference with, amenities or the environment at the facility or beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary. Any method used by the licensee to control or prevent any such impairment/interference shall not cause environmental pollution.

- 5.4 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.
- 5.5 Emissions to Sewer
- 5.5.1 The licensee shall at no time discharge or permit to be discharged into the sewer any liquid matter or thing that is or may be liable to set or congeal at average sewer working temperature or is capable of giving off any inflammable or explosive gas or any acid, alkali or other substance in sufficient concentration to cause corrosion to sewer pipes, penstock and sewer fittings or the general integrity of the sewer.
- 5.5.2 **No additional effluent, apart from the leachate produced by cells 0, 1, 2, 3 and 4 shall be permitted to discharge to the sewer without prior consent of the sanitary authority.**
- 5.5.3 **Leachate may be discharged to the council sewer by the licensee treated or untreated subject to the limit values set out in *Schedule B.3*, at costs to be determined by the sanitary authority.**
- 5.5.4 **In the first 6 months of operation of the licence, the licensee shall undertake additional monitoring for the parameters listed in Table C.2 of the Agency's *Landfill Manual Landfill Monitoring (Edition 2)*. Monitoring shall be undertaken in the last week of each month and submitted to the sanitary authority. Evidence of this monitoring shall be retained at the facility.**
- 5.5.5 The licensee shall permit authorised persons of the Agency and the Sanitary Authority to inspect, examine and test, at all reasonable times, any works and apparatus installed in connection with the process effluent and to take samples of the process effluent.
- 5.6 Emissions to Surface Water
- 5.6.1 No leachate from the lined landfill cells, wastewater or contaminated water shall be discharged to surface water drains and courses.
- 5.6.2 No substance shall be discharged in a manner or at a concentration that, following initial dilution, causes tainting of fish or shellfish.
- 5.6.3 Groundwater extracted during construction of Phase 3 shall be discharged to the surface water drainage network subject to condition 3.17.4.
- 5.7 Emissions to Groundwater
- 5.7.1 There shall be no direct emissions to groundwater from the lined landfill cells.

- 5.7.2 Groundwater monitoring trigger levels shall be as agreed by the Agency and shall be in accordance with the requirements of Directive 1999/31/EC.
- 5.7.3 The trigger levels as specified in Condition 5.7.2 for groundwater shall be measured at monitoring boreholes specified in *Schedule C.7*.

Reason: *To provide for the protection of the environment by way of control and limitation of emissions and to provide for the requirements of the Sanitary Authority in accordance with Section 52 of the Waste Management Acts 1996 to 2010.*

Condition 6. Control and Monitoring

- 6.1 Test Programme
- 6.1.1 The licensee shall prepare to the satisfaction of the Agency, a test programme for **new** abatement equipment installed to abate emissions to atmosphere. This programme shall be submitted to the Agency in advance of implementation.
- 6.1.2 The programme, following agreement with the Agency, shall be completed within three months of the commencement of operation of the abatement equipment.
- 6.1.3 The criteria for the operation of the abatement equipment as determined by the test programme, shall be incorporated into the standard operating procedures.
- 6.1.4 The test programme shall as a minimum:
- (i) establish all criteria for operation, control and management of the abatement equipment to ensure compliance with the emission limit values specified in this licence; and
 - (ii) assess the performance of any monitors on the abatement system and establish a maintenance and calibration programme for each monitor.
- 6.1.5 A report on the test programme shall be submitted to the Agency within one month of completion.
- 6.2 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out below and as in accordance with *Schedule C: Control & Monitoring*, of this licence.
- 6.2.1 Analyses shall be undertaken by competent staff in accordance with documented operating procedures.
- 6.2.2 Such procedures shall be assessed for their suitability for the test matrix and performance characteristics shall be determined.
- 6.2.3 Such procedures shall be subject to a programme of Analytical Quality Control using control standards with evaluation of test responses.
- 6.2.4 Where any analysis is sub-contracted it shall be to a competent laboratory.
- 6.3 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 or alternative methods shall apply with the agreement of the Agency.
- 6.4 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on unless alternative sampling or monitoring has been agreed in writing by the Agency for a limited period. In the event of the malfunction of any continuous monitor, the licensee shall contact the Agency as soon as practicable, and alternative sampling and monitoring facilities shall be put in place. The use of alternative equipment, other than in emergency situations, shall be as agreed by the Agency.

- 6.5 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission or discharge (or ambient conditions where that is the monitoring objective).
- 6.6 The licensee shall ensure that groundwater monitoring well sampling equipment is available/installed on-site and is fit for purpose at all times. The sampling equipment shall be to Agency specifications.
- 6.7 All treatment/abatement and emission control equipment shall be calibrated and maintained in accordance with the instructions issued by the manufacturer/supplier or installer.
- 6.8 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended with the agreement of the Agency following evaluation of test results.
- 6.9 The licensee shall prepare a programme, to the satisfaction of the Agency, for the identification and reduction of fugitive emissions using an appropriate combination of best available techniques. This programme shall be included in the Environmental Management Programme.
- 6.10 The integrity and water tightness of all underground pipes, tanks, bunding structures and containers and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee within 12 months of the date of grant of this licence. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. This testing shall be carried out in accordance with any guidance published by the Agency. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.
- 6.11 The drainage system (i.e., gullies, manholes, any visible drainage conduits and such other aspects as may be agreed) and bunds, silt traps and oil separators shall be inspected weekly and desludged as necessary. All sludge and drainage from these operations shall be collected for safe disposal. The drainage system, bunds, silt traps and oil interceptors shall be properly maintained at all times.
- 6.12 An inspection for leaks on all flanges and valves on over-ground pipes used to transport materials other than water shall be carried out weekly. A log of such inspections shall be maintained.
- 6.13 The licensee shall carry out a noise survey of the site operations annually. The survey programme shall be undertaken in accordance with the methodology specified in the 'Environmental Noise Survey Guidance Document' as published by the Agency.
- 6.14 Pollutant Release and Transfer Register (PRTR)
- The licensee shall prepare and report a PRTR for the site. The substance and/or wastes to be included in the PRTR shall be as agreed by the Agency each year by reference to EC Regulations No. 166/2006 concerning the establishment of the European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC. The PRTR shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted electronically in specified format and as part of the AER.
- 6.15 The licensee shall, within six months of the date of grant of this licence, develop and establish a Data Management System for collation, archiving, assessing and graphically presenting the monitoring data generated as a result of this licence.
- 6.16 Telemetry
- A telemetry system shall be **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.
- This system shall include:
- (i) recording of leachate levels in the lined cells, **leachate sumps, storage tank(s)** and lagoon;
 - (ii) recording of levels in surface water lagoon(s) and flows to the perimeter streams:

- (iii) recording of quality of the surface water at the inlet to surface water lagoons and being discharged to the perimeter streams: and
- (iv) a permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.

6.17 Leachate Management

- 6.17.1 Leachate levels in the waste shall not exceed a level of 1.0 m over the top of the liner at the base of the lined landfill.
- 6.17.2 The level of leachate in the pump sumps shall be monitored as outlined in *Schedule C.3* of this licence.
- 6.17.3 The operation of leachate pumps shall be checked daily.**
- 6.17.4 The frequency of leachate removal from the leachate holding tank(s)/storage lagoon(s) shall be such that a minimum freeboard of **0.75m** shall be maintained in the tank(s)/lagoon(s) at all times. The required freeboard shall be clearly indicated in the tank.
- 6.17.5 The licensee shall **maintain for inspection** evidence to demonstrate that an agreement is in place regarding leachate removal (from the site) and treatment.
- 6.17.6 Leachate shall be discharged to sewer for treatment at Cavan waste water treatment plant except in exceptional circumstances as may be otherwise agreed with the Agency.**
- 6.17.7 Unless treated at the facility or discharged to sewer, leachate removed from the facility shall be tankered off-site in fully enclosed road tankers to a **treatment** facility approved in advance by the Agency.
- 6.17.8 Recirculation of leachate or other contaminated water shall only be undertaken within lined cells and with the written agreement of the Agency.
- 6.17.9 Notwithstanding the requirements of Condition 6.17 generally, the licensee shall, within two years of the date of grant of this licence and as appropriate every five years thereafter, carry out and submit to the Agency an independently verified economic, technical and environmental assessment of the feasibility of providing onsite treatment of the leachate generated at the facility. The assessment shall consider the provision of treatment during the active, closure and post closure phases. Recommendations shall be implemented according to a schedule as may be agreed with or specified by the Agency.**

6.18 Landfill Gas

- 6.18.1 At least two rounds of landfill gas sampling (one during falling atmospheric pressure) in locations external to the disposal cells shall be completed in advance of commencement of filling of any new area.
- 6.18.2 Unless where otherwise agreed by the Agency, all landfill gas collected shall be flared in an enclosed flare or landfill gas utilisation plant. The use of open flares is only acceptable as an interim measure on a temporary basis and with prior Agency agreement.
- 6.18.3 Flares shall be operated to ensure a burn chamber residence time of minimum 0.3 seconds and burn temperature of minimum 1000°C.
- 6.18.4 In order to minimise release of untreated landfill gas at nuisance forming concentrations/volumes, the landfill gas flare shall be capable of operating with a gas support fuel (e.g. natural gas) to allow effective treatment of landfill gas in the event that the landfill gas itself cannot support combustion. Alternative appropriate treatment techniques may be employed with the written prior approval of the Agency.
- 6.18.5 The licensee shall ensure that measures are in place to ensure the continuous operation of the required landfill gas management infrastructure at all times.

- 6.18.6 The landfill gas flaring/utilisation plant shall be designed, managed and operated to ensure the optimum collection of gas irrespective of the quality of the gas. At least one on-site staff member shall have adequate knowledge and training on the operation of the landfill gas management system and balancing of the gas fields to maximise landfill gas control. The licensee shall ensure that regular (daily/weekly routines) assessment of the operation of the landfill gas management system, e.g. field balancing and control of condensate, is carried out and that records of these assessments are maintained on site.
- 6.18.7 For cells accepting biodegradable/gas forming wastes, the licensee shall arrange for an annual independent assessment of the landfill gas management system. The licensee shall undertake actions, as necessary, having regard to the recommendations of this independent assessments as may be required by the Agency.
- 6.18.8 The licensee shall conduct continuous gas monitoring in the site office and any other enclosed structures at the facility for methane (CH₄) % v/v, carbon dioxide (CO₂) % v/v and oxygen (O₂) % v/v;
- 6.18.9 In relation to landfill derived gases the following shall constitute a trigger level:
- (i) Methane greater than 1% v/v; or,
 - (ii) Carbon dioxide greater than 1.5% v/v,
- measured in any monitoring borehole, building on or adjacent to the facility, service duct, manhole or other point as may be specified, located external to the body of waste.
- 6.18.10 The licensee shall carry out routine monitoring of the landfill gas management system in accordance with *Schedule C*.
- 6.19 Litter Control
- 6.19.1 **Effective** measures and infrastructure shall be applied to control litter at the facility.
- 6.19.2 **Litter fencing shall be installed and maintained around the perimeter of the active tipping area prior to the disposal of any waste in any cell.**
- 6.19.3 **During windy conditions the licensee shall utilise mobile litter netting in close proximity to the landfill working face.**
- 6.19.4 **All litter netting shall be kept tidy and litter trapped in the netting shall be removed as soon as practicable.**
- 6.19.5 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting as follows:
- (i) a temporary repair shall be made by the end of the working day; and
 - (ii) a repair to the standard of the original netting shall be undertaken within three working days.
- 6.19.6 All loose litter or other waste, placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working day after such waste is discovered.
- 6.19.7 The licensee shall ensure that all vehicles delivering waste to, and removing waste and materials from, the facility are appropriately covered.
- 6.20 Odour Control & Monitoring
- 6.20.1 The licensee shall **maintain** an Odour Management Plan (OMP) for the facility **that is agreeable to the Agency**.
- 6.20.2 The OMP referred to in Condition 6.20.1 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) Arrangements for the bi-annual preparation of an independent assessment and report on surface VOC emissions at the facility following completion of waste acceptance in any cell/sub-cell;
 - (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 and/or from side slopes);
 - (ix) Monitoring: - VOC surface emissions from capped areas, odour checks off-and on-site, receipt and evaluation/verification of odour complaints received.
- 6.20.3 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 C.6 Ambient Monitoring*, of this licence 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.
- 6.20.4 The OMP shall be reviewed annually and any updates/amendments submitted to the Agency as part of the Annual Environmental Report.
- 6.20.5 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 as methane average over capped area; or
 - (ii) VOC greater than or equal to 100ppmv as methane instantaneous reading on open surfaces within the landfill footprint; or
 - (iii) VOC greater than or equal to 500ppmv as methane around all identified features.
- 6.20.6 Leachate holding tanks/lagoons shall be covered, and head gases vented to treatment as may be required by the Agency.
- 6.20.7 All odorous or odour-forming wastes shall be covered as soon as practicable and in any case at the end of the working day.
- 6.20.8 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.
- 6.20.9 When siting and operating landfill gas infrastructure, regard shall be had to the potential for, and mitigation of, odour nuisance.

6.21 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 at least two weeks in advance of 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.

6.22 Operational Controls

- 6.22.1 Unless otherwise agreed in writing by the Agency, only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials.
- 6.22.2 Unless otherwise agreed in advance by the Agency, the working face of the landfill shall be no more than 25 metres long and 25 wide (i.e. 625m^2 surface area), no more than 2.5 metres in height after compaction, and have a slope no greater than 1 in 3.
- 6.22.3 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 in advance of the end of the working day.
- 6.22.4 The working face, or faces, shall each day at the end of the day be covered with suitable material.
- 6.22.5 Biostabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 8.5.4 (or meets the requirements of an alternative protocol as may be agreed under Condition 8.5.2), 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.
- 6.22.6 Unless otherwise agreed in writing by the Agency, daily cover shall be replaced by intermediate cover in any area of an active cell where a new covering lift of waste is not proposed within 7 days.
- 6.22.7 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 6.22.8 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over with the exception of works associated with the construction and installation of necessary infrastructure or otherwise only with the prior agreement of the Agency.
- 6.22.9 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.
- 6.22.10 Scavenging shall not be permitted at the facility.
- 6.22.11 Unless otherwise agreed by the Agency, all sludges shall be covered immediately with other waste.
- 6.22.12 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 6.22.13 No smoking shall be allowed at the facility.

6.23 Stability Assessment

The licensee shall carry out a stability assessment of the side slopes of the facility annually. The results of this assessment shall be reported as part of the Annual Environmental Report (AER).

6.24 Topographical Monitoring

A topographical survey shall be carried out **annually unless otherwise agreed by the Agency**. 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.

- 6.25 Within three months of the date of grant of this licence, the licensee shall submit to the Agency an appropriately scaled drawing or drawings showing all the monitoring locations that are stipulated in this licence including any noise sensitive locations and private wells to be monitored. The drawing shall include the eight-digit national grid reference of each monitoring point.

6.26 Nuisance Monitoring

- The licensee shall, on a daily basis, 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.
- 6.27 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.
- 6.28 **No waste vehicles shall be permitted to queue on the public road while awaiting access to the facility.**

Reason: To provide for the protection of the environment by way of treatment and monitoring of emissions and to provide for the requirements of the Water Services Authority in accordance with Section 52 of the Waste Management Acts 1996 to 2010.

Condition 7. Resource Use and Energy Efficiency

- 7.1 The licensee shall carry out an audit of the energy efficiency of the site within **six months** of the date of grant of this licence. The audit shall be carried out in accordance with the guidance published by the Agency, "Guidance Note on Energy Efficiency Auditing". The energy efficiency audit shall be repeated at intervals as required by the Agency.
- 7.2 The audit shall identify all practicable opportunities for energy use reduction and efficiency and the recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2 above.
- 7.3 The licensee shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. **The licensee shall seek and exploit available opportunities to collect roof water (from new buildings) and other surface water run-off for re-use in appropriate applications.** Reductions in water usage and capture and reuse initiatives shall be incorporated into Schedule of Environmental Objectives and Targets.
- 7.4 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 provide for the efficient use of resources and energy in all site operations.

Condition 8. Materials Handling

- 8.1 Disposal or recovery of waste on-site shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.
- 8.2 Waste Acceptance
- 8.2.1 Waste shall only be accepted at the facility from local authority waste collection or transport vehicles or holders of valid waste collection permits, unless exempted or excluded, issued under the Waste Management (Collection Permit) Regulations 2007, or as may be amended.
- 8.2.2 Within one month of the date of grant of this licence **or prior to acceptance of waste for landfilling, whichever is the later**, 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 EU Decision (2003/33/EC) on establishing the criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC on the landfill of waste.

- 8.2.3 The waste acceptance procedures established under Condition 8.2.2 shall provide:-
- for the checking of waste documentation on receipt of waste in the waste reception area;
 - for non pre-cleared customers, for the visual inspection and testing of waste in the waste inspection area pending acceptance/rejection;
 - for the visual inspection of waste when deposited at the working face; and
 - for the keeping for two months of any samples associated with on-site verification sampling of waste accepted at the facility.
- 8.2.4 The procedures established under Condition 8.2.2 shall ensure that waste is accepted at the facility only from known customers or new customers subject to initial waste profiling and waste characterisation off-site (civic amenity site excepted). The written records of this off-site waste profiling and characterisation shall be retained by the licensee for all active customers and for a two year period following termination of licensee/customer agreements. Any waste received from non pre-cleared customers should be directed to the quarantine area for inspection and characterisation prior to rejection or clearance for acceptance.
- 8.2.5 Waste arriving at the facility shall have its documentation checked at the point of entry to the facility and subject to this verification, weighed, recorded and directed to the working face/quarantine area as appropriate. Each load of waste deposited at the working face shall be inspected upon tipping. Only after such inspections may the waste be buried and covered over.
- 8.2.6 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.
- 8.2.7 Waste received at the facility from non pre-cleared costumers shall be directed to the quarantine area.
- 8.2.8 The dilution or mixture of waste solely in order to fulfil relevant waste acceptance criteria established under Condition 8.2.2 is prohibited.
- 8.2.9 No hazardous waste or liquid waste shall be disposed of at the facility.
- 8.2.10 Untreated biological sludges shall not be accepted at the facility.
- 8.2.11 Organic fines or other biodegradable residues from mechanical or biological treatment of waste shall not be accepted for disposal or recovery at the landfill.**
- 8.2.12 No mixed, segregated or processed dry recyclable waste of a biodegradable nature (including paper, cardboard and wood) shall be disposed of in the landfill under any circumstances.**
- 8.2.13 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.
- 8.2.14 Gypsum wastes shall not be placed in any landfill cell accepting biodegradable waste.
- 8.2.15 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.

- 8.2.16 In addition to the characterisation required under the waste acceptance procedures, the licensee shall carry out analyses on a minimum of one sample per annum for each industrial sludge source being accepted at the facility. The results of these analyses shall be presented in the AER.
- 8.2.17 Civic amenity facility**
- (i) The civic amenity facility shall be used only by private vehicles **except where sub-condition (ii) applies**. The facility shall not be used as a transfer station for disposal or recovery of waste by commercial waste contractors or local authority waste collection vehicles.
- (ii) **Hazardous waste of a similar nature to household hazardous waste may be accepted at the civic amenity facility from business customers and other non-household sources including farms. The licensee shall have regard to any guidance published by the Agency under the National Hazardous Waste Management Plan 2008-2012.**
- 8.3 Waste Treatment
- 8.3.1 Only waste that has been subject to treatment shall be accepted for disposal at the landfill facility.
- (i) Treatment shall at least 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.
- 8.4 Limit on acceptance of biodegradable municipal waste
- 8.4.1 Unless otherwise as may be specified by the Agency, the following limits shall apply:
- (i) **Until 30 June 2013 inclusive**, a maximum of 47% by weight of municipal solid waste (MSW) accepted for disposal to the body of the landfill shall comprise biodegradable municipal waste (BMW), measured on a calendar year basis or, in 2010 and 2013, part thereof.
- (ii) From 1 July 2013 to 30 June 2016 inclusive, a maximum of 30% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW, measured on a calendar year basis or, in 2013 and 2016, part thereof, and
- (iii) From 1 July 2016, a maximum of 15% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW, measured on a calendar year basis or, in 2016, part thereof.
- 8.4.2 Two or more licensed landfills may seek the agreement of the Agency that collectively they will arrange to comply with Condition 8.4.1. Such agreement may be sought by review of the landfill licence for any facility seeking an increase in the limits set out in Condition 8.4.1, and by technical amendment of any licence for a facility seeking a decrease. Such agreement will be contingent on the net combined acceptance of biodegradable municipal waste at the participating facilities remaining unchanged.
- 8.5 Determination of biodegradable municipal waste content of municipal waste
- 8.5.1 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 8.5.4 shall not be considered BMW.
- 8.5.2 Bio-stabilised residual wastes meeting the requirements of
- Condition 8.5.4, or

- an alternative protocol as may be agreed by the Agency based on biological treatment process parameters (e.g. validated residence time and temperature parameters at the treatment facility), received at the landfill facility may be included in the determination of MSW quantities accepted at the facility for the purposes of Condition 8.4.1.
- 8.5.3 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.
- 8.5.4 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 is <math><10\text{mg O}_2/\text{g DM}</math> until 1 January 2016 and <math><7\text{mg O}_2/\text{g DM}</math> thereafter.
- 8.5.5 Bio-stabilised residual wastes shall be monitored in accordance with *Schedule C.4: Waste Monitoring*, of this licence.
- 8.5.6 Waste that was accepted to the body of the landfill as stabilised but subsequently is found not to meet the stabilisation standard set out in Condition 8.5.4 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 8.4.1.
- 8.5.7 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with Condition 8.4.1, which shall be available for inspection by Agency personnel.
- 8.6 Inert waste used at the landfill for construction/engineering purposes shall comply with the standards established in the EU Decision (2003/33/EC).
- 8.7 With the exception of use of recovered fuels as may be approved for this site by the Agency, no waste shall be burnt at the facility.
- 8.8 Without prejudice to the waste activities specifically authorised by this licence, no waste may be placed into any part of the facility without the prior agreement of the Agency.
- 8.9 Waste sent off-site for recovery or disposal shall be transported only by an authorised waste contractor. The waste shall be transported from the site of the activity to the site of recovery/disposal only in a manner that will not adversely affect the environment and in accordance with the appropriate National and European legislation and protocols.
- 8.10 The licensee shall ensure that, in advance of transfer to another person, waste shall be classified, packaged and labelled in accordance with National, European and any other standards which are in force in relation to such labelling.
- 8.11 The loading and unloading of materials shall be carried out in designated areas protected against spillage and leachate run-off.
- 8.12 Waste shall be stored in designated areas, protected as may be appropriate against spillage and leachate run-off. The waste shall be clearly labelled and appropriately segregated.
- 8.13 No waste classified as green list waste in accordance with the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended) shall be consigned for recovery without the agreement of the Agency.
- 8.14 Waste for disposal/recovery off-site shall be analysed in accordance with *Schedule C: Control & Monitoring*, of this licence.
- 8.15 Unless approved in writing, in advance, by the Agency the licensee is prohibited from mixing a hazardous waste of one category with a hazardous waste of another category or with any other non-hazardous waste.
- 8.16 The licensee shall neither import waste into the State nor export waste out of the State except in accordance with the relevant provisions of Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14th June 2006 on shipments of waste and associated national regulations.

Reason: *To provide for the appropriate handling of material and the protection of the environment.*

Condition 9. Accident Prevention and Emergency Response

- 9.1 The licensee shall ensure that a documented Accident Prevention Procedure is in place that addresses 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.
- 9.2 The licensee shall ensure that a documented Emergency Response Procedure is in place, that addresses any emergency situation which may originate on-site. This procedure shall include provision for minimising the effects of any emergency on the environment. This procedure shall be reviewed annually and updated as necessary.
- 9.3 Incidents
- 9.3.1 In the event of an incident the licensee shall immediately:
- (i) carry out an investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
 - (ii) isolate the source of any such emission;
 - (iii) evaluate the environmental pollution, if any, caused by the incident;
 - (iv) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
 - (v) identify the date, time and place of the incident;
 - (vi) notify the Agency and other relevant authorities.
- 9.3.2 The licensee shall provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency, to:
- (i) identify and put in place measures to avoid recurrence of the incident; and
 - (ii) identify and put in place any other appropriate remedial actions.

Reason: *To provide for the protection of the environment.*

Condition 10. Closure, Restoration and Aftercare Management

- 10.1 Following termination, or planned cessation for a period greater than six months, of use or involvement of all or part of the site in the licensed activity, the licensee shall, to the satisfaction of the Agency, decommission, render safe or remove for disposal/recovery any soil, subsoil, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.
- 10.2 The licensee shall restore the facility on a phased basis. Unless otherwise agreed, filled cells shall be permanently capped within 24 months of the cells having been filled to the required level.
- 10.3 Finished Levels/Profile
- 10.3.1 Landscaping of the facility shall be as described in the application documentation **unless otherwise agreed with the Agency.**

- 10.3.2 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.
- 10.3.3 Final contours and landscaping should be such that the finished slopes of the facility are structurally stable, resistant to erosion, and protective of pollution control and monitoring infrastructure.
- 10.3.4 The final height of the facility shall not exceed 129.5mOD (Malin Head).
- 10.4 Final Capping
- 10.4.1 Unless otherwise agreed by the Agency, the final capping shall consist of the following:
- (i) Top soil (150–300 mm);
 - (ii) Subsoils, such that total thickness of top soil and subsoils is at least 1m. (Gas collection pipework above the gas barrier membrane (paragraph (iv) below) shall remain exposed for at least twenty-four months prior to covering);
 - (iii) Drainage layer of 0.5 m thickness having a minimum hydraulic conductivity of 1×10^{-4} m/s or a geosynthetic material that provides equivalent transmissivity;
 - (iv) Compacted mineral layer of a minimum 0.6 m thickness with a permeability of less than 1×10^{-9} m/s or a geosynthetic material (e.g. LLDPE) or similar that provides equivalent protection; and
 - (v) Gas collection layer of natural material (minimum 0.3 m) or a geosynthetic layer.
- 10.5 No material or object that is incompatible with the proposed restoration of the facility shall be present within 1m of the final soil surface levels.
- 10.6 All soils shall be stored to preserve the soil structure for future use.
- 10.7 Closure, Restoration & Aftercare Management Plan (CRAMP)
- 10.7.1 In advance of the acceptance for waste for disposal at the site **and in any event within six months of the date of grant of this licence**, the licensee shall prepare for agreement by the Agency, a fully detailed and costed plan for the closure, restoration and long-term aftercare of the site or part thereof. This plan shall have regard to the commitments given in the application documentation for licence register W0077-04 (as may be varied herein, or otherwise amended as notified in the AER and approved in writing by the Agency).
- 10.7.2 The plan shall be maintained and reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the prior agreement of the Agency.
- 10.8 The CRAMP shall include as a minimum, the following:
- 10.8.1 A scope statement for the plan.
 - 10.8.2 The criteria, including those specified in this licence, which define the successful closure and restoration of the facility or part thereof, and which ensure minimum impact to the environment.
 - 10.8.3 A programme to achieve the stated criteria.
 - 10.8.4 Where relevant, a test programme to demonstrate the successful implementation of the plan.
 - 10.8.5 Details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility.
 - 10.8.6 Details of the costings for the plan and the financial provisions to underwrite those costs.

- 10.9 A final validation report to include a certificate of completion for the CRAMP, 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 make provision for the proper closure of the activity ensuring protection of the environment.*

Condition 11. Notification, Records and Reports

- 11.1 The licensee shall notify the Agency, in writing, one month in advance of the intended date of commencement of acceptance of waste for **new** scheduled disposal/recovery activities at the facility (waste used in the facility construction excepted).
- 11.2 In advance of the development of any undisturbed area, the advice of the Heritage Section of the Department of the Environment, Heritage and Local Government shall be sought.
- 11.3 The licence shall notify the Agency by both telephone and facsimile, if available, to the Agency's headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:
- (i) any release of environmental significance to atmosphere from any potential emissions point including bypasses;
 - (ii) any emission that does not comply with the requirements of this licence;
 - (iii) any malfunction or breakdown of key control equipment or monitoring equipment set out in *Schedule C: Control and Monitoring*, of this licence which is likely to lead to loss of control of the abatement system; and
 - (iv) any incident with the potential for environmental contamination of surface water or groundwater, or posing an environment threat to air or land, or requiring an emergency response by the Local Authority.
- The licensee shall include as part of the notification, date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any emissions.
- 11.4 In the event of any incident which relates to discharges to sewer having taken place, the licensee shall notify the Local Authority and Water Services Authority as soon as practicable after such an incident.
- 11.5 In the case of any incident relating to discharges to water, the licensee shall notify the Local Authority and Water Services Authority and Inland Fisheries Ireland as soon as practicable after such an incident.
- 11.6 The licensee shall make a record of any incident. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident. The record shall include all corrective actions taken to manage the incident, minimise wastes generated and the effect on the environment, and avoid recurrence. The licensee shall, as soon as practicable following incident notification, submit to the Agency the incident record.
- 11.7 The licensee shall record all complaints of an environmental nature related to the operation of the activity. Each such record shall give details of the date and time of the complaint, the name of the complainant (if provided), and give details of the nature of the complaint. A record shall also be kept of the response made in the case of each complaint.
- 11.8 The licensee shall record all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility.
- 11.9 The licensee shall as a minimum keep the following documents at the site:
- (i) the licences relating to the facility;
 - (ii) the current EMS for the facility;
 - (iii) the previous year's AER for the facility;

- (iv) records of all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility;
- (v) relevant correspondence with the Agency;
- (vi) up-to-date site drawings/plans showing the location of key process and environmental infrastructure, including monitoring locations and emission points;
- (vii) up-to-date Standard Operational Procedures for all processes, plant and equipment necessary to give effect to this licence or otherwise to ensure that standard operation of such processes, plant or equipment does not result in unauthorised emissions to the environment;
- (viii) the current Landfill Environmental Management Plan (LEMP); and
- (ix) any elements of the licence application or EIS documentation referenced in this licence.

This documentation shall be available to the Agency for inspection at all reasonable times.

11.10 The licensee shall submit to the Agency, by the 31st March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in *Schedule G: Annual Environmental Report*, of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.

11.11 A full record, which shall be open to inspection by authorised persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall be maintained on a monthly basis and shall as a minimum contain details of the following:

- (i) the tonnages and EWC Code for the waste materials imported and/or sent off-site for disposal/recovery;
- (ii) the names of the agent and carrier of the waste, and their waste collection permit details, if required (to include issuing authority and vehicle registration number);
- (iii) details of the ultimate disposal/recovery destination facility for the waste and its appropriateness to accept the consigned waste stream, to include its permit/licence details and issuing authority, if required;
- (iv) written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site;
- (v) details of all waste consigned abroad for Recovery and classified as 'Green' in accordance with the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended). The rationale for the classification must form part of the record;
- (vi) details of any rejected consignments;
- (vii) details of any approved waste mixing;
- (viii) the results of any waste analyses required under *Schedule C: Control & Monitoring*, of this licence; and
- (ix) the tonnage and EWC Code for the waste materials recovered/disposed on-site.

11.12 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.
- 11.13 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).
- 11.14 The licensee shall, in writing, notify the Agency without delay of any waste received at the facility that does not meet the waste acceptance criteria.
- 11.15 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 8.4.1. **Unless otherwise advised by the Agency**, the licensee shall submit quarterly summary reports to the Agency within one week of the end of each calendar 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.
- 11.16 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 2.2.2.2 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.
- 11.17 A 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:-
- (i) the date and time during which spraying of insecticide is carried out;
 - (ii) contractor details;
 - (iii) contractor logs and site inspection reports;
 - (iv) details of the rodenticide(s) and insecticide(s) used;
 - (v) operator training details;
 - (vi) details of any infestations;
 - (vii) mode, frequency, location and quantity of application; and,
 - (viii) measures to contain sprays within the facility boundary.
- 11.18 The licensee shall submit reports in accordance with *Schedule E: Reporting* of this licence.
- 11.19 The licensee shall submit report(s) as required by the conditions of this licence to the **Agency's Regional Inspectorate in Castlebar**, or to such other Agency office as may be specified by the Agency.
- 11.20 All reports shall be certified accurate and representative by the facility manager or a nominated, suitably qualified and experienced deputy.

Reason: *To provide for the collection and reporting of adequate information on the activity.*

Condition 12. Financial Charges and Provisions

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of **€29,442** 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 2010. The first payment shall be a pro-rata amount for the period from the date of grant of this licence to the 31st day of December, and shall be paid to the Agency within one month from the date of grant of the licence. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Waste Management Acts 1996 to 2010, 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 Water Services Authority Charges

The licensee shall pay to the Water Services Authority such sum as may be determined from time to time, having regard to the variations in the cost of providing drainage and the variation in effluent reception and treatment costs. Payment to be made on demand.

12.3 Environmental Liabilities

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

12.3.2 The licensee shall arrange for the completion, by an independent and 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 10 for execution of the CRAMP. A report on this assessment shall be submitted to the Agency for agreement within **twelve months** of date of grant of this licence. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement. The results of the review shall be notified as part of the AER.

12.3.3 As part of the measures identified in Condition 12.3.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities associated with the operation (including closure, restoration and aftercare) of the facility identified in Condition 12.3.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.3.1.

12.3.4 The licensee shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Conditions 12.3.2 and 12.3.3 above.

- 12.3.5 Unless otherwise agreed, any revision to that part of the indemnity dealing with closure, restoration and aftercare liabilities 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

12.4 Cost of landfill of waste

In accordance with the provisions of Section 53A of the Waste Management Acts 1996 to 2010, the licensee shall ensure the costs involved in the setting up and operation of the facility, as well as the costs of closure and after-care (including cost of provision of financial security) for a period of at least 30 years (post closure) shall be covered by the price to be charged for the disposal of waste at the facility. The statement required under Section 53A(5) of said Acts is to be included as part of the AER.

12.5 Community Fund

The Licensee shall pay €1 (index linked) for every tonne of waste accepted for disposal in the landfill into a secure and dedicated-to-purpose community support and development fund. Within six months of the date of grant of this licence, the Licensee shall establish a community managed charitable trust (or equivalent) to manage and discharge this fund for the benefit of the social and physical environment of the local community.

Reason: To provide for adequate financing for monitoring and financial provisions for measures to protect the environment and to provide for the requirements of the Water Services Authority in accordance with Section 52 of the Waste Management Acts 1996 to 2010.

SCHEDULE A: Limitations

A.1 Waste Processes

The following waste related processes are authorised:

- Disposal of waste in a landfill**
- Use of compost & inert waste in landfill operation**
- Operation of civic amenity facility and associated storage of waste**
- Crushing, baling, repackaging processes**

No additions to these processes are permitted unless agreed in advance with the Agency.



A.2 Waste Acceptance

Waste Type	Maximum (tonnes per annum)
Disposal at landfill ^{note 1}	
• Municipal (household and commercial) waste ^{note 2}	35,000
• Construction and demolition waste	5,000
• Industrial solid waste ^{note 3}	4,000
• Treated sludge	1,000
Total disposal at landfill ^{note 4}	45,000
Collection at civic amenity facility	
• Non-hazardous waste	3,000
• Hazardous household, commercial and agricultural waste ^{note 5}	100
Total collection at civic amenity facility	3,100

Note 1: The individual limitation on waste streams accepted for disposal at the landfill may be varied with the agreement of the Agency subject to the overall total limit staying the same. Any proposals to accept other compatible non-hazardous waste types must be agreed in advance by the Agency.

Note 2: Excluding food waste from premises subject to the Waste Management (Food Waste) Regulations 2009.

Note 3: Excluding putrescible or biodegradable waste.

Note 4: This limit does not apply to construction and demolition wastes imported to the site for use in the construction of the facility.

Note 5: Subject to agreed and detailed waste acceptance procedures, suitable storage receptacles and capacity.



A.3 Total Permitted Landfill Capacity

Total quantity of waste permitted to be placed at the landfill facility in cell 4	250,000 m³
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SCHEDULE B: Emission Limits

B.1 Emissions to Air

B.1.1 Emission Limits Values for Landfill Gas Plant:

Emission Point Reference No.: Flare stacks: A1-1, A1-2
 Gas utilisation plant: A1-3

Minimum Discharge Height: 5m

Parameter	Flare (enclosed) Emission Limit Value ^{Note 1}	Utilisation Plant Emission Limit Value ^{Note 1}
Nitrogen oxides (NO _x)	150 mg/m ³	500 mg/m ³
Particulates	-	130 mg/m ³
CO	50 mg/m ³	650 mg/m ³
Total Organic Carbon (TOC)	10 mg/m ³	-

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

B.1.4 Dust Deposition Limits:

Location of dust monitoring: D1-D6
 (locations to be illustrated per condition 6.25 and subject to Agency agreement and subsequently as may be otherwise agreed/directed)

Level (mg/m ² /day) ^{Note 1}
350

Note 1: 30 day composite sample with the results expressed as mg/m² day.



B.2 Emissions to Surface Water

Emission Point Reference No.: SW1 and SW2

Name of Receiving Waters: Corranure Stream and Lismagratty Stream respectively

Location: SW1: Southwestern corner of facility
 SW2: Northeastern corner of facility

Parameter	Emission Limit Value (mg/l)
Suspended solids	35
Total ammonia as N	0.14



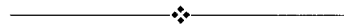
B.3 Emissions to Sewer

Emission Point Reference No: SE1

Location: To be illustrated on a drawing per condition 6.25 and subject to Agency agreement and subsequently as may be otherwise agreed/directed

Volume to be emitted: Maximum in any one day: 221 m³
 Mean in any one day: 170 m³
 Maximum rate per hour: 20 m³

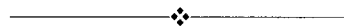
Paramater	Emission limit value			
	Untreated leachate		Treated leachate	
pH	7.85			
	Daily mean concentration (mg/l)	Daily mean loading (kg/day)	Daily mean concentration (mg/l)	Daily mean loading (kg/day)
BOD	3000	510	240	41
COD	3078	524	1000	170
Suspended Solids	295	51	280	48
Ammonia as NH ₃ -N	493	84	45	8
Ortho-phosphorous as P	-	-	15	3



B.4 Noise Emissions

Daytime dB(A) L _{Aeq} (30 minutes)	Night-time dB(A) L _{Aeq} (30 minutes)
55 ^{Note 1}	45 ^{Note 1}

Note 1: There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity of any noise-sensitive location.



SCHEDULE C: Control & Monitoring

C.1.1 Control of Emissions to Air

Control of Landfill Gas Management System

Location	Parameter	Frequency
All wellheads and extraction pipework	Vacuum pressure	Weekly
	Gas flow rate	Weekly
	Methane	Weekly
	Oxygen	Weekly
	Temperature	Weekly

Emission Point Reference No.: Flare Stacks (A1-1, A1-2)

Generation Plant (A1-3)

Description of Treatment: Gas Extraction & Combustion

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Continuous burn	Continuous with alarm/call-out	Flame detector or equivalent approved Pumps/engines
Extraction	Continuous with alarm/call-out	Pressure gauge or equivalent approved Pumps/engines

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.



C.1.2. Monitoring of Emissions to Air

Emission Point Reference No.: Flare stacks (A1-1, A1-2)
Gas utilisation plant (A1-3)

Parameter	Flare (enclosed) Monitoring Frequency	Utilisation Plant Monitoring Frequency	Analysis Method^{Note 1} /Technique
Inlet			
Methane (CH ₄) % v/v	Continuous	Weekly	Infrared analyser or equivalent approved
Carbon dioxide (CO ₂) % v/v	Continuous	Weekly	Infrared analyser or equivalent approved
Oxygen (O ₂) % v/v	Continuous	Weekly	Electrochemical or equivalent approved
Total sulphur	Annually	Annually	Ion chromatography
Process Parameters			
Combustion temperature	Continuous	Quarterly	Temperature probe datalogger To be agreed.
Residence time	Quarterly	Quarterly	
Outlet			
Volumetric Flow Rate	Continuous	Continuous	Standard Method
Carbon monoxide (CO)	Continuous	Continuous	Flue gas analyser datalogger or equivalent approved
Nitrogen oxides (NO _x)	Biannually	Biannually	Flue gas analyser or equivalent approved
Sulphur dioxide (SO ₂)	Biannually	Biannually	Flue gas analyser or equivalent approved
TOC	Biannually	-	Flame ionisation
Particulates	-	Annually	Isokinetic Gravimetric or equivalent approved

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



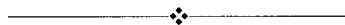
C1.3 Monitoring of Landfill Gas Emissions

Locations: Perimeter landfill gas boreholes (GW01, GW04, GW05, G01-05, G07-15, per drawing number DG0055/01 submitted with the application, **subject to its update in accordance with condition 6.25, plus at least three further locations: G16 and G17 on the northern and western perimeters of cell 4, and G18 on the southern perimeter of cell 0, at locations to be agreed with the Agency**)^{Note 1}
 and
 At least one monitoring point per cell (to be agreed)
 and
 Other selected locations as may be specified

Parameter	Monitoring Frequency			Analysis Method/Technique ^{Note 2}
	Boreholes and cells	Facility office	Sewer discharge	
Methane (CH₄)	Monthly	Continuous	Continuous	Infrared analyser/FID
Carbon dioxide (CO₂)	Monthly	Continuous		Infrared
Oxygen (O₂)	Monthly	Continuous	Continuous	Electrochemical cell
Atmospheric pressure & trend	Monthly	Continuous		Standard method
Temperature	Monthly	Continuous		Standard method

Note 1: All perimeter monitoring boreholes must be installed to the standards specified in the Agency Guidance on Landfill Monitoring.

Note 2: Or other method agreed.



C.2.1. Control of Emissions to Water

Emission Control Location: SW1 and SW2

Description of Treatment: Grit trap (SW1 and SW2) and oil/water separation (at SW1, at SW2 as appropriate)

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Residence time & flow restriction	Flow rate, depth	Flow meter, overflow alarm, emergency storage

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

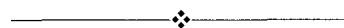


C.2.2. Monitoring of Emissions to Water

Emission Points Reference Nos.: SW1 and SW2

PARAMETER ^{Note 1}	MONITORING FREQUENCY ^{Note 5}
Visual Inspection/Odour ^{Note 2}	Daily
Dissolved Oxygen	Daily
Electrical Conductivity	Daily
Total ammonia (as N)	Weekly
Total nitrogen	Weekly
Chloride	Weekly
pH	Weekly
Total Suspended Solids	Weekly
Temperature	Weekly
COD	Weekly
BOD	Monthly
Total P/orthophosphate	Monthly
Metals / non metals ^{Note 3}	Annually
List I/II organic substances (Screen) ^{Note 4}	Annually
Mercury	Annually
Sulphate (SO ₄)	Annually
Nitrate	Annually
Faecal Coliforms	Annually
Total Coliforms	Annually

- 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 and the full suite of parameters shown tested.
- 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:** The licensee shall install a composite sampler within three months of date of grant of this licence. All samples thereafter shall be collected on a 24-hour flow proportional composite sampling basis.



C.3. Leachate Monitoring

Locations: Leachate holding tank(s)/lagoon(s), leachate sumps, leachate monitoring points in the cells, sewer discharge (SE1).

PARAMETER ^{Note 1}	LEACHATE ^{Note 2, 5} Monitoring Frequency
Discharge to sewer	
Flow	Continuous – flow meter and recorder
Temperature	Weekly
pH	Weekly
COD	Weekly composite
BOD	Weekly composite
Suspended solids	Weekly composite
Ammonia as N	Weekly composite
Orthophosphorous	Annually
Other locations	
Visual inspection/odour	Daily
Leachate level	Continuous
pH	Annually
COD	Quarterly
BOD	Quarterly
Chloride	Annually
Ammonia (as N)	Annually
Electrical conductivity	Annually
Metals/non-metals ^{Note 3}	Annually
Cyanide (total)	Annually
Fluoride	Annually
List I/II organic substances ^{Note 4}	Annually
Mercury	Annually
Sulphate	Annually
Total P/orthophosphate	Annually
Total oxidised nitrogen	Annually

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

Note 2: Visual inspection and leachate levels to be monitored at all leachate monitoring points in the cells, collection sumps and holding tank(s)/lagoon(s). Leachate composition to be monitored at the leachate holding tank. **Leachate discharge to sewer to be monitored at emission point SE1.**

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.

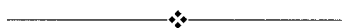
Note 4: Samples screened for the presence of organic compounds using gas chromatography/mass spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental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

Note 5: The licensee shall install a composite sampler on the sewer discharge within three months of the date of grant of this licence. All samples thereafter shall be collected on a 24 hour flow proportional composite sampling basis.

C.4 Waste Monitoring

Waste class	Frequency	Parameter	Method
Bio-stabilised residual waste	Every 500 tonnes from each source ^{note 1}	Respiration activity after 4 days	To be agreed by the Agency

Note 1: Frequency can be reduced if an alternative protocol is agreed by the Agency under Condition 8.5.2.



C.5 Noise Monitoring

Location of noise monitoring:

NSL1-NSL7, B1-B4
(locations to be illustrated per condition 6.25 and subject to Agency agreement and subsequently as may be otherwise agreed/directed)

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

Note 1: International Standards Organisation, ISO 1996, Acoustics - Description and Measurement of Environmental Noise, Parts 1, 2 and 3.



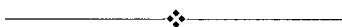
C.6 Ambient Monitoring

Location of dust monitoring:

D1-D6

Location of ambient odour monitoring: Per odour management plan or as may be otherwise directed by the Agency

Parameter	Frequency	Analysis Method/Technique
Dust	Monthly	Bergerhoff
Odour	Monthly	As agreed



C.7 Groundwater Monitoring

- Location:**
- Groundwater wells (GW01-GW09)
 - Private wells (PW02, PW05BT, PW08, PW09, PW10, PW11, PW13, PW15, PW16)
 - Discharge from any groundwater interceptor drain or drainage layer beneath the main liner system prior to entering the surface water attenuation system.

Groundwater and private wells as shown on drawing number DG0055/01 submitted with the application, subject to its update in accordance with condition 6.25, or as may be otherwise agreed or directed.

PARAMETER ^{Note 1}	GROUNDWATER Monitoring Frequency
Visual inspection/odour ^{Note 2}	Monthly
Groundwater level (wells)	Monthly
Flow (pumped water from interceptor)	Continuous
Dissolved oxygen	Daily (Interceptor) Monthly otherwise
Electrical conductivity	Daily (Interceptor) Monthly otherwise
Ammonia (as N)	Monthly
Chloride	Monthly
pH	Monthly
Sulphate (SO ₄)	Monthly
TOC	Monthly
Metals/non-metals ^{Note 3}	Annually
List I/II organic substances (Screen) ^{Note 4}	Annually
Mercury	Annually
Nitrate	Annually
Total P/orthophosphate	Annually
Cyanide (total)	Annually
Fluoride	Annually
Total alkalinity	Annually
Residue on evaporation	Annually
Faecal coliforms	Annually
Total coliforms	Annually

Note 1: Where appropriate all the analyses shall be carried out by a competent laboratory using standard and internationally accepted procedures.

Note 2: Where there is evident gross contamination, additional samples should be analysed and the full suite of parameters shown tested. **Where there is evident gross contamination in private wells, the HSE shall be notified with follow up of analytical results from the full suite of parameters. The licensee shall provide all practicable assistance and information to the HSE in addressing any contamination and investigating its source and cause.**

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 (US EPA method 525 or equivalent), and pesticides (US EPA method 608 or equivalent).

C.8 Receiving Water Monitoring

Location: B1 and S3 on Lismagratty Stream; and
A1, S4 and S5 on Corranure Stream,
as illustrated on drawing number **DG0055/01** submitted with the
application, **or at alternative locations as may be agreed or directed**

Parameter ^{Note 1}	Monitoring frequency ^{Note 5}
Visual Inspection/Odour ^{Note 2}	Weekly
Dissolved Oxygen	Quarterly
Electrical Conductivity	Quarterly
Total ammonia (as N)	Quarterly
Total nitrogen	Quarterly
Chloride	Quarterly
pH	Quarterly
Total Suspended Solids	Quarterly
Temperature	Quarterly
COD	Quarterly
BOD	Quarterly
Metals / non-metals ^{Note 3}	Annually
List I/II organic substances (screen) ^{Note 4}	Annually
Mercury	Annually
Sulphate (SO ₄)	Annually
Nitrate	Annually
Total P/orthophosphate	Annually
Faecal Coliforms	Annually
Total Coliforms	Annually
Biological Quality (Q) Rating/Q index ^{Note 7}	Annually ^{Note 6}
Sediment assessment ^{Note 7,8}	Annually

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 and the full suite of parameters shown tested.

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: The licensee shall have available a composite sampler within three months of date of grant of this licence which shall be used at relevant sampling points.

Note 6: Monitoring period – June to September.

Note 7: At the following monitoring points referenced on drawing number **DG0055/01** submitted with the application, or at alternative locations as may be agreed or directed: B1 to B5, A1 to A5, unless otherwise agreed. Method/technique to be agreed with the Agency.

Note 8: Sediment monitoring for the following parameters: hydrocarbons, PCBs, phenol and heavy metals – at the following monitoring points referenced on drawing number **DG0055/01** submitted with the application, or at alternative locations as may be agreed or directed: B1 to B5, A1 to A5, unless otherwise agreed. Method/technique to be agreed with the Agency.



C.9 Meteorological Monitoring

Location: At the facility.
 Evaporation, evapotranspiration and humidity data may be obtained from the Clones weather station.

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation volume	Daily	Standard Method
Evaporation	Daily	Standard Method
Evapotranspiration ^{Note 1}	Daily	Standard Method
Atmospheric humidity (14.00h CET)	Daily	Standard Method
Temperature (min./max.)	Daily	Standard Method
Wind direction	Daily	Standard Method
Wind Force ^{Note 1}	Daily	Standard Method
Atmospheric Pressure ^{Note 1}	Daily	Standard Method

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



SCHEDULE D 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 E Reporting

Completed reports shall be submitted to:

The Environmental Protection Agency
Office of Environmental Enforcement
Regional Inspectorate
Moore's Road
Castlebar

Co. Mayo or Any other address as may be specified by the Agency

Reports are required to be forwarded as required in the licence and as may be set out below:

Report	Reporting Frequency ^{Note 1}	Report Submission Date
Annual Environment Report (AER)	Annually	By 31st March of each year.
Record of incidents	As they occur	Within five days of the incident.
Specified Engineering Works reports	As they arise	In advance of the works commencing.
Drawing with monitoring locations	Updates as necessary	Within three months of date of grant of licence and any agreed amendments thereafter.
Schedule of objectives & targets	Annually	Within three months of date of grant of licence.
Phased construction plan & updates	-	In advance of commencement of development & any updates thereafter.
Leachate disposal agreement	-	In advance of commencement of waste disposal.
Feasibility assessment on the utilisation of landfill gas as an energy resource	-	Within six months of the date of grant of licence.
Odour Management Plan Updates/Amendments	Annually	Submit as part of the AER

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

SCHEDULE F Annual Environmental Report

Annual Environmental Report Content ^{Note 1}

Emissions from the facility (to air, surface water, sewer, ground; incl. leachate and noise).

Waste Management Records for the year to include:

- Quantity of waste accepted at the facility;
- Quantity of waste disposed of in the landfill (for year and in total);
- Quantity of recovered waste used in the development/operation of the landfill (for year and in total)
- Quantity of waste removed off-site for recovery and disposal;
- Statement on the achievement of the waste acceptance and pre-treatment obligations

Total consented landfill void (m³) (based on design/licence limit/other restrictions).

Total consented landfill void (m³) developed.

Total consented landfill void (m³) used.

Total consented residual landfill void (m³).

Average compaction/fill densities achieved.

Topographical Survey (including comparison with previous year's survey results)

Updates/Amendments to Odour Management Plan (OMP).

Updates to Landfill Environmental Management Plan (LEMP).

Waste Recovery Report.

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

Complaints summary.

Reported incidents summary.

Schedule of environmental objectives and targets.

Environmental management programme – report for previous year.

Environmental management programme – proposal for current year.

Pollutant release and transfer register – report for previous year.

Pollutant release and transfer register – proposal for current year.

Waste analysis (stabilisation, sludges, etc).

Metcorological data summary.

Ambient monitoring summary (surface water, groundwater, dust, noise, odour).

Current monitoring location reference drawing.

Tank and pipeline testing and inspection report.

Energy efficiency audit report summary.

Resource consumption summary.

Report on progress made and proposals being developed to minimise generation of leachate for disposal.

Development/Infrastructural works summary (completed in previous year or prepared for current year).

Report on management and staffing structure of the facility.

Report on the programme for public information.

Reports on financial provision made under this licence.

Review of environmental liabilities.

Any amendments to the CRAMP.

Statement on the costs of landfill (including Landfill Levy).

Results of the stability assessment of the side slopes of the facility

Any other items specified by the Agency.

Note 1: Content may be revised subject to the agreement of the Agency.

Sign off for Proposed Determinations/Decisions

Signed on behalf of the said Agency _____
 On the xx day of xxxxx, 200X xxxxxxxxxxxx **Authorised Person**

