Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Headquarters
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Ireland

PROPOSED DECISION FOR A WASTE LICENCE REVIEW

LANDFILL FOR NON-HAZARDOUS WASTE

Waste Licence Register Number:	**W0029-04**
Licensee:	**Offaly County Council**
Location of Facility:	**Derryclure Landfill, Derryclure and Killeigh, Tullamore, County Offaly.**

INTRODUCTION

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

This licence is for the continued operation of a non-hazardous waste landfill which will accept up to a maximum of 100,000 tonnes per annum of waste for disposal, an increase from the previous maximum of 40,000 tonnes. The licence also allows for the composting of biodegradable waste and the operation of a Civic Waste Facility.

This review of the licence was sought to accommodate the increased intake of waste for disposal from 40,000 tonnes per annum to 100,000 tonnes per annum and to facilitate longer opening hours to accommodate the acceptance and handling of this increased intake. There is a consequential need to alter aspects of the existing licence to cater for this increased level of waste handling at the landfill facility.

Classes 1, 4, 5, 7, 11, and 13 of the Third Schedule and Classes 2, 3, 4, 9 and 13 of the Fourth Schedule were applied for in the review application. Class 5 of the Third Schedule is the Principal Activity, i.e., specifically engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment. The Classes applied for are in line with those already licensed under the existing licence, Reg. No. W0029-03, with one addition to accommodate the flaring/utilisation of landfill gas, i.e., Class 9 of the Fourth Schedule.

An earlier review of the licence in 2009 ensures that the facility operates in compliance with relevant requirements of the Landfill Directive including the need to limit the acceptance of biodegradable municipal waste and accept only treated waste.

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

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

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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 this 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 waste licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
BAT	Best Available Techniques as defined in Article 2(11) of Council Directive 96/61/EC concerning integrated pollution prevention and control.
Bi-annually	All or part of a period of six consecutive months
Biennially	Once every two years
Biodegradable waste	Waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste and paper and cardboard.
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).
COD	Chemical Oxygen Demand.
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.
Commercial waste	As defined in Section 5 (1) of the Act.
Condition	A condition of this licence.

Construction and Demolition 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 which can contain spillages and prevent them from entering drains or 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 by the Agency.
Daily Cover	Is the term used to describe material spread (about 150mm if soil cover is used) over deposited waste at the end of each day. Synthetic materials may also be used. Its objective is to minimise odour, the amount of litter generated and to control flies and access to the waste by birds and vermin. Where soils are used for daily cover, it is recommended that they be removed at the start of the day and subsequently reused as much as possible.
Day	Any 24 hour period.
Daytime	0800 hrs to 2200 hrs.
dB(A)	Decibels (A weighted)
DO	Dissolved oxygen.
Documentation	Any report, record, result, 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.
Emission Limits	Those limits, including concentration limits and deposition levels established in *Schedule B: Emission Limits,* of this licence.
EMP	Environmental Management Programme.
Environmental Damage	As defined in Directive 2004/35/EC.
EPA	Environmental Protection Agency.
EPA Working Day	Refers to the following hours: 0900 hrs to 1730 hrs Monday to Friday inclusive.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 94/3/EC and any subsequent amendment published in the Official Journal of the European Community.
Facility	Any site or premises used for the purpose of the recovery or disposal of waste.
Fortnightly	A minimum of 24 times per year, at approximately two week intervals.
GC/MS	Gas chromatography/mass spectroscopy.
Green waste	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.

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.
Household waste	As defined in Section 5 (1) of the Act.
Incident	The following shall constitute as incident for the purposes of this licence: 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	Inert waste as defined in the Waste Management (Licensing) (Amendment) Regulations, 2002 (S.I. No. 336 of 2002).
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 300mm if soil is used) over deposited waste for a period of time prior to restoration or prior to further disposal of waste.
Landfill	Refers to the area of the facility where the waste is disposed of by placement on the ground or on other waste.
Landfill Directive	Council Directive 199/31/EC.
Landfill footprint	The area of the facility where waste is to be deposited.
Landfill Gas	Gases generated from the landfilled waste.
LEL (Lower Explosive Limit)	The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.
LEMP	Landfill Environmental Management Plan
L_{eq}	Equivalent continuous sound level.
Licence	A waste licence issued in accordance with the Act.
Licensee	**Offaly County Council, Aras an Chontae, Charleville Road, Tullamore,**

	County Offaly.
List I/II Organics	Substances classified pursuant to EC Directives 2006/11/EC and 80/68/EEC.
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter. Any waste tankered to the facility.
LLDPE	Linear low density polyethylene
Local Authority	**Offaly County Council**
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Monthly	A minimum of twelve times per year, at approximately monthly intervals.
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 facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
OMP	Odour Management Plan
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).
PRTR	Pollution Release and Transfer Register
Quarterly	At approximately three – monthly intervals. All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
Recyclable Materials	Those waste types, such as cardboard, batteries, gas cylinders, etc. which may be recycled.
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, samples shall include measurements by electronic instruments.
Sanitary effluent	Wastewater from facility toilet, washroom and canteen facilities.
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 *Schedule B: Emission Limits,* of this licence.
Specified Engineering Works	Those engineering works listed in *Schedule G: Specified Engineering Works,* 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
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 specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
Water Services Authority	**Offaly County Council**
Wastewater	Water that has been used, as for washing, flushing or in a manufacturing process.
Weekly	During all weeks of plat operation and, in the case of emissions, when emissions are taking place; with at least one measurement in any one week.
White Goods	Refrigerators, cookers, ovens and other similar appliances.
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

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.

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 report of its inspector.

Part I: 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)(a) of the said Acts to grant this waste licence to **Offaly County Council, Aras an Chontae, Charleville Road, Tullamore, County Offaly**, to carry on the waste activities listed below at **Derryclure Landfill, Derryclure and Killeigh, Tullamore, County Offaly** subject to conditions, with the reasons therefore and the associated schedules attached thereto set out in the licence. For the purpose of Article 48 of the Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004) 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 (including evaporation, drying and calcinations**
Class 11	**Blending or mixture 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 transformation processes)**
Class 3	**Recycling or reclamation of metals and metal compounds**
Class 4	**Recycling or reclamation of other inorganic materials**
Class 9	**Use of any waste principally as a fuel or other means to generate energy**
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 Conditions

Condition 1. Scope

1.1 Waste activities at the 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 the Drawing entitled **"Site Layout Plan"** which was received by the Agency on 14th November 2008. 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 the 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 Only the wastes listed in *Schedule A: Waste Acceptance,* of this licence, may be disposed of or recovered at the facility subject to the maximum quantities and other constraints specified therein.

1.8 Waste Acceptance Hours and Hours of Operation

1.8.1 Landfill

1.8.1.1 Waste may only be accepted at the facility for disposal at the landfill between the hours of 07.30 a.m. to 7.00 p.m. Monday to Friday inclusive and 8.30 a.m. to 5.30 p.m. on Saturdays.

1.8.1.2 The landfill at the facility may only be operated during the hours of 7.00 a.m. to 7.30 p.m. Monday to Friday inclusive and 8.00 a.m. to 6.00 p.m. on Saturdays.

1.8.1.3 Waste shall not be accepted at the landfill on Sundays or Bank Holidays.

1.8.2 Civic Waste Facility

Waste shall only be accepted at the Civic Waste Facility between the hours of 8.00 a.m. to 6.00 p.m. Monday to Friday inclusive and 8.30 a.m. to 5.30 p.m. on Saturdays.

1.9 Where the Agency considers that a non-compliance with any condition of this licence has occurred, it may serve a notice on the licensee specifying:

1.9.1 That only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice.

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

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

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

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

1.11 This licence is being granted in substitution for the waste licence granted to the licensee on **24th March 2010** and bearing Waste Licence Register W0029-03. The previous waste licence (Register No: W0029-03) 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 suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced deputy shall be present on the facility at all times during its operation or as otherwise requested by the Agency.

2.1.2 The Civic Waste Facility shall be supervised by an appropriately qualified and competent person at all times.

2.1.3 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience as required and shall be aware of the requirements of this licence. In addition, the facility manager and his/her deputy shall successfully complete a FAS waste management training programme or equivalent agreed by the Agency.

2.2 Environmental Management System (EMS)

2.2.1 The licensee shall maintain an 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 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 reuse (recovery) of waste in landfill engineering operations. The objectives should be specific and the targets measurable. The schedule shall address a five-year period as a minimum. The schedule shall include a time-scale for achieving the objectives and targets and shall comply with any other written guidance issued by the Agency. The schedule shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

2.2.2.3 Environmental Management Plan (EMP)

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

a) Methods by which the objectives and targets will be achieved and the identification of those responsible for achieving those objectives and targets; and

b) Any other items required by written guidance issued by the Agency.

2.2.2.4 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 establish 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 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 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.

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

Condition 3 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. Infrastructure specified in the application that relates to the environmental performance of the facility and is not specified in the licence, shall be installed in accordance with the schedule submitted in the application.

3.2 The landfill footprint (maximum lateral extent of landfilling) shall be as indicated in Drawing Reference **CE07-286-01_003 (*Site Layout Plan*)** of the application.

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 Three months in advance of the commencement of **further** site development, the licensee shall submit to the Agency for its agreement 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 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, future 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 15 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 10.6) of cells or sub-cells within 48 months of the commencement of waste disposal in that cell/sub-cell.

3.5 Specified Engineering Works

3.5.1 The licensee shall submit proposals for all Specified Engineering Works, as defined in *Schedule G: Specified Engineering Works*, of this licence, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works, **unless otherwise agreed with the Agency**. 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(s) 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 all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall include the following information:-

a) A description of the works;

b) As-built drawings of the works;

c) Records and results of all tests carried out (including failures);

d) Drawings and sections showing the location of all samples and tests carried out;

e) Daily record sheets/diary;

f) Name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;

g) Name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;

h) Records of any problems and the remedial works carried out to resolve those problems; and

i) Any other information requested in writing by the Agency.

3.6 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 Facility Notice Board

3.7.1 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.

3.7.2 The board shall clearly show:-

a) The name and telephone number of the facility;

b) The normal hours of opening;

c) The name of the licence holder;

d) An emergency out of hours contact telephone number;

e) The licence reference number; and

f) Where environmental information relating to the facility can be obtained.

3.7.3 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.

3.8 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.

3.9 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.

3.10 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.

3.11 All pumps 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.

3.12 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.

3.13 Facility Security

3.13.1 The existing security and stockproof fencing and gates shall be maintained at the facility. The licensee shall maintain security and stockproof fencing around the boundary of the Civic Waste Facility. The base of the fencing shall be set in the ground. Subject to the implementation of the restoration and aftercare plan and to the agreement of the Agency, the requirement for site security may be removed.

3.13.2 Gates shall be locked shut when the facility is unsupervised.

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

a) A temporary repair shall be made by the end of the working day; and

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

3.14 Facility Roads and Site Surfaces

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

3.14.2 The facility entrance area, the access road to the Civic Waste Facility, the Civic Waste Facility itself and the Composting Area shall be paved to ensure an impervious surface is maintained.

3.15 Facility Office

3.15.1 The licensee shall maintain an office at the facility. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.

3.15.2 The licensee shall maintain a working telephone and a method for electronic transfer of information at the facility.

3.16 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.

3.17 Waste Inspection and Quarantine Areas

3.17.1 A Waste Inspection Area and a Waste Quarantine Area shall be maintained at the facility.

3.17.2 These areas shall be 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.

3.17.3 Drainage from these areas shall be directed to a collection sump or the leachate collection system.

3.18 Weighbridge and Wheel Cleaner

3.18.1 The licensee shall maintain a weighbridge and wheel cleaners at the facility.

3.18.2 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.

3.19 Waste Water Treatment System

The licensee shall maintain a Wastewater Treatment System at the facility for the treatment of wastewater arising on-site. The licensee shall ensure that any septic tanks and percolation areas being used at the facility are operated in accordance with the Agency's **Code of Practice: *Wastewater Treatment and Disposal Systems Serving Single Houses* (2009)**. A report on its operation and design shall be submitted as part of the AER.

3.20 Tank, Container and Drum Storage Areas

3.20.1 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).

3.20.2 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.

3.20.3 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.

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

3.20.5 All tanks, containers and drums shall be labelled to clearly indicate their contents.

3.21 Landfill Lining

3.21.1 The landfill liner shall comprise:-

a) A composite liner consisting of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to $1x10^{-9}$ $m^3/m^2/s$, (or equivalent to be agreed by the Agency) overlain by a 2mm thick high density polyethylene (HDPE) layer;

b) A geotextile protection layer placed over the HDPE layer (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);

c) A 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of 1×10^{-3} $m^3/m^2/s$, of pre-washed, uncrushed, granular, rounded stone (16 - 32mm grain size) incorporating leachate collection drains;

d) The lining system on the base of the facility shall be laid to a minimum slope of 1:50;

e) All side walls (with the exception of those side walls located on the interface between the new cells and the existing unlined waste disposal areas) shall be designed and constructed to achieve an equivalent protection; and

f) For those side walls located on the interface between the new cells and the existing unlined waste disposal areas, the following shall be provided:

i) A gas collection layer of natural material (minimum thickness of 0.3m) or a geosynthetic layer overlain by a 2mm thick LLDPE layer which should be tied into the HDPE layer on the base of the lined cell; and

ii) A geocomposite leachate collection layer placed over the LLDPE layer.

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

3.21.3 Unless otherwise agreed by the Agency, the layout of the lined cells shall be as shown on Drawing No. **CE07-286-01_003 (*'Site Layout Plan'*)** of the application.

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

3.22 Leachate Management Infrastructure

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

(i) Six leachate abstraction wells located within the waste body. These wells shall be fitted with automatic pumps to allow for the pumping of leachate to the storage structure referred to in Condition 3.22.2 at regular intervals; and

(ii) A leachate interceptor drain around the existing waste body. The leachate interceptor drain shall be designed so as to prevent the leachate collected in the interceptor drain from discharging to surfacewater or into the groundwater control drainage layer.

3.22.2 The licensee shall maintain a leachate storage structure. Any leachate storage lagoons at the facility shall meet the lining specifications given in Condition 3.21.

3.22.3 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.

3.22.4 Leachate collection/abstraction from lined cells shall be by means of a side slope riser.

3.22.5 The **licensee shall, within two years of the date of grant of this licence, 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.**

3.23 Landfill Gas Management

3.23.1 The licensee shall maintain infrastructure for the active collection and flaring of landfill gas at the facility. This shall include infrastructure for the collection and flaring of landfill gas arising from waste deposits in unlined parts of the facility. The flare shall be of an enclosed type design. Flare unit efficiency shall be tested once it is installed, and once every three years thereafter.

3.23.2 The active landfill gas management infrastructure shall consist of horizontal and vertical gas collection. The horizontal systems shall be installed at lifts of no greater than 5 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.

3.23.3 Active landfill gas management infrastructure as appropriate, to include gas flare(s) and interconnecting pipework, shall be provided and ready for operation prior to the commencement of disposal of gas forming wastes in the landfill. Such infrastructure shall be as described in the application documentation, or as may be varied by a licence condition shall be provided in advance to match the phased filling of the landfill cells.

3.23.4 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: Control and Monitoring.*

3.23.5 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) The rationalisation/elimination of narrow diameter pipework (i.e. 50mm I.D. or less) at the facility.

3.23.6 In advance of the commencement of waste disposal activities, 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.

3.23.7 Any landfill gas utilisation plant required under Condition 11.11.3 shall be installed at the facility.

3.23.8 The licensee shall maintain all gas wells, pipework, valves, pumps, flares and other infrastructure that forms part of the landfill gas management system in a safe and fully operational manner.

3.23.9 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.

3.24 Surface Water Management

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

a) The prevention of contaminated water and leachate discharges into surface water drains and courses;

b) The collection/diversion of run-off arising from capped and restored areas; and

c) The diversion of surfacewater where necessary, to prevent surfacewater ingress either into the leachate interceptor drain, or into areas where lining works are proposed.

3.24.2 All surfacewater run-off arising from all impermeable surfaces (excluding wastewater from the wheelwash and run-off from waste inspection/quarantine areas or bunded areas) shall be diverted to a silt trap and oil interceptor prior to discharge from the

facility. All silt traps and oil interceptors shall be adequately sized and shall be in accordance with European Standard I.S. EN-858-2: 2003 (installations for the separation of light liquids).

3.24.3 The licensee shall maintain all surfacewater discharge points from the facility. All discharges to surfacewater from the facility shall only be from discharge point(s) agreed by the Agency.

3.25 Groundwater Management

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

a) The protection of the groundwater resources from pollution by the waste activities; and

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

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

3.25.3 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).

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

3.26 Civic Waste Facility

3.26.1 The licensee shall maintain a Civic Waste Facility.

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

3.27 Compost Facility

3.27.1 Appropriate infrastructure for the composting of waste shall be established and maintained at the facility prior to any waste being composted. This infrastructure shall as a minimum comprise the following:-

a) An impermeable concrete slab;

b) Collection infrastructure to direct all run-off to the leachate collection system; and

c) Appropriate odour control/management infrastructure.

3.28 Monitoring Infrastructure

3.28.1 Landfill Gas

a) Subject to the agreement of the landowners, the licensee shall provide a representative number of monitoring locations to facilitate the measurement of landfill gas for the purposes of detecting any potential off-site migration of landfill gas.

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

3.28.2 Groundwater

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

3.28.3 Leachate

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

3.28.4 Replacement of Infrastructure

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

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

Condition 4 Interpretation

4.1 Landfill Gas

4.1.1 The following are the trigger levels for landfill gas emissions from the facility measured in any service duct or manhole on, at or immediately adjacent to the facility and/or at any other point located outside the body of the waste:-

(i) Methane, greater than or equal to 1.0% v/v; or

(ii) Carbon dioxide, greater than or equal to 1.5% v/v.

4.1.2 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 :-

(i) In the case of landfill gas flare:

Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and

(ii) In the case of landfill gas combustion plant:

Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.

4.1.3 Emission limits for emissions from landfill gas flare/combustion plant to atmosphere in this licence shall be interpreted in the following way.

4.1.3.1 Continuous Monitoring

(i) 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; and

(iii) No 30 minute mean value shall exceed twice the emission limit value.

4.1.3.2 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 all other parameters, no 30 minute mean value shall exceed the emission limit value; and

(iii) For flow, no hourly or daily mean value, calculated on the basis of appropriate spot readings, shall exceed the emission limit value.

4.2 Emissions to Surface Water

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

4.2.2 The following are the trigger levels for surface water emissions from the facility, measured at **SW-7, SW-8, SW-9, SW-10, and SW-11**:

(i) BOD 25mg/l

(ii) Suspended Solids 60mg/l

4.3 Noise

Noise from the facility shall not give rise to sound pressure levels (Leq, T) measured at the boundary of the facility which exceed the limit value(s).

4.4 Dust and Particulate Matter

Dust and particulate matter from the activity shall not give rise to deposition levels which exceed the limit value(s).

REASON: To provide for the restoration of the facility.

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.

REASON: To provide for the protection of the environment by way of control and limitation of emissions.

Condition 6 Control and Monitoring

6.1 Telemetry

6.1.1 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 a break in the power supply or during maintenance.

6.1.2 This system shall include:

(i) Recording of leachate levels in the lined cells and lagoon;

(ii) Recording of levels in the surface water lagoon and flows to the perimeter streams;

(iii) Quality of the surface water at the inlet to the surface water lagoons and being discharged to the perimeter streams; and

(iv) Permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.

6.2 The licensee shall maintain a meteorological station at the facility capable of monitoring the parameters listed in *Schedule C.6: Meteorological Monitoring*, of this licence.

6.3 Landfill Gas

6.3.1 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.

6.3.2 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.

6.3.3 Flares shall be operated to ensure a burn chamber residence time of minimum 0.3 seconds and burn temperature of minimum 1000°C.

6.3.4 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.

6.3.5 The licensee shall ensure that measures are in place to ensure the continuous operation of the required landfill gas management infrastructure at all times.

6.3.6 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.

6.3.7 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 assessment as may be required by the Agency.

6.3.8 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;

6.3.9 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.

6.3.10 The licensee shall carry out routine monitoring of the landfill gas management system in accordance with *Schedule C: Control and Monitoring.*

6.4 Litter Control

6.4.1 The measures and infrastructure as described in Section E of the Application documentation and Section 3.1 of the accompanying EIS shall be applied to control litter at the facility.

6.4.2 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.

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

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

6.5 Odour Control & Monitoring

6.5.1 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for agreement, an Odour Management Plan (OMP) for the facility.

6.5.2 The OMP referred to in 6.5.1 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);

(ix) Monitoring:- VOC surface emissions from capped areas, odour checks off- and on-site, receipt and evaluation/verification of odour complaints received.

6.5.3 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 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.

6.5.4 The OMP shall be reviewed annually and any updates/amendments submitted to the Agency as part of the Annual Environmental Report.

6.5.5 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.

6.5.6 All odorous or odour-forming wastes shall be covered as soon as practicable and in any case at the end of the working day.

6.5.7 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.

6.5.8 When siting and operating landfill gas infrastructure, regard shall be had to the potential for, and mitigation of, odour nuisance.

6.5.9 Leachate holding tanks/lagoons shall be covered, and head gases vented to treatment as may be required by the Agency.

6.5.10 When siting and operating landfill gas infrastructure, regard shall be had to the potential for, and mitigation of, odour nuisance.

6.6 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.

6.7 In advance of exiting the facility, all waste vehicles shall use the wheelwash.

6.8 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.

6.9 Operational Controls

6.9.1 Unless otherwise agreed by the Agency, the landfill extension shall be filled in accordance with the phase sequence outlined in Drawing No. **CE07-286-01_FIG 2.3** entitled "***Future Facility Infrastructure***".

6.9.2 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.

6.9.3 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.

6.9.4 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.

6.9.5 The working face, or faces, shall each day at the end of the day be covered with suitable material.

6.9.6 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.

6.9.7 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.

6.9.8 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.

6.9.9 Scavenging shall not be permitted at the facility.

6.9.10 Unless otherwise agreed by the Agency, all sludges shall be covered immediately with other waste.

6.9.11 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.

6.9.12 No smoking shall be allowed at the facility.

6.10 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.

6.10.1 Analyses shall be undertaken by competent staff in accordance with documented operating procedures.

6.10.2 Such procedures shall be assessed for their suitability for the test matrix and performance characteristics shall be determined.

6.10.3 Such procedures shall be subject to a programme of Analytical Quality Control using control standards with evaluation of test responses.

6.10.4 Where any analysis is sub-contracted it shall be to a competent laboratory.

6.11 The licensee shall ensure that:

(i) sampling and analysis for all parameters listed in the Schedules to this licence; and

(ii) any reference measurements for the calibration of automated measurement systems;

shall be carried out in accordance with CEN-standards. If CEN standards are not available, ISO, national or international standards that will ensure the provision of data of an equivalent scientific quality shall apply.

6.12 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.

6.13 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission/discharge (or ambient conditions where that is the monitoring objective).

6.14 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.

6.15 All treatment/abatement and emission control equipment shall be calibrated and maintained in accordance with the instructions issued by the manufacturer/supplier or installer.

6.16 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.

6.17 The licensee shall prepare and maintain 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.

6.18 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 six 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.

6.19 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.

6.20 Process Effluent

6.20.1 The acute toxicity of the undiluted final effluent to at least four aquatic species from different trophic levels shall be determined by standardised and internationally accepted procedures and carried out by a competent laboratory. The name of the laboratory and the scope of testing to be undertaken shall be submitted, in writing, to the Agency, within three months of the date of grant of this licence. Once the testing laboratory and the scope of testing have been agreed by the Agency, the Agency shall decide when this

testing is to be carried out and copies of the complete reports shall be submitted by the licensee to the Agency within six weeks of completion of the testing.

6.20.2 Having identified the most sensitive species outlined in Condition 6.20.1, subsequent compliance toxicity monitoring on the two most sensitive species shall be carried out by the laboratory identified in Condition 6.20.1. The Agency shall decide when this testing is to be carried out and copies of the complete reports shall be submitted by the licensee to the Agency within six weeks of completion of the testing.

6.20.3 A representative sample of effluent shall be screened for the presence of organic compounds. Such screening shall be repeated at intervals as requested by the Agency thereafter.

6.21 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.

6.22 Storm Water

A visual examination of the storm water discharges shall be carried out daily. A log of such inspections shall be maintained.

6.23 Noise

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.

6.24 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.

6.25 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.

6.26 Topographical Survey

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

6.27 Stability Assessment

The licensee shall carry out an annual 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).

6.28 Nuisance Monitoring

The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours.

6.29 Groundwater

6.29.1 Within three months of the date of grant of this licence the licensee shall submit to the Agency for its agreement, groundwater monitoring trigger levels in accordance with the requirements of Directive 1999/31/EC.

6.29.2 The trigger levels as specified in Condition 6.29.1 for groundwater shall be measured at monitoring boreholes **MW-01D, MW-05D, MW-08S, MW-08B, BH-01S, BH-01D, BH-02D, BH-03D and BH-04D**.

REASON: ***To provide for the protection of the environment by way of treatment and monitoring of emissions.***

Condition 7 Resource Use and Energy Efficiency

7.1 The licensee shall carry out an audit of the energy efficiency of the site within one year of the date of grant of this licence. The audit shall 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. Reductions in water usage 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 Landfill Waste Acceptance Procedures

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, the licensee shall submit to the Agency for its agreement updated written procedures for the acceptance and handling of all wastes. These procedures shall include details of the treatment of all waste to be carried out in advance of acceptance at the facility and shall also include methods for the characterisation, classification and coding of waste. The procedures shall have regard to the Council Decision (2003/33/EC) establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC on the landfill of waste.

8.2.3 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 sites and WEEE collection centres 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.

8.2.4 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.

8.2.5 Waste received at the facility form non pre-cleared costumers shall be directed to the quarantine area.

8.2.6 The waste acceptance procedures established under Condition 8.2.2 shall provide:-

(i) For the checking of waste documentation on receipt of waste in the waste reception area;

(ii) For non pre-cleared customers, the visual inspection and testing of waste in the waste quarantine area pending acceptance/rejection;

(iii) For the visual inspection of waste when deposited at the working face;

(iv) For the keeping for two months of any sampling and analytical results associated with on-site verification sampling of waste accepted at the facility.

8.2.7 Only waste that has been subject to treatment shall be accepted for disposal at the landfill facility.

(i) Treatment shall reflect published EPA technical guidance as set out in *Municipal Solid Waste – Pre-treatment and Residuals Management*, EPA, 2009.

(ii) With the agreement of the Agency, this condition shall not apply to:

- inert wastes for which treatment is not technically feasible;

- other waste for which such treatment does not contribute to the objectives of the Landfill Directive as set out in Article 1 of the Directive by reducing the quantity of the waste or the hazards to human health or the environment.

8.2.8 Unless otherwise as may be specified by the Agency, the following limits shall apply:

(i) From 1 July 2010 to 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.

8.2.9 Two or more licensed landfills may seek the agreement of the Agency that collectively they will arrange to comply with Condition 8.2.8. Such agreement may be sought by review of the landfill licence for any facility seeking an increase in the limits set out in Condition 8.2.8, 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.

8.2.10 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 8.2.13 shall not be considered BMW.

8.2.11 Bio-stabilised residual wastes meeting the requirements of

- Condition 8.2.13, 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 8.2.8.

8.2.12 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.

8.2.13 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 <10mg O_2/g DM until 1 January 2016 and <7mg O_2/g DM thereafter.

8.2.14 Bio-stabilised residual wastes shall be monitored in accordance with *Schedule C. 8 Waste Monitoring* of this licence.

8.2.15 Waste that was accepted to the body of the landfill as stabilised waste, but subsequently is found not to meet the stabilisation standard set out in Condition 8.2.13 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 8.2.8.

8.2.16 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with Conditions 8.2.7 and 8.2.8, which shall be available for inspection by Agency personnel.

8.2.17 The licensee shall as part of the Annual Environmental Report for the site submit a statement on the achievement of the waste acceptance and pre-treatment obligations articulated in Conditions 8.2.6, 8.2.7 and **8.2.8** and as otherwise may be specified in national or EU policy.

8.2.18 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.

8.2.19 The dilution or mixture of waste solely in order to fulfil relevant waste acceptance criteria established under Condition 8.2.2 is prohibited.

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

8.2.21 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).

8.2.22 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.

8.2.23 No hazardous wastes or liquid wastes shall be disposed of at the facility.

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

8.3 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.

8.4 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.

8.5 The loading and unloading of materials shall be carried out in designated areas protected against spillage and leachate run-off.

8.6 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.

8.7 No waste classified as green list waste in accordance with the EU Shipment of Waste Regulations (Council Regulation EC No. 1013/2006, as may be amended) shall be consigned for recovery without the agreement of the Agency.

8.8 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.

8.9 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.

8.10 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.

8.11 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.

8.12 Daily and Intermediate Cover

8.12.1 Any cover material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.

8.12.2 Appropriate cover material shall be placed across the whole landfill so that no waste, other than the following is exposed:-

a) Waste suitable for specified engineering works; and

b) Waste on the working face during the operational hours of the facility.

8.12.3 Bio-stabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 8.2.13 (or meets the requirements of an alternative protocol as may be agreed under Condition 8.2.11), 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.

8.13 Landscaping

The licensee shall maintain a landscaping plan for the facility. This shall include measures to screen the Civic Waste Facility.

8.14 Sludge Handling

Only treated sewage sludge with greater than 25% solids shall be accepted at the facility. The hours of acceptance for treated sludges shall be between the hours of 08.30 hrs and 14.00 hrs Monday to Friday inclusive. All sewage sludge shall be covered immediately with other waste.

8.15 Compost

8.15.1 Prior to the commencement of composting at the facility, the licensee shall submit to the Agency for agreement proposals for the operation of the compost facility. These proposals shall as a minimum include details of the composting process, waste acceptance/screening procedures, location of the compost facility, nuisance control measures, surface-water management, monitoring of the composting process and of the end product, and the proposed end use of the compost.

8.15.2 All wastes accepted at the composting facility shall be introduced into the composting process within 24 hours of delivery.

8.15.3 No waste shall be left uncovered in the composting area from the close of operation on Saturday until Monday morning opening unless otherwise agreed by the Agency.

8.15.4 The licensee shall undertake regular monitoring of the composting process and maintain daily records of certain parameters (to be agreed by the Agency under Condition 8.15.1).

8.15.5 In order not to be considered a waste, compost produced by the facility shall comply with the quality standards established in *Schedule E: Standards for Compost*

Quality, of this licence. Analysis of the compost shall be in accordance with the requirements of that Schedule.

8.16 Inert Waste

Inert waste used at the landfill for construction/engineering purposes shall comply with the standards established in the EU Decision (2003/33/EC). Only the inert wastes specified in *Schedule F: Acceptance of Inert Waste*, of this licence shall be accepted for recovery at the facility.

8.17 Civic Waste Facility

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

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

a) Into a skip;

b) Into the hopper of the compactor for disposal;

c) Into a receptacle for recovery; or

d) In the case where inspection is required, into a designated inspection area.

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

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

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

8.18 Leachate Management

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

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

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

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

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

8.19 Maintenance

8.19.1 All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer. Written records of the calibrations and maintenance shall be made and kept by the licensee.

8.19.2 All lagoon structures on the facility shall be inspected and certified fit for purpose every three years by an independent and appropriately qualified chartered engineer.

8.19.3 The licensee shall maintain and clearly label and name all sampling and monitoring locations.

8.19.4 The wheel-wash shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel-wash and disposed of at the working face.

Reason: To provide for 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 maintain, review annually and update as necessary, an Emergency Response Procedure (ERP). The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment. This shall include a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities. The Fire Authority shall be consulted by the licensee during this assessment.

9.3 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 Closure, Restoration and Aftercare Management Plan (CRAMP)

10.2.1 The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for the decommissioning or closure of the site or part thereof. This plan shall be submitted to the Agency for agreement within six months of the date of grant of the licence.

10.2.2 The plan shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the agreement of the Agency.

10.2.3 The licensee shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Condition 10.2.1 above.

10.3 The Decommissioning Management Plan shall include, as a minimum, the following:

(i) a scope statement for the plan;

(ii) the criteria that define the successful decommissioning of the activity or part thereof, which ensures minimum impact on the environment;

(iii) a programme to achieve the stated criteria;

(iv) where relevant, a test programme to demonstrate the successful implementation of the decommissioning plan; and

(v) details of the costings for the plan and the financial provisions to underwrite those costs.

10.4 A final validation report to include a certificate of completion for the Decommissioning Management Plan, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

10.5 The final height of the facility, following **allowable settlement** of the final capping, shall be 94m OD Malin.

10.6 Final Capping

10.6.1 With the exception of those unlined areas located on the interface with the existing lined cells and unless otherwise agreed by the Agency, the final capping shall consist of the following:-

a) Top soil (150 -300mm);

b) Subsoils, such that the total thickness of top soil and subsoils is at least 1m [gas collection pipework above the gas barrier membrane (paragraph (d) below) shall remain exposed for at least twenty-four months prior to covering];

c) Drainage layer of 0.5m thickness having a minimum hydraulic conductivity of $1x10^{-4}$ m/s, or an equivalent geosynthetic material that provides equivalent transmissivity;

d) Compacted mineral layer of a minimum 0.6m thickness with a permeability of less than $1x10^{-9}$ m/s or a geosynthetic material (e.g. LLDPE) or similar that provides equivalent protection; and

e) Gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.

10.7 No material or object that is incompatible with the proposed restoration of the facility shall be present within one metre of the final soil surface levels.

10.8 Where tree planting is to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Combined topsoil and subsoil depths shall be a minimum of 1m.

10.9 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.

10.10 Soil Storage

All soils shall be stored to preserve the soil structure for future use.

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 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* 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.

11.2 In the case of any incident relating to discharges to water, the licensee shall notify the Local and Water Services Authority and **Inland Fisheries Ireland** as soon as practicable after such an incident.

11.3 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.

11.4 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.

11.5 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.

11.6 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.

11.7 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 H: Annual Environmental Report* of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.

11.8 The licensee shall maintain a written record for each load of waste arriving at the facility, excluding those arriving at the Civic Waste Facility. The licensee shall record the following:

(i) the date and time;

(ii) the name of the carrier (including if appropriate, the waste carrier registration details);

(iii) the vehicle registration number;

(iv) the trailer, skip or other container unique identification number (where relevant);

(v) the name of the producer(s)/collector(s) of the waste as appropriate;

(vi) the name of the waste facility (if appropriate) from which the load originated including the

waste licence or waste permit register number;

(vii) a description of the waste including the associated EWC/HWL codes;

(viii) the quantity of the waste, recorded in tonnes;

(ix) details of the treatment(s) to which the waste has been subjected;

(x) the classification and coding of the waste, including whether MSW or otherwise;

(xi) whether the waste is for disposal or recovery and if recovery for what purpose;

(xii) the name of the person checking the load; and

(xiii) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.

11.9 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.

11.10 The licensee shall submit report(s) as required by the conditions of this licence to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency.

11.11 All reports shall be certified accurate and representative by the facility manager or a nominated, suitably qualified and experienced deputy.

11.12 Reports relating to Facility Operations

11.12.1 Leachate Handling Procedures

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

11.12.2 Achievement of Final Profile

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

11.12.3 Landfill Gas Utilisation

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

11.12.4 Surface water Management

A programme for the management of surface water at the facility shall be maintained by the licensee, and agreed by the Agency. The programme shall be

updated as necessary or as required by the Agency, and shall include adequate control measures for surface water at the facility.

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

11.13 Monitoring Locations

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

11.14 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 8.2.8. **from date of grant of licence**, and unless otherwise advised by the Agency, the licensee shall submit quarterly summary reports to the Agency within one week of the end of each **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.

11.15 Archaeological Assessment

Prior to the development of any undisturbed area, the advice of the Heritage Section (**Dúchas**) of the Department of Environment, Heritage and Local Government shall be sought. **On completion of such development, a report of the results of any archaeological monitoring shall be submitted to Dúchas and to the Agency.**

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:

a) The recovery of Construction and Demolition Waste;

b) The recovery of other waste in landfill operations, including restoration; and

c) The recovery of energy through landfill gas combustion.

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

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 **€20,945**, 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 Environmental Liabilities

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

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

12.2.3 As part of the measures identified in Condition 12.2.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities identified in Condition 12.2.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.2.1.

12.2.4 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 12.2.2 and 12.2.3 above.

12.2.5 Unless otherwise agreed, any revision to that part of the indemnity dealing with restoration and aftercare liabilities (refer Condition 10.2) shall be computed using the following formula:-

Cost = (ECOST x WPI) + CiCC

Where:-

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

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

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

12.2.6 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.

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

SCHEDULE A: Limitations

A.1 Limitations

The following waste related processes are authorised:

- Composting of biodegradable waste.
- Shredding, crushing, mixing of construction and demolition waste
- Landfilling of waste
- Use of compost & inert waste in landfill operation
- Storage of waste

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

A.2 Waste Acceptance

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

WASTE TYPE Note 1	MAXIMUM (TONNES PER ANNUM) Note 2
Household	45,500
Commercial	39,500
Industrial Non-Hazardous Solids	11,000
Treated Municipal Sludge	2,000
Construction and Demolition Waste	2,000
Total	100,000

Note 1: Any proposals to accept other compatible waste streams must be agreed in advance by the Agency and the total amount of waste must be within that specified.

Note 2: The individual limitation on waste processes may be varied with the agreement of the Agency subject to the overall total limit staying the same.

Table A.3 Waste Categories and Quantities to be accepted for Recovery

Waste Type	Maximum (Tonnes Per Annum)
Biodegradable waste for composting	To be agreed by the Agency Note 1
Inert Waste	To be agreed by the Agency Note 1
Waste to be accepted at the Civic Waste Facility Note 2	To be agreed by the Agency Note 1

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

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

Table A.4 Total Permitted Landfill Capacity

Total quantity of waste permitted to be placed at the landfill facility (over authorised life of facility)	1,564,000m^3

Schedule B: Emission Limits

B.1 Noise Emissions:

(Measured at any noise sensitive locations).

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

B.2 Landfill Gas Concentration Limits:

(Measured in any building on or adjacent to the facility).

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

B.3 Dust Deposition Limits:

(Measured at the monitoring points indicated in *Table C.1.1*).

Level (mg/m^2 /day) Note 1
350

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

B.4 Emission Limits Values for Landfill Gas Plant:

Emission Point Reference No.: A-1

Location: Landfill Gas Utilisation Plant and/or flare.

Max. Volume to be emitted: **1,500m^3/hr.** (unless otherwise agreed by the Agency).

Minimum discharge height: 5m (unless otherwise agreed by the Agency).

Parameter	Flare (enclosed) Emission Limit Value Note 1, 2, 3	Utilisation Plant Emission Limit Value Note 1, 2
Nitrogen oxides (NO_x)	150 mg/m^3	500 mg/m^3
CO	50 mg/m^3	1400 mg/m^3
Particulates	Not applicable	130 mg/m^3
Total Volatile Organic Compounds (VOCs)	Not applicable	1000 mg/m^3
Total non-methane VOCs	Not applicable	75 mg/m^3
Total organic carbon (TOC)	10 mg/m^3	Not applicable
Hydrogen Chloride	50 mg/m^3 (at mass flows > 0.3 kg/h)	50 mg/m^3 (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m^3 (at mass flows > 0.05 kg/h)	5 mg/m^3 (at mass flows > 0.05 kg/h)

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

Note 2: These emission limit values may be revised with the agreement of the Agency on the basis of the technology employed.

Schedule C: Control & Monitoring

C.1 Monitoring Locations

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

Table C.1.1 Monitoring Locations

Landfill Gas Stations Note 1	**Dust Deposition Stations** Note 1	**Noise Stations** Note 1	**Surface Water Stations** Note 1	**Ground Water Stations** Note 1	**Leachate Stations** Note 1
GP-01, GP-03, GP-05, GP-08, GP-09, GP-13, GP-14, GP-15	DM-02, DM-04, DM-05, DM-07	N2, N3, N6, N8	SW7, SW8, **SW9, SW10,** SW11	MW-01D, MW-05D, MW-08S, MW-08B	LE-02, **LE-07, LE-08, LE-09.**
Site Office & Buildings			**SW-12**	BH-01S, BH-01D	Lined cells Note 3
GP-17, GP-18, GP-19, GP-20, GP-25, GP-26, GP-27, GP-28, GP-29, GP-30				**BH-02S, BH-02D, BH-03S, BH-03D, BH-04S, BH-04D**	Leachate storage structure
Lined cells Note 2					
A-1					

Note 1: **As shown on Map "CE07-286-007_Rev C" in Article 14(2)(b)(ii) response received by the Agency on 03/02/2010.**
Note 2: At least one per cell within lined waste disposal areas.
Note 3: As per the requirements of Condition 3.22.

C.2 Landfill Gas

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

Parameter	**Monitoring Frequency**		**Analysis Method** Note 1 **/Technique** Note 2
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH_4) % v/v	Monthly	Continuous	Infrared analyser/flame ionisation detector
Carbon dioxide (CO_2) % v/v	Monthly	Continuous	Infrared analyser/ flame ionisation detector
Oxygen (O_2) % v/v	Monthly	Continuous	Electrochemical cell
Atmospheric Pressure	Monthly	-	Standard
Temperature	Monthly	-	Standard

Note 1: All monitoring equipment used should be intrinsically safe.
Note 2: Or other methods agreed in advance with the Agency.

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C.3 Dust Monitoring

Table C.3.1 Dust Monitoring Parameters, Frequency and Technique

Parameter (mg/m²/day)	Monitoring Frequency	Analysis Method/Technique
Dust Deposition [Note 1]	Three times a year [Note 2]	Standard Method [Note 3]

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

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

Note 3: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). Any modifications to eliminate interference due to algae growth in the gauge should be reported to the Agency.

C.4 Noise

Table C.4.1 Noise Monitoring Parameters, Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
$L(A)_{EQ}$ [30 minutes]	Annual	Standard [Note 1]
$L(A)_{10}$ [30 minutes]	Annual	Standard [Note 1]
$L(A)_{90}$ [30 minutes]	Annual	Standard [Note 1]
Frequency Analysis ($^1/_3$ Octave band analysis)	Annual	Standard [Note 1]

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

C.5 Monitoring of Emissions to Surface Water, Groundwater and Leachate

Table C.5.1 Water and Leachate - Parameters / Frequency

PARAMETER [Note 1]	SURFACE WATER [Note 2] Monitoring Frequency	GROUNDWATER Monitoring Frequency	LEACHATE Monitoring Frequency
Visual Inspection/Odour [Note 2]	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Daily	Not Applicable	Continuous [Note 4]
Ammonia (as N)	Quarterly	Quarterly	Annually
BOD	Quarterly	Not Applicable	Annually
COD	Quarterly	Not Applicable	Annually
Chloride	Quarterly	Quarterly	Annually
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Quarterly	Annually
pH	Quarterly	Quarterly	Annually
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	Quarterly	Quarterly
Metals / non metals [Note 3]	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
Mercury	Annually	Annually	Annually
Sulphate	Annually	Annually	Annually
Total Alkalinity	Annually	Annually	Not applicable
Total P/orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Annually	Annually
Total Organic Carbon	Not Applicable	Quarterly	Not Applicable
Residue on evaporation	Not Applicable	Annually	Not Applicable

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

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

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

Note 4: Continuous monitoring in the leachate storage lagoon/structure and in lined cells, and weekly in the leachate abstraction boreholes (unlined areas).

C.6 Meteorological Monitoring

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

Table C.6.1 Meteorological Monitoring Parameters, Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Force and Direction	Daily	Standard
Evaporation	Daily	Standard
Evapotranspiration [Note 1]	**Daily**	**Standard**
Atmospheric Humidity (1400h CET)	**Daily**	**Standard**
Atmospheric Pressure [Note 1]	Daily	Standard

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

C.7 Landfill Gas Enclosed Flare/Utilisation Plant

Location: A-1

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

Parameter	Flare (enclosed) Monitoring Frequency	Utilisation Plant Monitoring Frequency	Analysis Method Note 1 / Technique Note 2
Inlet			
Methane (CH_4) % v/v	Continuous	Weekly	Infrared analyser/flame ionisation detector/thermal conductivity
Carbon dioxide (CO_2) % v/v	Continuous	Weekly	Infrared analyser/thermal conductivity
Oxygen (O_2) % v/v	Continuous	Weekly	Electrochemical/thermal conductivity
Total Sulphur	Annually	Annually	Ion chromatography
Total Chlorine	Annually	Annually	Ion chromatography
Total Fluorine	Annually	Annually	Ion Selective Electrode
Process Parameters			
Combustion Temperature	Continuous	Quarterly	Temperature Probe/datalogger
Residence Time	Quarterly	Quarterly	To be agreed
Outlet			
Volumetric flow rate	**Continuous**	**Continuous**	**Standard Method**
CO	Continuous	Continuous	Flue gas analyser/datalogger
NOx	Annually	Continuous	Flue gas analyser
SO_2	Annually	Annually	Flue gas analyser
Particulates	Not applicable	Annually	Isokinetic/Gravimetric
Total VOCs	Not applicable	Annually	Flame ionisation
Total non-methane VOCs	Not applicable	Annually	Adsorption-thermal desorption
TOC	Annually	Not applicable	Flame ionisation
Hydrochloric acid	Annually	Annually	Impinger /Ion Chromatography
Hydrogen fluoride	Annually	Annually	Impinger /Ion Chromatography

Note 1: All monitoring equipment used should be intrinsically safe.
Note 2: Or other methods agreed in advance with the Agency.

C.8 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 8.2.11.

C.9 Ambient Odour Monitoring

Parameter	Frequency	Analysis Method/Technique
Odour	Monthly	As agreed with the Agency

Schedule D: Recording and Reporting to the Agency

Report	Reporting Frequency Note 1	Report Submission Date
Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	By 31st March each year.
Record of incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	Prior to the use of any new structures and within one month after end of the three year period being reported on.
Specified Engineering Works reports	As they arise	Prior to the works commencing.
Licence Monitoring requirements: **- landfill gas** **- leachate** **- groundwater quality** **- surface water quality** **- dust** **- noise** **-surface emissions (capped areas)**	Annually	As part of the AER.
Topographical Survey	Annually	One month after the end of the year being reported on.
Stability Assessment	Annually	One month after the end of the year being reported on.
Leachate Handling Procedures	**As agreed**	-
Achievement of Final Profile	**As agreed**	-
Landfill Gas Utilisation	**As agreed**	-
Surface Water Management	**As agreed**	-
Quantity of MSW and BMW accepted at the facility.	**Quarterly**	**Within one week of the end of each quarter.**
Any other monitoring	As they occur	Within ten days of obtaining results.

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

Schedule E: Standards for Compost Quality

The following criteria are deemed a quality standard for the use of compost as a soil improver and should not be deemed as criteria for fertiliser. In addition N, P, K, NH_4-N, NO_3-N, pH and dry matter content should also be measured.

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

The state of the curing pile must be conducive to aerobic biological activity.

Compost shall be deemed to be mature if it meets two of the following groups of requirements or other maturity tests as may be agreed with the Agency:

1. Respiration activity after four days AT4 is ≤10mg/O2/g dry matter or Dynamic Respiration Index is ≤1,000mgO2/kg VS/h.
2. Germination of cress (*Lepidium sativum*) seeds and of radish (*Raphanus sativus*) seeds in compost must be greater than 90 percent of the germination rate of the control sample, and the growth rate of plants grown in a mixture of compost and soil must not differ more than 50 percent in comparison with the control sample.
3. Compost must be cured for at least 21 days; and

   Compost will not reheat upon standing to greater than 20°C above ambient temperature, or

Compost must be cured for a six month period and offensive odours from the compost shall be minimal for the compost to be deemed mature.

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

Table E.1 Trace Elements (Compost and Digestate) [Note 1]

Maximum Trace Element Concentration Limits [Note 2]

Parameter (mg/kg, dry mass)	Compost Quality Standards [Note 3] / Digestate Quality Standards [Note 3]		Stabilised Biowaste
	Class 1 [Note 5]	Class 2 [Note 6]	
Cadmium (Cd)	0.7	1.5	5
Chromium (Cr)	100	150	600
Copper (Cu)	100	150	600
Mercury (Hg)	0.5	1	5
Nickel (Ni)	50	75	150
Lead (Pb)	100	150	500
Zinc (Zn)	200	400	1500
Polychlorintated Biphenyls (PCB's)	-	-	0.4
Polycyclic Aromatic Hydrocarbons (PAH's)	-	-	3
Impurities >2mm [Note 4]	<0.5%	<0.5%	<3%
Gravel and Stones >5mm [Note 4]	<5%	<5%	-

Note 1: These limits apply to the compost after the composting phase and prior to mixing with any other materials.
Note 2: The above alone should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.
Note 3: Normalised to 30% organic matter content.
Note 4: Compost must not contain any sharp foreign matter measuring over a 2 mm dimension that may cause damage or injury to humans, animals and plants during or resulting from its intended use.
Note 5: All use of compost of Class 1 Standard shall be in accordance with best agronomic practice.
Note 6: All use of compost of Class 2 Standard shall be in accordance with best agronomic practice. Notwithstanding this, it shall be used in a quantity not exceeding 30 Tonnes dry matter per hectare (on a three year average).

Pathogens

Pathogenic organism content must not exceed the following limits:

Salmonella sp.	Absent in 50g	n = 5
Faecal Coliforms	≤ 1000 Most Probable Number (MPN) in 1g	n = 5

Where: n = Number of samples to be tested.

Monitoring

The licensee shall monitor the compost product at least annually. The licensee shall submit to the Agency for its agreement, prior to commencement of compost operations, details of methods of analyses and sample numbers.

Schedule F: Acceptance of Inert Waste

F.1 Acceptable Waste for Recovery

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

Table F.1.1 Waste for Recovery

WASTE	
Topsoil	Solid Road Planings, Solid Tarmacadam, Solid Asphalt [Note1]
Subsoil	Brickwork
Stone, Rock and Slate	Natural Sand
Clay, Pottery and China	Concrete

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

Schedule G: Specified Engineering Works

Specified Engineering Works
Development of the facility including preparatory works and lining.
Construction of additional lined cells (3-9).
Final capping.
Installation of Compost Facility.
Installation of Landfill Gas Management Infrastructure.
Installation of Leachate Management Infrastructure.
Installation of Groundwater Control Infrastructure.
Installation of Surface Water Management Infrastructure.
Any other works notified in writing by the Agency.

Schedule H: Content of the Annual Environmental Report

Annual Environmental Report Content
Reporting Period.
Waste activities carried out at the facility.
Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year.
Calculated remaining capacity of the facility and year in which final capacity is expected to be reached.
Methods of deposition of waste.
Summary report on emissions.
Summary of results and interpretation of environmental monitoring.
Resource and energy consumption summary.
Proposed development of the facility and timescale of such development.
Volume of leachate produced and volume of leachate transported / discharged off-site.
Report on development works undertaken during the reporting period, and a timescale for those proposed during the coming year.
Report on restoration of completed cells/ phases.
Site survey showing existing levels of the facility at the end of the reporting period.
Estimated annual and cumulative quantities of landfill gas emitted from the facility.
Estimated annual and cumulative quantity of indirect emissions to groundwater.
Annual water balance calculation and interpretation.
Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year's report.
Schedule of Environmental Objectives and Targets for the forthcoming year.
Full title and a written summary of any procedures developed by the licensee in the year which relates to the facility operation.
Tank, pipeline and bund testing and inspection report.
Report on the performance and compatibility of the septic tank (and associated percolation area) with the Agency's *Wastewater* Code of Practice *Wastewater Treatment and Disposal Systems Serving Single Houses* (2009).
Odour Management Plan (OMP) annual return.
Stability Assessment required under Condition 6.27.
Landfill Environmental Management Plan (LEMP) annual return.
Pollution Release and Transfer Register (PRTR) annual return.
Closure, Restoration and Aftercare Management Plan (CRAMP) annual return.
Environmental Liabilities Risk Assessment (ELRA) annual review.
Statement of compliance of facility with any updates of the relevant Waste Management Plan.
Statement on the achievement of the waste acceptance and treatment obligations.
Reported incidents and Complaints summaries.
Review of Nuisance Controls.
Reports on financial provision made under this licence, management and staffing structure of the facility, and a

programme for public information.

Report on training of staff.

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

Statement on the achievement of the waste acceptance and treatment obligations.

Any other items specified by the Agency.

Signed on behalf of the said Agency _____

On the xxth day of xxxx, 2010 xxxxxxxxxxx, **Authorised Person**