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

WASTE LICENCE
PROPOSED DECISION

Waste Licence Register Number:	109-1
Applicant:	Clare County Council
Location of Facility:	Central Waste Management Facility, Ballyduff Beg, Inagh, County Clare

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 operation and development of a new Central Waste Management Facility at Ballyduff Beg, Inagh, County Clare.

The proposed facility covers a total area of 60.5ha. Approximately 40ha of this land surrounding the area to be filled (and within the site boundary) is to act as a buffer screen. The proposed engineered lined landfill is approximately 10ha and will have a void space for 1 million m^3 of municipal solid waste. The facility also includes a Civic Waste Facility, recovery / recycling facility and a composting area. The waste intake at the facility is limited to 62,500 tonnes per annum. Infrastructure to control emissions to the environment must meet BATNEEC standards. The licensee must manage and operate the facility to ensure that the activities do not cause environmental pollution. The licensee has to carry out regular environmental monitoring and submit all monitoring results, and a wide range of reports on the operation and management of the facility, to the Agency. The conditions of this licence set out in detail the legal constraints under which Clare County Council is allowed to operate and manage the Central Waste Management Facility.

Table of Contents

Reasons for the Decision

The Agency is satisfied, on the basis of the information available, that the waste activity will comply with the requirements of Section 40(4) of the Waste Management Act, 1996.

In reaching this decision the 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 Act, 1996, the Environmental Protection Agency (the Agency) proposes, under Section 40(1) of the said Act to grant this Waste Licence to Clare County Council to carry on the waste activities listed below at the proposed Central Waste Management Facility, Ballyduff Beg, Inagh, County Clare subject to eleven conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

Licensed waste disposal activities, in accordance with the Third Schedule of the Waste Management Act, 1996

Class 2.	**Land treatment, including biodegradation of liquid or sludge discards in soils:**
	This activity is limited to the disposal of treated de-watered non-hazardous industrial sludge at the facility.
Class 4.	**Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons:**
	This activity is limited to the storage and management of leachate and stormwater in lined lagoons.
Class 5.	**Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.**
	This activity is limited to the disposal of a maximum of 56,500 tonnes of non-hazardous waste, excluding sewage sludge, per annum into engineered lined cells.
Class 6.	**Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule:**
	This activity is limited to leachate re-circulation and the disposal of compost that is produced on site.
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 calcination):**
	This activity is limited to possible future leachate treatment at the facility in order to reduce the strength and volume of leachate tankered off-site for treatment.
Class 11.	**Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.**
	This activity is limited to the mixing of waste at the Civic Waste Facility prior to being landfilled.
Class 12.	**Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.**
	This activity is limited to the mixing or compaction of waste and the reloading of waste tipped for inspection into a container prior to landfilling at the facility or disposal off site.
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.**
	This activity is limited to the storage of waste at the Civic Waste Facility prior to disposal either off site or at the landfill.

Licensed waste recovery activities, in accordance with the Fourth Schedule of the Waste Management Act, 1996

Class 2.	**Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):**
	This activity is limited to the composting of waste and the recovery of organic wastes including timber, paper and cardboard at the facility.
Class 3.	**Recycling or reclamation of metals and metal compounds:**
	This activity is limited to the storage of metals including white goods, batteries and scrap metal at the facility pending further recovery off-site.
Class 4.	**Recycling or reclamation of other inorganic materials:**
	This activity is limited to the storage and recovery of glass and construction and demolition waste at the facility pending the recovery off-site or in the case of construction and demolition waste it's use in landfill restoration and engineering works.
Class 9.	**Use of any waste principally as a fuel or other means to generate energy:**
	This activity is limited to the possible future use of landfill gas as an energy resource to produce electricity and heat.
Class 10.	**The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system:**
	This activity is limited to the use of compost as a soil conditioner at the facility for restoration.
Class 11.	**Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:**
	This activity is limited to the use of compost and construction and demolition waste as cover material or in restoration, and the use of construction and demolition waste as building material at the facility.
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:**
	This activity is limited to the storage of waste destined for recovery activities.

INTERPRETATION

All terms used in this licence should be interpreted according to the definitions in the Waste Management Act, 1996 (the Act) unless specified below.

Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Adequate lighting	20 lux measured at ground level.
Agreed	Agreed or specified by the Agency in advance in writing.
Agreement	Agreement in writing.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
Application	The application by the licensee for this waste licence, including any other material submitted to the Agency in writing by the licensee between the date of the application and the date of grant of this licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
Biannually	Twice a year at six monthly intervals.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard.
Buffer Zone	Is an area between the area of the landfill to be filled and the boundary of the facility within which no waste shall be deposited.
Compost	A solid mature product resulting from composting and meeting the quality specified in Schedule H.
Composting	An aerobic treatment method for the decomposition of biodegradable waste.
Condition	A condition of this licence. In any case where this licence refers to a numbered condition, the reference shall be taken to mean the condition and any sub-condition therein which the context of the reference requires that reference is made to
Containment boom	A boom which can contain spillages and prevent these 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 with the Agency.
Daytime	8.00 a.m. to 10.00 p.m.
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 Limit Value	Those limits, including concentration limits and deposition levels established in Schedule F.
European Waste Catalogue (EWC)	The EWC is 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	That area or areas defined under Condition 1.2
FAS Waste Management Training Programme	A competency based certification to meet the EPA Waste Management Integrated Licensing requirements.
Fire Authority	Clare County Council
Foreign matter	Any matter over a 2 mm dimension that results from human intervention and having organic or inorganic constituents such as metal, glass and synthetic polymers (e.g. plastic and rubber) that may be present in the compost but excluding mineral soils, woody material and rocks.
Green waste	Waste wood, plant matter and other vegetation.
Inert waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.
Incident	Any reference to an incident in this licence means an incident as defined in Condition 3.1.
Landfill Directive	Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste.
Landfill Footprint	Area within which waste may be landfilled.
Landfill Gas	Gases generated from the landfilled waste.
Landfill Manuals	Landfill manuals published by the Agency pursuant to Section 62 of the EPA Act 1992.
Leachate	Any liquid percolating through the deposited waste and emitted from or contained within a landfill as defined in Section 5 (1) of the Act.
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 ^{o}C and atmospheric pressure.

Licence	A Waste Licence issued in accordance with the Act.
Licensee	Clare County Council.
List I/II Organics	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Mobile Plant	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works
Monthly	At least 12 times per year, at approximately monthly intervals.
Night-time	10.00 p.m. to 8.00 a.m.
Operational Day	8.00 to 18.00 Monday to Friday, with the exclusion of Bank Holidays ; 8.00 to 16.00 on Saturdays.
Non-hazardous waste	Non-Hazardous Waste is any waste which is not a hazardous waste as defined in the Act.
Putrescible waste	Biodegradable waste with the potential to give rise to an offensive odour.
Quarterly	A period of three calendar months, the first period of which commences on the date of grant of this licence
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% dry matter.
Soil improver	Materials sold as end user products for gardening to be added to the soil to improve at least its physical condition or its physical and biological condition without causing harmful effects.
Specified Emissions	Those emissions listed in Schedule F: Emission Limits of this licence.
Specified Engineering Works	Those engineering works listed in Schedule D: Specified Engineering Works of this licence.
Submit	Unless the context of this licence indicates otherwise, submit in writing to the Agency for its agreement
TSP	Total suspended particulates
Treated Sludge	Sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as to reduce significantly its odour potential, fermentability and the health hazards resulting from its use.

Trigger Level	A parameter value which when achieved or exceeded requires certain actions to be taken.
White Goods	Refrigerators, cookers, ovens and other similar appliances.
Working Day (Environmental Protection Agency)	9.00 a.m. to 5.30 p.m. Monday to Friday.
Working Face	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.

Part II CONDITIONS

CONDITION 1 SCOPE

1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and required by the licence.

1.2. For the purposes of this licence the facility means the area of land outlined in red on Drawing No. 99-01005.03 Rev B "1:2500 Site Layout Plan" of the application. Any reference in this licence to "facility" shall mean the area thus outlined in red.

1.3. This licence is for the purposes of waste licensing under the Waste Management Act 1996 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.

1.4. The total quantity of wastes to be accepted for disposal or recovery at the facility shall not exceed 62,500, and the quantity of waste to be accepted for disposal at the landfill shall not exceed 56,500 tonnes per annum.

1.5. Only those wastes listed in Schedule G shall be recovered and disposed of at the facility subject to the maximum quantities and other constraints specified in that Schedule and in this licence.

1.6. No hazardous waste (excluding wastes covered by *Schedule G: Waste Acceptance*) or Liquid Waste shall be accepted at the facility.

1.7. Waste Acceptance Hours and Hours of Operation

a) Waste shall only be accepted at the facility between the hours of 08:30 to 17:30 Monday to Friday inclusive, with the exclusion of Bank Holidays and 9:00 to 15:00 on Saturdays.

b) The facility shall only be operated during the hours of 8.00 to 18.00 Monday to Friday, with the exclusion of Bank Holidays and 8.00 to 16.00 on Saturdays.

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

c) that only those wastes as specified, if any, in the notice are to be accepted or not accepted at the facility after the date set down in the notice;

d) that the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice; and,

e) 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 confirmation is received from the Agency that the notice is withdrawn.

1.9. Every plan, programme or proposal submitted to the Agency for its agreement pursuant to any condition of this licence shall include a proposed timescale for its implementation. The Agency may modify or alter any such plan, programme or proposal in so far as it considers such modification or alteration to be necessary. Every 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.

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

CONDITION 2 MANAGEMENT OF THE ACTIVITY

2.1 Environmental Management System

2.1.1 The licensee shall three months prior to the commencement of waste activities, submit to the Agency for its agreement a proposal for a documented Environmental Management System (EMS) for the facility. Following the agreement of the Agency, the licensee shall establish and maintain such a system. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

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

i. Schedule of Environmental Objectives and Targets

The Schedule shall address a five-year period as a minimum and shall be reviewed and submitted annually to the Agency for its agreement. The objectives should be specific and the targets measurable.

ii. Environmental Management Programme (EMP)

The EMP shall include a time-scale for achieving the Schedule of Objectives and Targets and shall comply with any other guidance issued by the Agency. The EMP shall include, as a minimum, the information specified in Schedule A: Content of the Environmental Management Programme. The EMP shall be reviewed and submitted to the Agency for its agreement annually.

iii. Corrective Action

The licensee shall establish and maintain written Corrective Action Procedures to ensure that corrective action is taken should specified requirements to this licence not be fulfilled.

iv. Awareness and Training

The licensee shall establish and maintain Awareness and Training Procedures for identifying training needs and for providing appropriate training, for personnel whose work is related to the licensed facility. Written records of training shall be maintained.

v. Communications

The licensee shall submit to the Agency for its agreement a Communications Programme to ensure that members of the public can obtain information concerning the environmental performance of the facility at all reasonable times. A community liaison committee shall also be established which will enable communication between representatives of the local residents and the licensee.

2.2 Management Structure

The licensee shall, three months prior to the commencement of construction of the facility, submit written details of the management structure of the facility for the agreement of the Agency. Any proposed changes in the management structure shall be submitted in writing to the Agency for its agreement. Written details of the management structure shall include the following information:

a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence;

b) details of the responsibilities for each individual named under a) above;

c) details of the relevant experience, competence and qualifications held by each of the persons nominated under a) above; and

d) Contingency arrangements for the absences of the named persons from the facility.

2.3 Annual Environmental Report

2.3.1 The licensee shall submit to the Agency for its agreement, within thirteen months of the date of grant of the licence, and within one month of the end of each year thereafter, an Annual Environmental Report (AER).

2.3.2 The AER shall include as a minimum the information specified in Schedule B: Content of Annual Environmental Report and shall be prepared in accordance with any relevant written guidance issued by the Agency.

2.4 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 suitably qualified and experienced deputy shall be present at all times during the operation of the facility. Both the facility manager and deputy shall successfully complete both the FAS waste management training programme (or equivalent agreed with the Agency) and associated on site assessment appraisal. Furthermore, any replacement site manager or deputy must have a similar qualification.

2.5 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and/or experience, as required and shall be aware of the requirements of this licence.

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

CONDITION 3 NOTIFICATION AND RECORD KEEPING

3.1 The licensee shall make written records of the following incidents:

a) any nuisance caused by the activity;

b) any emission which does not comply with the requirements of this licence;

c) any trigger level specified in this licence or EMS which is attained or exceeded;

d) any closures of the outlet penstock in the stormwater settlement ponds due to exceedances of the trigger levels agreed with the Agency;

e) any indication that or environmental pollution has, or may have, taken place; and,

f) any emergency.

3.2 The written record shall include all aspects described in Condition 10.9(a-e).

3.3 Unless otherwise instructed in writing by the Agency, the licensee shall:

a) notify the Agency as soon as practicable and in any case not later than 10.00 am the following working day after the occurrence of any incident;

b) submit the written record required by this condition to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident; and

c) in the event of any incident which relates to discharges to surface water, the licensee shall notify the Shannon Fisheries Board as soon as practicable by telephone and in writing (by facsimile) and in any case not later than 10:00am on the following working day after such an incident.

3.4 Should any further actions be taken after the date of written notification, as a result of an incident occurring, the licensee shall forward a written report of those actions to the Agency as soon as practicable and no later than ten days after the initiation of those actions.

3.5 Unless otherwise agreed by the Agency, all documentation submitted to the Agency shall:

(a) be sent to the Agency's headquarters;

(b) comprise one original and three copies;

(c) be formatted in accordance with any written instruction or guidance issued by the Agency;

(d) include whatever information as is specified in writing by the Agency;

(e) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;

(f) be submitted in accordance to the relevant reporting frequencies specified by this licence; and,

(g) in the case of results of any environmental monitoring, be accompanied by a written interpretation setting out their significance.

3.6 Copies of all environmental monitoring data obtained by the licensee which relates to the facility shall be forwarded to the Agency at the frequencies set out in Schedule C: Recording and Reporting to the Agency of this licence.

3.7 Unless otherwise agreed with the Agency, all documentation and records required to be made under this licence, shall be retained by the licensee.

3.8 The licensee shall provide additional copies of any documentation and records referred to in this licence to the Agency upon written request, within the time specified in writing by the Agency.

3.9 The licensee shall keep the following documents at the facility office referred to in Condition 4.9.

a) the current waste licence relating to the facility;

b) the current EMS for the facility;

c) the previous year's AER for the facility;

d) all written procedures produced by the licensee which relate to the licensed activities; and,

e) copies of environmental monitoring results and reports.

3.10 The licensee shall maintain a written record for each load of waste arriving at and leaving the facility (except for private vehicles depositing waste at the Civic Waste Facility). The licensee shall record the following:

a) the date;

b) the name of the carrier (including if appropriate, the waste carrier registration details) and the vehicle registration number;

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

d) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;

e) a description of the waste including the associated EWC codes;

f) the quantity of the waste, recorded in tonnes ;

g) the name of the person checking the load; and,

h) 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.

3.11 The licensee shall maintain a written record of the type and quantity, recorded in tonnes, of all wastes recovered or disposed of at the facility.

3.12 A written record shall be kept of each consignment of leachate removed from the facility. The record shall include the following:

a) the name of the carrier;

b) the date and time of removal of leachate from the facility;

c) the volume of leachate, in cubic metres, removed from the facility on each occasion;

d) the name and address of the Waste Water Treatment Plant to which the leachate was transported; and,

e) any incidents or spillages of leachate during its removal or transportation.

3.13 The licensee shall maintain a written record of all complaints relating to the operation of the activity. Each such record shall give details of the following:

a) date and time of the complaint;

b) the name of the complainant;

c) details of the nature of the complaint;

d) actions taken on foot of the complaint and the results of such actions; and,

e) the response made to each complainant.

3.14 The licensee shall assign and clearly label a unique reference code to each container at the Civic Waste Facility. A written record shall be kept for each load of waste departing from the facility. The following shall be recorded:

a) the date on which filling of the container commenced;

b) the date on which the container was filled;

c) the name of the carrier and the vehicle registration number;

d) the destination of the waste (facility name and waste licence/permit number as appropriate);

e) a description of the waste (if recovered or rejected waste, the specific nature of the waste);

f) the quantity of waste, recorded in tonnes;

g) the name of the person checking the load; and,

h) the time and date of departure.

3.15 Provision shall be made for the transfer of environmental information specified by the Agency, in relation to the activities carried on under this licence, to the Agency's computer system within a timescale specified in writing by the Agency.

Reason : *To provide for the notification of incidents, to update information on the activity and to provide for the keeping of records.*

CONDITION 4 SITE INFRASTRUCTURE

4.1 The licensee shall establish all infrastructure referred to in this licence prior to the commencement of the licensed activities or as instructed by the Agency. The layout of the facility and infrastructure shall be as specified on Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan", unless otherwise specified in the licence conditions.

4.2 Specified Engineering Works

4.2.1 The licensee shall submit written proposals for all Specified Engineering Works, as defined in Schedule D: Specified Engineering Works, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.

4.2.2 All specified engineering works shall be supervised by a competent person(s) agreed in advance by the Agency and that person, or persons, shall be present at all times during which relevant works are being undertaken.

4.2.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall

be made available to the Agency on request. The report shall include the following information;

a) a description of the works;

b) as-built drawings of the works;

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

d) where relevant a drawing and sections showing the location of all samples and tests carried out;

e) where relevant daily records sheets/diary;

f) name(s) of contractor(s)/individual(s) responsible for undertaking the 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; and

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

4.3 Site Notice Board

4.3.1 Prior to the commencement of construction activities at the facility the licensee shall provide and maintain a Site Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the identification board shall be 1200 mm by 750 mm.

4.3.2 The board shall clearly show:

a) the name and telephone number of the facility;

b) the normal hours of opening;

c) the name, address and telephone number of the licence holder;

d) an emergency out of hours contact telephone number;

e) the name, address and telephone number of the operator of the facility;

f) the licence reference number; and,

g) where and when environmental monitoring information relating to the facility can be obtained.

4.4 Site Security

4.4.1 Within one month of commencement of construction activities at the facility, security and stockproof fencing and gates shall be installed and maintained at the facility. Fencing shall be installed around the internal perimeter of the buffer zone as shown on Figure No.1 of the Article 16 reply dated July 2000 in the application (1:5000 Layout showing buffer zone and retained forestry around the proposed facility), waste activities, the site access roads and the stormwater settling ponds. Fixed markers rather than fencing shall be erected to indicate the boundary of the facility.

4.4.2 The fencing shall be as specified in Drawing No. 99-01005.09.Rev.A “Detail Sheet 3 of 3” and shall be modified as appropriate to prevent access of livestock and wildlife. The security gates shall be at the location shown on Drawing No. 99-01005.03.Rev.B “1:2500 Site Layout Plan”. The base of the fencing shall be set in the ground.

4.4.3 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 operational day; and,

b) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days or as otherwise agreed with the Agency.

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

4.4.5 Prior to the acceptance of waste at the facility Closed Circuit Television (CCTV) shall be installed as described in Attachment D.1(a) at the locations shown on Drawing No. 99-01005.12.Rev.A "Site Services Layout".

4.5 Tree Clearance and Soil Storage

4.5.1 The buffer zone as shown on Figure 1 (1:5000 Layout showing buffer zone and retained forestry around the proposed facility) of the Article 16 reply dated the July 2000 in the application shall be kept intact. The existing forestry in the buffer zone shall be maintained and managed to maximise biodiversity.

4.5.2 Trees shall only be felled on a phased basis to facilitate the next stage of cell development, the felling of trees shall only be undertaken outside the breeding season for birds and the nesting sites for owls and birds of prey shall be fully protected, as described in the Article 13 reply dated June 2000.

4.5.3 Soils shall be removed and stored in the manner as described in the Agency's Landfill Manual on "Landfill Restoration and Aftercare". The storage of soils shall be in such a manner to maximise the preservation of the soil structure for future use within the facility.

4.5.4 Soils removed during site preparation other than those to be reused for site construction purposes shall be stored at the location referred to as "Temporary Storage Area for Excavated Soil" in Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan", unless otherwise agreed with the Agency.

4.6 Facility Boundary / Perimeter and Enhancement Planting

4.6.1 Apart from the removal of hedgerow to facilitate the facility entrance and road realignment, the existing hedgerow network which forms the boundary of the facility shall be retained by the licensee, unless otherwise agreed with the Agency.

4.6.2 The existing hedgerows and buffer zone of trees shall be managed and enhanced to minimise the views of the facility from the surrounding countryside.

4.6.3 Subject to fire safety requirements, the existing fire breaks shall be screened by bunds or where possible replanted to prevent views of the facility from the surrounding countryside.

4.6.4 A perimeter bund shall be constructed at the facility as described in Attachment D.2(f) and (l) of the waste licence application. The bund shall be constructed to mitigate against visual intrusion and noise from landfilling activities; the bund shall be planted with grass and shrubs to minimise their visual impact on surrounding countryside.

4.7 Access Road (N85)

4.7.1 No development works shall be carried out at the facility until the road improvements to realign the N85 adjacent to the site entrance and the installation of road signage as described in (a) Attachment D.1(j) of the Waste Licence Application, (b) Figure 2.7 of the EIS and (c) Description of the proposed development items 4, 5 and Drawing No. R/2000/07RevA (N85 Road

Improvements at BallyduffBeg, Inagh) of the Article 13 reply dated March 2000, have been carried out. The licensee shall consult with the National Roads Authority on the improvements in road signage and road safety and carry out any works recommended.

4.7.2 Traffic awaiting access to the landfill shall queue along the facility site access road only.

4.8 Site Roads and Hardstanding

4.8.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility. The site access roads, internal haul roads and hardstanding areas shall be provided and maintained to the specifications described in Attachment D.1(b) and (c) of the Waste Licence application and as specified and shown on Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan" and Drawing No.99-01005.08.Rev.B "Detail Sheet 2 of 3".

4.8.2 All clean water from paved roads, roofed areas and car parking areas shall drain into a constructed swale for discharge to the perimeter watercourse as shown on Drawing No.99-01005.09.Rev.A "Detail Sheet 3 of 3" and Drawing No.99-01005.12.Rev.A "Site Services Layout".

4.8.3 Traffic control including signage within the facility shall be in accordance with Attachment D.1(j) of the Waste Licence Application.

4.8.4 A livestock grid shall be installed and maintained across the entrance to the facility.

4.9 Office and Site Buildings

4.9.1 The licensee shall provide and maintain an Administration Building [office], Weighbridge Control House, Car Park, Chemical Storage Shed and Maintenance Building on the facility. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation. The buildings on site shall be constructed as specified on the following drawings:

a) Drawing No. 99-01005.13.Rev.A "Administration Building";

b) Drawing No. 99-01005.14.Rev.A "Weighbridge Office Building";

c) Drawing No. 99-01005.15.Rev.A "Chemical Storage Shed"; and,

d) Drawing No. 99-01005.16.Rev.A "Maintenance Building".

4.9.2 The licensee shall provide and maintain a working telephone and facsimile machine in the office specified in Condition 4.9.1.

4.10 Inspection / Quarantine Bay

4.10.1 The licensee shall provide and maintain an Inspection Bay / Quarantine Bay in accordance with the details provided in Drawing No. 99-01005.08.Rev.B "Detail Sheet 2 of 3".

4.10.2 The licensee shall ensure that these areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The waste inspection area and the waste quarantine area shall be suitably and clearly segregated from each other.

4.10.3 Drainage from these areas shall be directed to the leachate lagoon as shown in Drawing No. 99-01005.12.Rev.A “Site Services Layout”.

4.11 The licensee shall provide, maintain and calibrate a weighbridge at the facility. Unless otherwise agreed with the Agency the location of the weighbridge shall be as shown on Drawing No. 99-01005.03.Rev.B “1:2500 Site Layout Plan”.

4.12 Wheel Cleaner

4.12.1 The licensee shall establish and maintain a wheel cleaner at the facility in accordance with the specification for the dry wheel shake out unit shown in Drawing No. 99-01005.09.Rev.A “Detail Sheet 3 of 3”.

4.12.2 The wheel cleaner 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 cleaner. Prior to the construction of the leachate lagoon accumulated liquid in the wheel cleaner shall be tankered off-site to an appropriate facility. Following construction of the leachate lagoon the wheel cleaner water shall drain only to the lagoon. Silt, stones and other accumulated material shall be removed as required from the wheel cleaner and disposed of at the working face or to a skip (during construction).

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

4.14 Waste Water

4.14.1 The licensee shall provide and maintain a small scale waste water treatment plant (referred to in the waste licence application as a bio-treatment plant) at the facility for the treatment of sewage arising on-site. The plant shall satisfy the design criteria set out in the Agency’s manual on “Treatment Systems for Single Houses”. The outlet from the treatment plant shall discharge to the leachate lagoon.

4.14.2 During construction all sewage arising on site shall be collected and disposed of off-site at a suitable Waste Water Treatment Plant.

4.15 Storage Areas

4.15.1 The licensee shall provide and maintain a bunded fuel storage area at the facility.

4.15.2 Fuels and oils shall only be stored at the following locations:

a) the bunded fuel storage area referred to in Condition 4.15.1.

b) in two bunded fuel tanks to be located in the Maintenance Building as described in Attachment D.1(g) of the Waste Licence Application.

c) in a bunded tank for waste oil at the Civic Waste Facility.

4.15.3 All tank and drum storage areas shall be rendered impervious to the materials stored therein. In addition, tank and drum storage areas shall, as a minimum be bunded, either locally or remotely, to a volume not less than the greater of the following:

(a) 110% of the capacity of the largest tank or drum within the bunded area; or

(b) 25% of the total volume of substance which could be stored within the bunded area.

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

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

4.15.6 The integrity and water tightness of all the bunds, tanks and containers and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated by the licensee and shall be reported to the Agency following its installation and prior to its use as a fuel storage area. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. The licensee shall also submit to the Agency for its agreement in each case a written report on the storage of fuels at the facility. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.

4.15.7 All tanks and containers, including tankers used to transport leachate from the facility, shall be labelled to clearly indicate their contents.

4.16 Landfill Lining:

4.16.1 The area within which landfilling of waste is carried out shall be such that there is a minimum 110m of a buffer zone between the landfill footprint (area being filled) and the facility boundary in which no waste shall be infilled.

4.16.2 The liner system for all cells within the landfill area shall comprise of the following:

(i) be a composite liner consisting of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to $1x10^{-9}$m/s constructed in a series of compacted lifts no thicker than 250mm when compacted overlain by a 2mm thick high density polyethylene (HDPE) layer;

(ii) incorporate a protection layer consisting of a geotextile layer to be placed over the HDPE layer. The drainage layer to be placed over the geotextile layer shall comprise a 500mm layer with minimum hydraulic conductivity of 1×10^{-3} m/s and shall be pre-washed, uncrushed, granular, rounded stone (16 - 32mm grain size). The licensee shall ensure that the drainage layer is compatible with and does not compromise the integrity of the HDPE liner. The side walls shall be designed and constructed to achieve an equivalent protection.

4.16.3 Formation levels of the cells shall be as shown on Figure 2.12 “Typical Cross Section (X-X)” of the EIS.

4.16.4 The lining system within the leachate storage lagoon shall be as described in Attachment D.3 “Liner System” of the Waste Licence Application and as specified on Drawing No. 99-01005.07.Rev.A “Detail Sheet 1 of 3”. The lagoon lining shall be a composite liner consisting of

a) an upper component of a flexible membrane liner. At minimum a 2mm HDPE or equivalent flexible membrane liner should be used; and

b) a lower component of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to $1x10^{-9}$m/s constructed in a series of compacted lifts no thicker than 250mm when compacted.

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

4.17 Leachate Management

4.17.1 The licensee shall provide a Leachate Lagoon at the location shown on Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan".

4.17.2 The leachate management at the facility shall be carried out as described in Attachment D.4 of the Waste Licence Application and as specified in Drawings No. 99-01005.07.Rev.A "Detail Sheet 1 of 3" and Drawing No. 99-01005.11.Rev.A "Leachate Lagoon".

4.17.3 Leachate levels in the filled waste shall not exceed a level of 1.0m over the HDPE liner.

4.17.4 All leachate management structures on-site shall be inspected and certified fit for purpose on an annual basis by an independent and appropriately qualified chartered engineer.

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

4.17.6 Leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers and transporting to Ennis Waste Water Treatment Plant, when upgraded, or other appropriate plant agreed with the Agency. The frequency of leachate removal/discharge from the leachate lagoon shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoon at all times.

4.17.7 The licensee shall submit to the Agency for its agreement prior to the use of the leachate storage lagoon Operational Procedures for the handling of leachate which include (1) procedures for the handling of leachate during removal from the lagoon and subsequent transport/discharge to the Ennis Waste Water Treatment Plant or other agreed plant and (2) monitoring infrastructure details and procedures for monitoring the level of leachate in the pump sumps, the cells and the lagoon.

4.17.8 Recirculation of leachate or other contaminated water shall not be undertaken without the prior agreement of the Agency and shall only be undertaken within cells which have been lined and capped to the satisfaction of the Agency.

4.17.9 Subject to Condition 4.17.6, the licensee shall submit to the Agency a report confirming that; (a) the Waste Water Treatment Plant in Ennis is adequately able to treat the leachate and (b) that the necessary improvement works have been carried out as indicated in the Article 14 reply dated March 2000 in the application.

4.17.10 Within twelve months of the date of grant of this licence, the licensee shall submit to the Agency a feasibility study on the treatment of leachate on site.

4.18 Landfill Gas Management:

4.18.1 A Landfill Gas Flare and associated infrastructure shall be installed on the facility within six months of the date on which waste is first disposed of at the facility. The flare shall be of an enclosed type design and shall comply with the emission limits in Schedule F.

4.18.2 Flare unit efficiency shall be tested once it is installed and once every three years thereafter.

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

4.18.4 All buildings constructed on the facility shall have regard to the guidance given in the Department of Environments 1994 publication "Protection of New Buildings and Occupants from Landfill Gas" and any subsequent revisions.

4.18.5 Until the operation of the landfill gas flare, passive landfill gas management at the facility shall be carried out. Landfill gas management and infrastructure shall meet the recommendations given in the Agency Manual on "Landfill Operational Practices". All vents installed to facilitate passive gas venting shall be fitted with an effective activated carbon filter.

4.18.6 Within twelve months of the date of grant of this licence the licensee shall submit an assessment of whether the utilisation of landfill gas as an energy resource is feasible. If feasible such a system shall be installed within a timeframe agreed with the Agency. This assessment shall include proposals regarding the utilisation of heat energy from this plant at other premises / facilities at and in the vicinity of the facility.

4.18.7 Perimeter landfill gas monitoring boreholes shall be constructed at 45m intervals around the periphery of the area being filled. The construction of the boreholes shall be phased so as to match the phased development of cells. The construction of the boreholes shall be as specified in Figure J.4.1 of the Waste Licence Application.

4.19 Capping and Cover

4.19.1 Daily cover and intermediate capping shall consist of the following: Subsoils and other excavation waste or construction industry waste such as bricks and crushed broken concrete. The material should be free draining and preferably of low clay content. Daily cover should be 150mm in depth, while intermediate capping should be 300mm in depth. Alternative daily cover shall only be used with the prior agreement of the Agency.

4.19.2 Final capping shall consist of the following:

a) top soil (150 -300mm);

b) subsoils, such that total thickness of top soil and subsoils is at least 1m;

c) drainage layer of 0.5m thickness having a minimum hydraulic conductivity of $1x10^{-4}$ m/s;

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. GCL) or similar that provides equivalent protection; and

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

4.19.3 Filled cells shall be permanently capped to the specifications agreed with the Agency in accordance with Condition 4.19.2 within twelve months of the cells having been filled to the required level.

4.19.4 The licensee shall maintain a stockpile of capping materials at the facility containing the requisite volume of capping materials for a six-month period.

4.20 Surface Water Management

4.20.1 The licensee shall ensure effective control of surface water run off from the facility during construction, operation and restoration.

4.20.2 Surface water management at the facility shall be carried out as described in Attachment H.9 of the Waste Licence Application.

4.20.3 The storm water settling ponds shall be capable of fulfilling the requirements of this licence and dealing with all surface water run-off at the facility. The layout of the surface water management system shall be as specified in Drawing No. 99-01005.12.Rev.A "Site Services Layout" and Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan".

4.20.4 The design of the swales, silt fences and the two stormwater settling ponds shall be as specified in Drawings No 99-01005.09.Rev.A "Detail Sheet 3 of 3" and Drawing No. 99-01005-10.Rev.A "Stormwater Settling Ponds".

4.20.5 The lining of the stormwater settling ponds shall be as specified for the leachate lagoon in Condition 4.16.4.

4.20.6 The outlet from the stormwater settling ponds shall incorporate a penstock for preventing surface water discharges in the event that monitoring should indicate contamination of the surface water.

4.20.7 All surface water from hardstanding areas must pass through a Class 1 Full Oil Interceptor prior to reaching the stormwater settling ponds.

4.20.8 The licensee shall ensure protection of the surface water resources within and in the vicinity of the facility during construction of the surface water management infrastructure and stormwater settling ponds. During construction works silt fences must be provided in all drainage channels to prevent erosion of soil and sediment into the streams.

4.20.9 The stormwater settling ponds and surface water management infrastructure shall be constructed and operational prior to the commencement of other construction works.

4.20.10 On construction of the surface water management infrastructure, clean surface water from the facility shall only be discharged to the perimeter streams from the stormwater settling ponds as shown in Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan".

4.21 Groundwater Management

4.21.1 Groundwater management at the facility shall be carried out as described in Attachment C.6 and H.6 of the application.

4.22 Recycling and Recovery Area.

4.22.1 The construction and demolition waste recovery area shall be as specified in Drawing No. 99-01005.12.Rev.A "Site Services Layout".

4.22.2 The licensee shall establish the Civic Waste Facility infrastructure referred to in Attachment D.1(p) of the waste licence application, and shall provide and maintain appropriate receptacles for the collection of recoverable or recyclable material. All receptacles shall be clearly labelled to indicate their contents.

4.22.3 All composting shall be carried out on an impermeable concrete slab which drains only to the leachate lagoon.

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

CONDITION 5 WASTE MANAGEMENT

5.1. Three months prior to waste acceptance at the facility, the licensee shall submit to the Agency for its agreement site specific written procedures for site staff on the acceptance and handling of all wastes. Unless otherwise agreed with the Agency, these procedures shall be based on the information submitted on waste acceptance in Attachment E.2.1 of the application and any guidance issued by the Agency.

5.2. Each load of waste arriving at the facility shall be visually inspected prior to unloading in accordance with "Level 3: On-site verification" outlined in the Agency's Draft Manual on Waste Acceptance. In addition, all wastes shall be checked at the working face to ensure that they comply with the requirements of the licence. Any wastes deemed to be in contravention of this licence shall be removed to the quarantine area prior to recovery or disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area and removed as soon as practicable to a suitable authorised facility. A record of all inspections shall be maintained on a daily basis.

5.3. The disposal of waste in any new cell cannot commence without the prior agreement of the Agency.

5.4. Scavenging shall not be permitted at the facility.

5.5. Unless the prior agreement of the Agency is given, the following shall apply at the landfill:

a) only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials;

b) the working face of the landfill shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and 25 metres in length and have a slope no greater than 1 in 3; and,

c) all waste deposited at the working face shall be compacted and covered as soon as is practicable and at any rate prior to the end of the operational day.

5.6. The working face of the operational cell shall, at the end of each day, be covered with material suitable to minimise any nuisances occurring. 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 operational day.

5.7. The landfill shall be filled in accordance with the five-phase sequence outlined in Figure 2.4 of Volume 2 of the EIS.

5.8. Three months prior to waste acceptance at the facility, the licensee shall submit to the Agency for its agreement site specific written procedures for site staff on the acceptance and handling of all non-hazardous sludge and procedures to ensure that only non-hazardous industrial sludge is accepted at the facility. Testing shall be performed on a minimum of two samples per annum for all industrial sludges/solids accepted at the facility and the results submitted to the Agency on an annual basis. This testing shall include sludge eluate and toxicity testing by standardised and internationally accepted procedures and carried out by a competent laboratory.

5.9. A steel-wheeled compactor shall be used for compacting all waste other than that used for restoration or construction purposes.

5.10. In order to prevent the formation of voids, all large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.

5.11. Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over without prior agreement from the Agency.

5.12. No smoking shall be allowed on the facility other than in the administration building and weighbridge office as shown on Drawing No. No. 99-01005.03.Rev.B "1:2500 Site Layout Plan.

5.13. Waste Recovery

Within nine months of the commencement of waste activities at the facility, a report examining increasing recovery provisions and reducing the annual tonnage of waste deposited at the landfill shall be submitted to the Agency for its agreement. This report shall address provisions for the following:

a) the separation of recyclable materials from the waste;

b) the recovery of metal waste and white goods including written procedures for the de-gassing of CFC's from refrigerators;

c) the recovery of commercial waste, including cardboard;

d) composting of biodegradable or green waste at the facility having regard to good practice and sustainability;

e) storage of recyclable materials;

f) reduction of the quantity of non-hazardous industrial sludge disposed to landfill and the total prohibition of the disposal of non-hazardous industrial sludge at the facility from the 1st July 2009; and

g) measures to meet the targets set in the Waste Management Plan and the Waste Policy Document from the Department of the Environment and Local Government entitled "Changing our Ways".

5.14. Waste sent off-site for recovery or disposal shall only be conveyed by a waste contractor agreed by the Agency. The ultimate recovery or disposal facility for all wastes shall be agreed in advance with the Agency. All wastes removed off-site for recovery or disposal shall be transported from the facility to the consignee in a manner which will not adversely affect the environment.

5.15. Construction and Demolition Waste Storage Area

5.15.1. Only construction and demolition waste or other inert material shall be accepted at the construction and demolition waste storage area. Materials which are capable of being recovered for re-use or recycling shall be extracted from the waste. Materials recovered in this way shall be stored temporarily in containers prior to removal from this area.

5.16. Composting Area

5.16.1. Only source separated organic waste and green waste shall be accepted at this facility. The quantity of waste composted shall not exceed 2,000 tonnes per annum.

5.16.2. The Composting Facility shall be provided and operated in accordance with the Article 13 reply dated March 2000.

5.16.3. The compost windrows shall be covered with Top Tex Cover or equivalent at all times except when biodegradable waste including bulking agents are being

added to the windrows, when moisture content of the windrow is being supplemented or when the compost is being mixed.

5.16.4. All putrescible waste accepted to the composting unit shall be introduced into the compost process or made into a windrow within 24 hours of delivery.

5.16.5. No waste shall be left on the reception area from the close of operation on Saturday until Monday morning opening.

5.16.6. A windrow turner shall be used to ensure proper turning and aeration of the windrows.

5.16.7. Waste shall attain a temperature of 55 ^{o}C or greater for at least 15 days during the composting period. During the high temperature period, the windrow shall be turned at least five times.

5.16.8. The compost produced must achieve the requirements set out in *Schedule H: Compost Quality* of this licence.

5.16.9. The licensee shall maintain a daily written record of temperature and turning of the compost.

5.16.10. The entire compost area must be bunded and all drainage shall drain to the leachate lagoon.

5.17. Waste Recycling and Recovery Area

a) The waste recycling and recovery area shall be provided and maintained in accordance with Attachment D.1(p) of the Waste Licence Application.

b) All tipping of waste will be into receptacles, or in the case where inspection is required, into a designated inspection area.

5.18. The licensee shall submit detailed procedures for the deposition of ash at the facility. These procedures must include details of the method of deposition and arrangements to control emissions from the ash. No ash shall be accepted at the facility without the prior agreement of the Agency.

Reason: *To provide for the acceptance and management of wastes authorised under this waste licence.*

CONDITION 6 ENVIRONMENTAL NUISANCES

6.1. The licensee shall ensure that vermin, birds, flies, mud, dust and odours do not give rise to nuisance at the facility or the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution or contravene any national statutory protection granted in respect of protected species.

6.2. The licensee shall ensure that the activities shall be carried out in a manner such that odours do not result in significant impairment of, or significant interference with amenities or the environment beyond the facility boundary.

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

6.4. 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. Prior to exiting the facility, all waste and construction related vehicles shall use the wheel cleaner.

6.5. Litter Control

6.5.1. The measures and infrastructure as described in Section 2.9.3.5 of Volume 2 of the EIS shall be applied to control litter at the facility.

6.5.2. Prior to the disposal of any waste in any cell litter fencing shall be installed and maintained around the perimeter of the active tipping area. The netting shall meet the guidance given in the Agency's Manual on "Landfill Operational Practices" and be as specified in Drawing No. 99-01005.08.Rev.A "Detail Sheet 2 of 3". The height of the netting shall be minimised so as to not cause visual intrusion, the netting shall be kept tidy and litter trapped in the netting shall be removed as soon as practicable.

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

a) a temporary repair shall be made by the end of the operational day; and,

b) a repair to the standard of the original netting shall be undertaken within three working days or as otherwise agreed with the Agency.

6.5.4. Within three months of the date of grant of this licence the licensee shall submit to the Agency for its agreement procedures on the operation of the facility in adverse wind conditions.

6.5.5. A daily litter patrol shall be carried out and all loose litter accumulated within the facility and its environs, excluding that which is deposited on the working face, shall be removed subject to the agreement of the landowners and appropriately disposed of on a daily basis.

6.6. Any waste placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be removed by the licensee immediately and in any event by 10:00am of the next working day, after such waste is discovered. Such waste shall be disposed of at an appropriate facility.

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

6.8. Dust Control

6.8.1. In dry weather, site roads and any other areas used by vehicles shall be sprayed with water as and when required to minimise airborne dust nuisance. A mobile water bowser and water sprayer shall be kept on site for dust control. From the commencement of construction activities these Dust Control Measures shall be implemented at the facility.

6.9. Vermin Control

6.9.1. The licensee shall apply the insect and rodent control measures outlined in Section 2.9.3.7 of Volume 2 of the EIS. Notwithstanding these measures prior to the commencement of waste activities, the licensee shall submit to the Agency for its agreement a programme for the control and eradication of insect and rodents infestations at the facility. This programme should include as a minimum the following:

a) details on the insecticides(s) and rodenticides(s) to be used;

b) operator training;

c) mode and frequency of application and measurers to contain sprays at the facility boundary; and.

d) mitigation plan to ensure that rodenticide usage follows international recommendations in relation to the protection of owls as outlined in the Article 13 reply dated June 2000.

6.9.2. A written record shall be kept at the facility of the programme for the control and eradication of vermin and fly infestations at the facility. These records shall include as a minimum the following:

a) the date and time during which spraying of insecticide is carried out;

b) contractor details;

c) contractor logs and site inspection reports;

d) details of the rodenticide(s) and insecticide(s) used;

e) operator training details;

f) details of any infestations;

g) mode, frequency, location and quantity of application; and,

h) measures to contain sprays within the facility boundary.

6.10. Bird Control

6.10.1. Birds shall be prevented from gathering on and feeding at the facility by the use of birds of prey or other bird scaring techniques, following consultation and approval from Duchas. The birds of prey and other techniques shall be in place on the facility at least two weeks prior to any waste being disposed of and shall maintain their presence every day, from before dawn to after dark, until the waste activities cease and all the waste is capped to the written satisfaction of the Agency. The use of gas operated bird scaring devices is prohibited at the facility, unless otherwise agreed with the Agency. A written record of the daily bird control activities and the numbers of birds observed on the facility shall be kept.

Reason: *To provide for the control of nuisance.*

CONDITION 7 EMISSIONS AND ENVIRONMENTAL IMPACTS

7.1 No specified emission from the facility shall exceed the emission limit values set out in *Schedule F: Emission Limits* of this licence. There shall be no other emissions of environmental significance.

7.2 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.

7.3 The licensee shall ensure that the activities shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.

7.4 Noise

7.4.1 There shall be no clearly audible tonal component in the noise emissions from the activity at the facility boundary.

7.4.2 As outlined in the Article 13 reply dated March 2000 and the Article 16 reply dated July 2000 in the application, and in order to mitigate against noise emission the licensee shall

a) specify low sound level plant for use on site;

b) implement a planned maintenance programme for on-site mobile plant;

c) impose speed restrictions on internal site roads; and,

d) fit all heavy machinery used on-site with acoustic panels in the engine bays and acoustic mufflers (exhaust silencers).

7.5 Landfill Gas

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

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

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

7.5.2 The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of :-

a) in the case of landfill gas flare:

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

b) in the case of landfill gas combustion plant:

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

7.5.3 Emission limits for emissions to atmosphere in this licence shall be interpreted in the following way:-

(i) 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.

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

(ii) 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.

(iii) For flow, no hourly or daily mean value shall exceed the emission limit value.

7.6 Emissions to Surface Water

7.6.1 No raw leachate, treated leachate or contaminated surface water shall be discharged to Inagh River catchment.

7.6.2 All surface water emissions at the facility shall only be made to the tributary streams of the Inagh River at the two locations marked on Drawing No. 99-01005.03.Rev.B "1:2500 Site Services Layout". Surface water emissions shall only be made via the outlet from the stormwater settling ponds following settlement therein.

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

7.7 There shall be no direct emissions to groundwater.

7.8 Disposal of Leachate

7.8.1 Any leachate or other contaminated water removed from the facility shall be transported to Ennis Wastewater Treatment Plant or to another treatment plant whose name and location has been agreed in advance by the Agency.

7.9 The trigger levels for PM_{10} from the facility measured at any location on the boundary of the facility are: PM10 greater than 50 µg/m3 for a daily sample.

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

CONDITION 8 RESTORATION AND AFTERCARE

8.1. The height of the landfill shall not exceed 97.6m OD (2.6m above the highest point of the existing ground profile).

8.2. Within eighteen months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement a detailed Restoration Plan (including Aftercare) for the facility. The plan shall be based on the information submitted as Attachment G of the waste licence application and Figure 2.12 "1:2,500 Proposed Final Profile" of Volume 2 of the EIS. The final profile of the facility shall be a domed profile to minimise rainwater infiltration. The plan shall include a drawing showing the proposed final profile of the facility and details of the landfilling to achieve these contours. The plan shall have regard to the guidance published in the Agency's Landfill Manual on "Landfill Restoration and Aftercare".

8.3. Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate. Any depressions arising after profiling shall be rectified by the emplacement of suitable capping or restoration materials.

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

8.5. Where tree planting is proposed to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Topsoil and subsoil depths shall be a minimum of 1m unless otherwise agreed in advance with the Agency.

8.6. Filled cells shall be permanently restored to the specifications agreed with the Agency in accordance with Condition 8.2 within eighteen months of the cells having been filled to the required level.

Reason: *To provide for the restoration and aftercare of the facility.*

CONDITION 9 ENVIRONMENTAL MONITORING

9.1. The licensee shall carry out such monitoring and at such locations and frequencies as set out in Schedule E: Monitoring and as specified in the Conditions of this licence.

9.2. Prior to the commencement of waste disposal activities, the licensee shall install a permanent gas monitoring system in the site office and any other enclosed structures at the facility.

9.3. Subject to the agreement of the well owners, all private wells within (a) 100m upgradient of the facility and (b) all private wells 500m downgradient of the facility, shall be included in the monitoring programme set out in Schedule E Monitoring. Copies of the results of all monitoring, along with an interpretation of the results and details of any necessary corrective actions, shall be forwarded to the respective well owners or users as soon as such results become available.

9.4. The licensee shall monitor leachate levels within each cell and in the leachate lagoon.

9.5. The licensee shall implement a continuous monitoring programme for water quality in the stormwater settling ponds. This programme shall have regard to the criteria/trigger levels which will determine when the penstock in the outlet from the stormwater settling ponds shall be closed. Such continuous monitoring shall, as a minimum, include conductivity, pH and TOC and shall be carried out on the inlet to the stormwater settling ponds and fulfil the requirements of Schedule E.5 Surface Water Monitoring.

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

9.7. Archaeological Monitoring/Survey

9.7.1. During the excavation of subsoil for site development/preparation works, the licensee shall ensure that the presence of archaeological remains is monitored and recorded by a qualified archaeologist. In the event that any features/artefacts of archaeological value are unearthed the licensee shall take the appropriate precautions to ensure these features/artefacts are surveyed to an appropriate level of detail. The National Museum, Dúchas and the Agency shall be informed of any such finds as soon as possible after the find.

9.7.2. The scope of any archaeological investigations and /or mitigation measures shall be agreed in advance with Dúchas.

9.8. Telemetry

9.8.1. A telemetry system shall be installed and maintained at the facility. This system shall include for;

a) recording of leachate levels in the lined cells and lagoon.

b) recording of levels in the surface water lagoon and flows to the perimeter streams.

c) quality of the surface water at the inlet to the surface water lagoons and being discharged to the perimeter streams.

d) permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.

9.9. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and off-site points as required by the Agency. All ditches and drains located around the perimeter of the facility are to be kept clear such that monitoring can be carried out successfully.

9.10. The licensee shall maintain all sampling and monitoring points, and clearly label and name (including national grid number) all sampling and monitoring locations, so that they may be used for representative sampling and monitoring. All on-site monitoring points as described in Condition 9.1 shall be tagged on site with their agreed sampling point codes during the installation of the monitoring points.

9.11. Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers instructions (if any) so that all monitoring results accurately reflect any emission or discharge or environmental parameter.

9.12. The licensee shall amend the frequency, locations, methods and scope of monitoring, sampling, analyses and investigations only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.

9.13. Within two months of the date of grant of the licence the following information shall be submitted to the Agency for its agreement: the names and qualifications of all persons who carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring. Any proposed changes to the above shall be submitted in writing to the Agency for its agreement.

9.14. A topographical survey including the void space shall be carried out within six months of the date of the deposition of waste in Phase 1. It shall be repeated annually thereafter. The survey shall be in accordance with any written instructions issued by the Agency.

9.15. An annual ecological / biological assessment of the following adjoining habitats shall be undertaken;

a) Sampling points AE1, AE2, AE3, AE4 and AE5 on Streams 1, 2 and 3 as shown on Drawing No. 99-01005.03.Rev.B “1:2500 Site Layout Plan”, and additionally a sampling point on Stream 2 downstream of the landfill (AE6);

b) The Inagh River upgradient and downgradient of the confluence with the streams referred to above;

c) Lough Acorraun; and

d) The buffer zone.

The assessment of the streams and Inagh River shall use appropriate biological methods such as the EPA Q-rating system for the assessment of rivers and streams. Surveys of the buffer zone shall be carried out during the breeding season for birds using the methods developed for the Countryside Bird Survey, in addition the buffer zone and nearby coniferous plantations shall be surveyed for the presence of Hen Harriers. The report shall include a drawing showing the location of monitoring points, each identified by a unique number and a twelve figure grid reference and shall include assessment of the impact of the development of the landfill on the existing baseline ecology. The scope and content of the assessment and details of the contractor carrying out the assessment shall be submitted to the Agency for its agreement prior to the assessment.

9.16. Monitoring infrastructure which proves to be unsuitable for its purpose shall be replaced within three months of monitoring results indicating that the monitoring infrastructure is damaged or unsuitable. All existing boreholes shall be fitted with standpipes to prevent surface water ingress.

9.17. Within six months of the deposition of waste in Phase 1, and annually thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility and provide a report on that assessment to the Agency.

9.18. Prior to the commencement of waste activities, the licensee shall submit to the Agency for its agreement an updated appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. This drawing shall be an updated version of the 1:2500 Site Layout Plan titled Drawing No. 99-01005.03. The drawing shall include the twelve figure National Grid References for the various monitoring points.

9.19. 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 environmental monitoring data generated as a result of this licence.

Reason: *To ensure compliance with the requirements of other conditions of this licence by provision of a satisfactory system of measurement and monitoring of emissions.*

CONDITION 10 CONTINGENCY ARRANGEMENTS

10.1. The licensee shall, within six months of the date of grant of this licence, submit a written Emergency Response Procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment.

10.2. Contingency Arrangements for the facility shall be as detailed in Attachment K.1 of the application.

10.3. The licensee shall carry out a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities and shall, within six months from the date of grant of this licence submit a report, including recommendations on the risk assessment to the Agency for its agreement. The Fire Authority shall be consulted by the licensee during this assessment.

10.4. 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.

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

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

10.7. In the event that monitoring of local wells (identified in Condition 9.3) indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an incident. The licensee shall supply an alternative equivalent supply of water to those affected.

10.8. In the event that monitoring should indicate contamination of the water in the stormwater settling ponds, the outlet penstock shall be closed and the contaminated water shall be pumped to the leachate lagoon until such time as the source of the contamination has been identified and appropriate measures introduced to prevent further contamination of surface water.

10.9. Unless otherwise notified in writing by the Agency, in the event that any monitoring, sampling, complaints or observations indicate that an incident has, or may have, taken place, the licensee shall immediately:

a) identify the date, time and place of the incident;

b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission;

c) isolate the source of the emission;

d) evaluate the environmental pollution, if any, caused by the incident;

e) identify and execute measures to minimise the emissions/malfunction and the effects thereof;

f) provide a proposal to the Agency for its agreement within one month to:

i) identify and put in place measures to avoid reoccurrence of the incident; and

ii) identify and put in place any other appropriate remedial action.

10.10. In the event that monitoring of the side slopes of the facility indicate that there may be a risk of slope failure, this will be treated as an incident and a proposal for remediation action submitted to the Agency for its agreement within one month of the date of the monitoring being carried out.

10.11. After construction of the facility, or part thereof, and prior to the disposal of any waste in the facility or part thereof, and prior to the use of any infrastructure at the facility, an independent third party shall carry out a risk assessment of the facility, or part thereof, as agreed in advance with the Agency. The risk assessment shall pay particular regard to any accidents, emergencies, or other incidences which might occur on the facility and their effect on the environment and on the neighbours of the facility and on adjoining landuses. The assessment and recommendations, including a timescale for implementation, shall be submitted to the Agency for agreement. The agreed recommendations shall be implemented within the agreed timescales.

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

CONDITION 11 CHARGES AND FINANCIAL PROVISIONS

11.1 Agency Charges

11.1.1 The licensee shall pay to the Agency an annual contribution of £19,183 (€24,358) or such sum as the Agency from time to time determines, towards the cost of monitoring the activity or otherwise in performing any functions in relation to the activity, as the Agency considers necessary for the performance of its functions under the Waste Management Act, 1996. The licensee shall in 2002 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Public Sector Average Earnings Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2001, the licensee shall pay a pro rata amount from the date of this licence to 31st December 2001. This amount shall be paid to the Agency within one month of the date of grant of this licence.

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

11.2 Financial Provision for Closure, Restoration and Aftercare

11.2.1 The licensee shall from a date to be set by the Agency establish and maintain a fund, or written guarantee, that is adequate to assure the Agency that the licensee is at all times financially capable of implementing the Restoration and Aftercare Plan required by Condition 8.2. The type of fund and means of its release/recovery shall be agreed by the Agency prior to its establishment.

11.2.2 The fund shall be maintained in an amount always sufficient to underwrite the current Restoration and Aftercare Plan.

11.2.3 The licensee shall revise the cost of restoration and aftercare annually and any details of the necessary adjustments to the fund must, within two weeks of the revision, be forwarded to the Agency for its agreement. Any adjustment agreed by the Agency shall be effected within four weeks of said written agreement.

11.2.4 Unless otherwise agreed any revision to the fund shall be computed using the following formula:

$$Cost = (ECOST \times WPI) + CiCC$$

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.

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

SCHEDULE A :Content of the Environmental Management Programme

Environmental Management Programme
Items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency, or otherwise as agreed with the Agency
Timescale for achieving the objectives and targets listed in the Schedule of Objectives and Targets
Designation of Responsibility for Achieving Targets and Objectives
A programme on the reduction of the fraction of biodegradable waste being disposed of at the landfill in accordance with the recommendations of the Landfill Directive and any consequential impact on landfill gas utilisation.
A programme for the increased recycling and recovery of waste and a reduction in the quantity of waste landfilled in accordance with Condition 5.13 and the targets in the Government waste policy document “Changing our Ways”.
A programme on the implementation of the recommendation outlined in the waste licence application by the licensee on the use of a portion of the income from waste charges and gate fees to mitigate the impact of the landfill on the community through appropriate environmental improvement projects.
Other items specified by the Agency

SCHEDULE B :Content of the Annual Environmental Report

Annual Environmental Report Content [NOTE 1]
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 interpretations of environmental monitoring, including plans and any updates of all monitoring locations including 12-digit grid references. This must include the following : • Summary of monitoring results for key leachate indicator parameters; • Comparison of monitoring results against baseline data and relevant standards; • Graphical presentation of the trends in the concentration of key leachate indicator parameters; and, • an assessment and explanation of the significance of the results and trends detected.
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.
Monthly water balance calculation and interpretation.
Schedule of Environmental Objectives and Targets for the forthcoming year.
Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year's report.
Full title and a written summary of any procedures developed by the licensee in the year which relates to the facility operation.
Tank, pipeline and bund testing and inspection report.
Reported incidents and Complaints summaries.
Review of Nuisance Controls.
Reports on financial provision made under this licence, management and staffing structure of the facility, and a programme for public information.
Annual Budget and site running costs.
Report on the use of a portion of the waste charges and gates fees on appropriate environmental improvement projects.
Report on the measures to increase recovery and reduce waste disposal by landfill.
Report on the reduction of the biodegradable waste being disposed of at landfill and any consequential impact on landfill gas utilisation.
Any other items specified by the Agency.

NOTE 1 Content to be revised subject to the agreement of the Agency after cessation of waste acceptance at the facility.

SCHEDULE C :Recording and Reporting to the Agency

Table C.1 Recurring Reports

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

Note 1: Unless altered at the request of the Agency

SCHEDULE D :Specified Engineering Works

Specified Engineering Works
Development of Phases and future Cells of the facility including preparatory works and lining.
Landfill cap installation, including temporary and intermediate capping, installation and all other containment works (including any containment works relating to leachate control).
Fencing and site security works.
Bunding of fuel and oil storage areas.
Waste Inspection and Waste Quarantine Areas.
Installation of Weighbridge.
Installation of Wheelwash.
Installation of livestock grid at the entrance.
Installation of Construction and Demolition Waste Recovery Area.
Installation of Compost Facility.
Recycling and recovery activities and associated infrastructure.
Installation of landfill gas management and monitoring systems.
Installation of leachate management, detection, storage, treatment, monitoring and control systems.
Telemetry system.
Installation of alternative drinking water supplies.
Installation of groundwater control and/or monitoring systems.
Surface water management works.
Restoration and Aftercare Works.
Nuisance control measures.
Installation of monitoring infrastructure.
Road and access works.
Any other works notified in writing by the Agency.

SCHEDULE E :Monitoring

Monitoring to be carried out as specified below.

E.1 Landfill Gas

Landfill gas monitoring locations shall be those as set out in Table E.1.1and as shown on Drawing 99-01005.03 “1:2500 Site Layout Plan” or the revision to be submitted in accordance with Condition 9.18.

Table E.1.1 Perimeter Monitoring Locations

STATION
Perimeter Monitoring Points at 45m intervals around the area to be filled.
Two monitoring points within the waste mass per hectare
Site Office and Buildings

Table E.1.2 Landfill Gas Monitoring Frequency and Technique

Parameter	Monitoring Frequency Note1		Analysis Method /Technique Note 2
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH_4) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO_2)%v/v	Monthly	Weekly	Infrared analyser
Oxygen(O_2) %v/v	Monthly	Weekly	Electrochemical cell
Atmospheric Pressure	Monthly	Weekly	Standard
Temperature	Monthly	Weekly	Standard
Minor Landfill Gas Constituents	Annually	Annually	See Note 3

Note 1: Monitoring to commence one month prior to the commencement of waste activities.

Note 2: Or other methods agreed in advance with the Agency. All monitoring equipment used should be intrinsically safe. Perimeter boreholes shall be monitored by the use of Flame Ionisation Detector.

Note 3: Sampling to be carried out for minor landfill gas constituents (e.g. H_2S,mercaptans, aliphatic acids etc.) as required by the Agency following evaluation of monthly results.

Table E.2 Landfill Gas Flare and Landfill Gas Utilisation Plant

Monitoring of the landfill gas flare or combustion plant shall be carried out at those locations set out in Table E.2.1. Monitoring points to be agreed with the Agency prior to the operation of the plant.

Table E.2.1 Landfill Gas Flare and Landfill Gas Utilisation Plant Monitoring Frequency and Technique

Parameter [Note 1]	Frequency	Analysis Method[Note2/3]/Technique[Note2/3]
Inlet		
Methane (CH_4) % v/v	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO_2)%v/v	Weekly	Infrared analyser
Oxygen (O_2) %v/v	Weekly	Electrochemical Cell
Outlet		
Volumetric Flow rate	Biannually	Pitot Tube Method
SO_2	Biannually	Flue gas analyser
Nox	Biannually	Flue gas analyser
CO	Continuous	Flue gas analyser
Particulates	Annually	Isokinetic/Gravimetric
TA Luft Class I, II, III organics	Annually	Adsorption/Desorption /GC /GCMS (Note 4)
Hydrocarbons	Annually	Adsorption/Desorption /GC /GCFID (Note 4)
Hydrochloric acid	Annually	Impinger / Ion Chromatography
Hydrogen fluoride	Annually	Impinger / Ion Chromatography

Note1: Monitoring locations to be installed and agreed prior to the commissioning of the enclosed Flare Unit and the Landfill Gas Utilisation Plant.
Note 2: All monitoring equipment used should be intrinsically safe.
Note 3: Or other methods agreed in advance with the Agency.
Note 4: Test methods should be capable of detecting acetonitrile, dichloromethane, tetrachlorethylene and vinyl chloride as a minimum.

¾ ¾ ¾ ¾ ¾ ¾ ❖¾ ¾ ¾ ¾ ¾ ¾

E.3 Dust

Dust monitoring locations shall be those as set out in Table E.3.1 and as shown on Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan" of the application and the revision required under Condition 9.18.

Table E.3.1 Dust Monitoring Locations

STATION
ST1
ST2
ST6 (monitoring location along the north west boundary to be submitted for agreement)
ST7 (monitoring location along the south east boundary to be submitted for agreement)

Table E.3.2 Dust Monitoring Frequency and Technique

Parameter ($mg/m^2/day$)	Monitoring Frequency	Analysis Method/Technique
Dust	Three times a year [Note 1]	Standard Method [Note 2]

Note 1: Twice during the period May to September, or as otherwise specified in writing by the Agency using the Bergerhoff Method. PM10 monitoring to be carried out once per year. Monitoring to commence one month prior to the commencement of construction of the facility.

Note 2: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). A modification (not included in the standard) which 2 methoxy ethanol may be employed to eliminate interference due to algae growth in the gauge.

E.4 Noise

Noise monitoring locations shall be those as set out in Table E.4.1 and as shown on Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan" of the application and /or the revision required under Condition 9.18.

Table E.4.1 Noise Monitoring Locations

STATION
NS1, NS2, NS3, NS4, NS5

Table E.4.2 Noise Monitoring Frequency and Technique

Parameter	Monitoring Frequency Note 1	Analysis Method/Technique
$L(A)_{EQ}$ [30 minutes]	**Biannually**	Standard Note 2
$L(A)_{10}$ [30 minutes]	**Biannually**	Standard Note 2
$L(A)_{90}$ [30 minutes]	**Biannually**	Standard Note 2
Frequency Analysis(1/3 Octave band analysis)	**Biannually**	Standard Note 2

Note 1: Monitoring shall commence one month prior to the commencement of construction of the facility.
Note 2: "International Standards Organisation. ISO 1996. Acoustics - description and Measurement of Environmental noise. Parts 1, 2 and 3".

E.5 Surface Water, Groundwater and Leachate

Surface water monitoring locations shall be those as set out in Table E.5.1and as shown on Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan" of the application and /or the revision required under Condition 9.18. . The monitoring parameters and frequencies are outlined in Table E.5.5.

Table E.5.1 Surface Water Monitoring Locations

STATION Note 1
Surface Waste Streams: sampling points SW1, SW2, SW3, SW4 & SW5
Inagh River: upstream and downstream of the confluence with streams labelled 1, 2 and 3 on Figure 8.2 of Volume 2 of the EIS.
Inlet to the stormwater settling ponds – continuous monitoring
Outlet to the stormwater settling ponds
Lough Acorraun

Note 1: Monitoring to commence within two months from the date of grant of licence and sampling points to be agreed with the Agency.

Groundwater monitoring locations shall be those as set out in Table E.5.2 and as shown on Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan" of the application and /or the revision required under Condition 9.18. The monitoring parameters and frequencies are outlined in Table E.5.5.

Table E.5.2 Groundwater Monitoring Locations

STATION [Note 1]
BH1 to 13 [Note 2]
O'Loughlins Well
Marinans Well (x2)
Longe's Well
Private wells under Condition 9.3

Note 1: Monitoring to commence within two months of the grant of the waste licence.

Note 2: Monitoring at BH8 to BH11 shall cease on the construction of cells in this area. The boreholes must be properly decommissioned and sealed prior to construction works.

Leachate monitoring locations shall be those as set out in Table E.5.3 and as shown on Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan" and / or revision to be submitted under Condition 9.19. The monitoring frequencies and parameters are outlined in Table E.5.4 and E.5.5.

Table E.5.3 Leachate Monitoring Locations

LEACHATE INSPECTION MANHOLES
Monitoring locations for the leachate Lagoon and the cells to be agreed with the Agency under Condition 4.17 and 9.4.

Note 1. Or as otherwise agreed with the Agency.

Table E.5.4 Leachate Monitoring Locations and Frequency

Monitoring Medium	Parameters	Frequency		Monitoring Points
		Operational	Aftercare	
Leachate	Leachate levels and freeboard in leachate lagoon	Continuously (Telemetry)	Weekly	In each cell of the landfill and in the leachate lagoon
	Leachate composition analysis as per Table F.5.5	As per Table E.5.5	At half the frequency specified in Table E.5.5 with a minimum of once per annum	Each cell of the landfill.

Table E.5.5 *Water* and Leachate - Parameters /Frequency

Parameter [Note 1]	SURFACE WATER [Note 9] 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	Not Applicable	Not Applicable	Weekly
Ammoniacal Nitrogen	Quarterly [Note 6]	Monthly	Quarterly
BOD	Quarterly [Note 6]	Not Applicable	Quarterly
COD	Quarterly	Not Applicable	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly [Note 6]	Monthly	Quarterly
pH	Quarterly [Note 6]	Monthly	Quarterly
Total Suspended Solids	Quarterly [Note 6]	Not Applicable	Not Applicable
Temperature	Quarterly [Note 6]	Monthly	Quarterly
Boron	Not Applicable	Annually	Annually
Cadmium	Annually	Annually	Annually
Calcium	Annually	Annually	Annually
Chromium (Total)	Annually	Annually	Annually
Copper	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
Iron	Annually	Quarterly	Annually
Lead	Annually	Annually	Annually
List I/II organic substances [Note 3]	Note 7	Note 7	Note 7
Magnesium	Annually	Annually	Annually
Manganese	Annually	Annually	Annually
Mercury	Annually	Annually	Annually
Potassium	Annually	Quarterly	Annually
Sulphate	Annually	Annually	Annually
Sodium	Annually	Quarterly	Annually
Total Alkalinity	Annually	Annually	Annually [Note 5]
Total Phosphorus / orthophosphate	Annually [Note 6]	Annually	Annually
Total Oxidised Nitrogen	Annually	Quarterly	Quarterly
Total Organic Carbon	Not Applicable	Quarterly	Not Applicable
Residue on evaporation	Not Applicable	Annually	Not Applicable
Zinc	Annually	Annually	Annually
Phenols	Not Applicable	Quarterly	Not Applicable
Faecal Coliforms [Note 4]	Not Applicable	Quarterly	Annually
Total Coliforms [Note 4]	Not Applicable	Quarterly	Annually

Note 1: a competent laboratory using standard and internationally accepte d procedures shall carry out All the analysis. The testing laboratory and the testing procedures shall be agreed with the Agency in advance.

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

Note 3: Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (US Environmental Protection Agency method 525 or equivalent, and pesticides (US Environmental Protection Agency method 608 or equivalent. Where there is reason to suspect organophosphorous contamination it is recommended to also scan for these compounds. All pesticides used at the facility should be included in the analysis.

Note 4: In the case where groundwater is extracted for drinking water, if the re is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22 ^{o}C and 37^{o}C and faecal streptococci.

Note 5: Only to be analysed in instances of on-site treatment o f leachate.

Note 6: Discharge of diverted surface water, at a monitoring location to be agreed in accordance with Condition 4.20, shall be monitored on a monthly basis for these parameters unless flow in that month does not allow such monitoring.

Note 7: List I/II organic substances, monitoring frequency: leachate shall be monitored once-off, groundwater annually, surface water once off and as required.

E.6 Meteorological Monitoring

Table E.6.1 Meteorological Monitoring:
At a location on the facility to be agreed with the Agency

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	Daily	Standard
Humidity	Daily	Standard
Atmospheric Pressure	Daily	Standard

SCHEDULE F : Emission Limits

F.1 Noise Emissions: (Measured at the monitoring points indicated in *Table E.4*.1

Day dB(A) L_{Aeq}(30 minutes)	Night dB(A) L_{Aeq}(30 minutes)
55	45

F.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

F.3 Dust Deposition Limits: (Measured at the monitoring points indicated in *Table E.3.1*).

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

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

F.4 Surface Water Discharge Limits: Measured at the discharge point from the surface water settling ponds to the boundary stream.

Level (Suspended Solids mg/l)
35

F.5 Emission Limits Values for Landfill Gas Flare and/or Utilisation Plant

Emission Point reference nos: (to be agreed with the Agency *)*
Location: Landfill Flarestacks and/or Gas Combustion Plant.
Volume to be emitted: 3000m3/hr
Minimum discharge height: 5m

Parameter	Emission Limit Value Note 1
Nitrogen oxides as (NO_2)	500 mg/m^3 for Combustion Plants 150mg/m^3 for Flare Stacks
CO	650 mg/m^3 for Combustion Plants 50mg/m^3 for Flare Stacks
Particulates	130 mg/m^3
TA Luft Organics Class I Note 2	20 mg/m^3 (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II Note 2	100 mg/m^3 (at mass flows > 2 kg/hr)
TA Luft Organics Class III Note 2	150 mg/m^3 (at mass flows > 3kg/hr)
Hydrogen Chloride	50 mg/m^3 (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m^3 (at mass flows > 0.05 kg/h)
Hydrocarbons	10mg/m^3

Note 1: Dry gas referenced to 5% oxygen by volume.

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

SCHEDULE G : Waste Acceptance

G.1 Waste Acceptance

The following waste quantities and those waste types outlined in Tables E.1.3 and E.1.4 of the waste licence application other than those prohibited by Condition 1.6.

Table G.1 Waste Categories and Quantities for Disposal at the Landfill

WASTE TYPE	MAXIMUM TONNES PER ANNUM
Household	27,700 Note 1
Commercial	15,000 Note 1
Treated Industrial Non-Hazardous Sludges Note 2	2,700
Industrial Non-Hazardous	11,100 Note 1
TOTAL	56,500

Table G.2 Waste Categories and Quantities for Recovery and Disposal at the Civic Waste Facility, Composting Area and Construction and Demolition Waste Area.

WASTE TYPE	MAXIMUM TONNES PER ANNUM Note 3
Source separated organic waste and green waste for composting	2,000
Wastes for Recycling and Recovery at the Waste Recycling and Recovery Area Note 4	2,000
Construction and Demolition Waste Note 5	2,000
TOTAL	6,000

Notes on Table G.1 and G.2

Note 1**:** The tonnage of household waste, commercial waste and industrial non-hazardous solid waste may be increased with the prior agreement of the Agency provided that the total amount of these wastes accepted at the landfill for disposal does not exceed the combined tonnage of 53,800 tonnes per annum.

Note 2: Treated dewatered non-hazardous industrial sludges shall only be accepted at the facility before 14:00 from Monday to Friday inclusive. All sludge shall be handled in accordance with the Article 16 reply dated July 2000 of the application. All sludge deposited into trenches shall be immediately covered with suitable cover material. No sludge shall be deposited at the facility after the 1st July 2009.

Note 3: The maximum tonnage of waste accepted for recovery at the facility may be increased with the prior agreement of the Agency provided that the amount disposed off decreases and the total amount of waste accepted at the facility does not exceed 62,500 tonnes per annum.

Note 4: Only household waste, commercial waste and those recyclable waste types outlined in Attachment D.1(p) shall be accepted at the waste recycling and recovery area, unless subject to the prior agreement of the Agency. Waste loads comprising mainly of green waste, cardboard, white goods, glass, recyclable metals or loose plastic shall not be deposited at the landfill but can be recovered at the Civic Waste Facility. Only domestic quantities of the following hazardous household waste types shall be accepted at the recycling and recovery area, unless otherwise agreed with the Agency: waste oil, oil filters, wood preservative waste, dried paint and varnish, paint and ink, batteries, fluorescent light bulbs and household and garden chemicals, and all such wastes shall be disposed or recovered off-site. No more than 3,000 litres of household hazardous waste shall be stored at the facility at any one time and all such waste shall be stored in the Chemical Storage Shed as shown on Drawing No. 99-01005.03.Rev.B "1:2500 Site Layout Plan", prior to transfer to an appropriate disposal or recovery facility.

Note 5: Construction and demolition waste shall not be disposed of at the facility but can be accepted for recovery for use as daily cover, site construction works and landfill restoration.

SCHEDULE H : 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 shall be deemed unsatisfactory if more than 10% of samples fail the criteria below. No sample shall exceed 1.2 times the quality limit values set.

1. Maturity

Compost shall be deemed to be mature if:

it meets two of the following requirements:

- C/N ratio ≤ 25
- oxygen uptake rate ≤ 150 mg O_2/kg volatile solids per hour; and

- 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.

- Elimination of the following test organisms (used to evaluate composting system efficiency in removing plant pathogens and weed seeds during the composting process): Plasmodiophora brassicae, tobacco-mosaic-virus (TMV) and tomato seeds.

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

2. Foreign Matter

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.

Foreign matter content as a percentage of oven-dried mass	≤1.5
Foreign matter, maximum dimensions, in mm	25

3. Trace Elements

Maximum Trace Element Concentration Limits for Compost

Trace Elements	(mg/kg, dry mass)
Arsenic (As) Note 1	15
Cadmium (Cd)	1.5
Chromium (Cr)	100
Copper (Cu)	100
Mercury (Hg)	1
Molybdenum (Mo) Note 1	5
Nickel (Ni)	50
Lead (Pb)	150
Selenium (Se) Note 1	2
Zinc (Zn)	350

Note 1: Monitoring of these parameters required if waste from an industrial source.
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.

4. Pathogens

Pathogenic organism content must not exceed the following limits:

- the quantity of faecal coliforms must be < 1,000 Most Probable Number (MPN)/g of total solids calculated on a dry weight basis; and
- there can be no salmonellae present (< 3 MPN/4g total solids).

5. Monitoring

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

Signed on behalf of the said Agency
on the 28th day of December, 2000 Patrick J. Nolan **Authorised Person**