



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

WASTE LICENCE PROPOSED DECISION

Waste Licence	25-1
Register Number:	
Applicant:	Carlow County Council
Location of Facility:	Powerstown, Co. Carlow

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Reasons for the Decision

The Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence any emissions from the activity will comply with and not contravene any of 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 Carlow County Council, County Buildings, Athy Road, Carlow to carry on the waste activities listed below at Powerstown Landfill, Powerstown, Co. Carlow subject to 11 No. 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 1:* Deposit on, in or under land (including landfill).
- Class 4:* Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
- Class 5:* Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
- Class 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.
- Class 13:* Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

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

- Class 2:* Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
- Class 3:* Recycling or reclamation of metals and metal compounds.
- Class 4:* Recycling or reclamation of other inorganic materials.
- Class 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.

INTERPRETATION

Act	The Waste Management Act, 1996 (No. 10 of 1996).
AER	Annual Environmental Report
Adequate lighting	20 lux measured at ground level.
Agency	Environmental Protection Agency
Agreed/Agreement	Agreed/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.
BATNEEC	Best Available Technology Not Entailing Excessive Cost as defined in section 5 (2) of the Act.
Bund	A structure to provide containment for any loss of liquid from a storage tank and associated pipework. The Agency's Landfill Design Manual (draft) sets forth design criteria.
Commercial waste	As defined in Section 5 (1) of the Act.
Condition	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 to be 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 subject to a proposal made by the licensee for the Agency's agreement.
Daytime	0800 hrs to 2200 hrs.
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	As defined in Section 5 (1) of the Act.

Emission limit Value	Those limits, including concentration limits or deposition limits, contained in Schedule G.
EMP	Environmental Management Plan
Environmental Pollution	As defined in Section 5 (1) of the Act.
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
Hazardous Waste	As defined in Section 4 (2) of the Act.
Household Waste	As defined in Section 5 (1) of the Act.
Industrial waste	As defined in Section 5 (1) of the Act.
Incident	Any reference to an incident in this licence means an incident as defined in Condition 3.1.
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.
Landfill	As defined in Section 5 (1) of the Act.
Landfill Directive	Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste as published in the Official Journal of the European Communities No. L 182/1 16.7.1999.
Landfill Gas	Gases generated from the landfilled waste.
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°C and atmospheric pressure.
Licence	A Waste Licence issued in accordance with the Act.
Licensee	Carlow County Council
List I/II Organics	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.

Monthly	At least 12 times per year, at approximately monthly intervals.
Municipal Waste	Municipal waste as defined in Section 5 (1) of the Act.
Night-time	2200 hrs to 0800 hrs.
Non hazardous waste	Non-Hazardous Waste is any waste which is not a hazardous waste as defined in the Act.
Quarterly	A period of three calendar months, the first period of which commences on the date of grant of this licence
Recovery	As defined in Section 4 (4) of the Act.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments
Sanitary authority	Carlow County Council
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment.
Specified Emissions	Those emissions listed in Schedule G of this licence.
Specified Engineering Works	Those engineering works listed in Schedule E of this licence.
Submit	Unless the context of this licence indicates otherwise, submit to the Agency in writing for agreement
Trigger Level	A parameter value which when achieved or exceeded requires certain actions to be taken.
Waste	As defined in Section 4(1) of the Act.
Waste disposal activity	Includes the activities referred to in Section 4 of the Act and listed in the Third Schedule thereto.
Waste recovery activity	Includes the activities referred to in Section 4 of the Act and listed in the Fourth Schedule thereto.
White Goods	Refrigerators, cookers, ovens and other similar appliances.
Working Day	08:30 to 16:30 Monday to Friday inclusive and 8:30 to 13:00 on Saturdays.
Working Face	The area of the site in which waste other than cover material, restoration materials or the construction of other 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 *Schedule A* and required by this licence.
- 1.2. Waste activities shall be restricted to the area of land outlined in orange on the Drawing No. PLE/004 "Site Plan" (Revisions 25/2/99) of the application. Any reference in this licence to "facility" shall mean the area thus outlined in orange.
- 1.3. Every plan, programme or proposal submitted to the Agency for 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.
- 1.4. 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.
- 1.5. 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:
 - a) that only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice;
 - b) 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,
 - c) 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.

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 within twelve months from the date of grant of this licence, 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 agreement.

2.1.2 The EMS shall include as a minimum those elements specified in the Conditions 2.2 to 2.8 below:

2.2 Schedule of Environmental Objectives and Targets

2.2.1 The licensee shall, within six months from the date of grant of this licence, submit to the Agency for its agreement a Schedule of Objectives and Targets. The objectives should be specific and the targets measurable.

2.2.2 The Schedule shall address the remaining life of the facility and shall be reviewed and submitted annually to the Agency for its agreement.

2.3 Environmental Management Programme

2.3.1 The licensee shall, within six months from the date of grant of this licence, submit to the Agency for its agreement an 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.

2.3.2 The EMP shall include, as a minimum, the information specified *in Schedule B: Content of the Environmental Management Programme*. The EMP shall be reviewed and submitted to the Agency for its agreement annually.

2.4 Corrective Action

2.4.1 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.

2.5 Awareness and Training

2.5.1 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.

2.6 Management Structure

2.6.1 The management structure of the facility shall be as described in Attachment L2. "Technical Competence and Site Management" and Attachment K1.3 "Emergency Contact Numbers" as submitted with the application on 27/2/98. 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) a named contact person for communications with the Sanitary Authority
- c) details of the responsibilities for each individual named under a) above;
- d) details of the relevant experience, competence and qualifications held by each of the persons nominated under a) above; and
- e) contingency arrangements for the absences of the named persons from the facility.

2.7 Communications

2.7.1 Within three months from the date of grant of this licence, the licensee shall submit for agreement to the Agency a Communications Programme to ensure that members of the public can obtain information concerning the environmental performance of the facility at all reasonable times.

2.8 Annual Environmental Report

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

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

2.9 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.

2.10 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 emission which results in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any relevant enactment;
 - b) any emission which does not comply with the requirements of this licence;
 - c) any trigger level specified in this licence or in the EMS which is attained or exceeded;
 - d) any malfunction of any environmental control system;
 - e) any indication that contamination has, or may have, taken place;
 - f) the cessation of waste activities at the facility for a period in excess of 28 days, and their recommencement;
 - g) any occurrence with the potential for environmental pollution; and,
 - h) any emergency.
- 3.2 The written record shall include all aspects described in Condition 10.7.
- 3.3 Unless otherwise instructed in writing by the Agency, the licensee shall:
- a) notify the Agency by telephone and facsimile if available, as soon as practicable and in any case not later than 10.00am the following working day after the occurrence of any incident; and
 - 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.
- 3.4 Should any further actions be taken after the date of 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) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;

- (e) be submitted in accordance to the relevant reporting frequencies specified by this licence;
 - (f) be certified as accurate and representative by the licensee; 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 D to this licence.
- 3.7 In the event of any incident which relates to discharges to surface water, the licensee shall notify the Southern Regional Fisheries Board as soon as practicable by telephone and in writing (by facsimile if available) and in any case not later than 10:00am on the following working day after such an incident.
- 3.8 Unless otherwise agreed in writing with the Agency, all documentation required to be maintained under this licence, shall be retained by the licensee.
- 3.9 Unless otherwise agreed in advance in writing with the Agency, the licensee must give at least fourteen days notice to the Agency of the following events:
- a) the cessation of waste disposal activities at the facility for a period in excess of twenty-eight days;
 - b) the re-commencement of waste disposal activities at the facility following a period of cessation referred to at a) above.
- 3.10 The licensee shall provide additional copies of any documentation referred to in this licence to the Agency upon written request, within the time specified in writing by the Agency.
- 3.11 The licensee shall keep the following documents at the caretakers office referred to in Condition 4.5.
- a) the current waste licence relating to the facility;
 - b) any previous waste licence in respect of the facility;
 - c) the current EMS for the facility;
 - d) the previous year's AER for the facility;
 - e) all written procedures produced by the licensee which relate to the licensed activities.
- 3.12 The licensee shall maintain a written record for each load of waste arriving at the facility. The licensee shall record the following:
- a) the name of the carrier;
 - b) the vehicle registration number;
 - c) the name of the producer(s)/collector(s) of the waste as appropriate;
 - d) a description of the waste;
 - e) the quantity of the waste, recorded in tonnes;
 - f) the name of the person checking the load; and,
 - g) 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.

- 3.13 A written record shall be kept of each consignment of leachate removed from the facility. The record shall include the following:
- a) the name of the carrier;
 - b) the date and time of removal of leachate from the facility;
 - c) the volume of leachate, in cubic metres, removed from the facility on each occasion;
 - d) the name and address of the Waste Water Treatment Plant to which the leachate was transported;
 - e) any incidents or spillages of leachate during its removal or transportation.
- 3.14 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.

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 and maintain all infrastructure referred to in this licence as instructed by the Agency.
- 4.2 Site Notice Board
- 4.2.1 Within three months of the date of grant of this licence, a Site Notice Board shall be provided and maintained by the licensee 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
- 4.2.2 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;
 - g) where and when environmental monitoring information relating to the facility can be obtained.
- 4.3 Site Security
- 4.3.1 The licensee shall maintain the main access gate and security fencing along the front of the facility as detailed in Drawing No. PFD 3b "Proposed Finished Contour Levels".
- 4.3.2 Within four months from the date of grant of this licence, the licensee shall carry out a review of the security arrangements for the facility and shall submit to the Agency for its agreement a proposal to include any improvements considered necessary. These improvements shall include provisions to restrict public access from the civic waste facility to the remainder of the facility.
- 4.3.3 The licensee shall remedy any defect in the gates and/or fencing as follows:
- a) a temporary repair shall be made by the end of the working day; and,
 - b) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days or as otherwise agreed in writing with the Agency.
- 4.3.4 Gates shall be locked shut when the facility is unsupervised.
- 4.4 Site Roads
- 4.4.1 The site roads and landfill entrance shall be maintained to the specifications described in Attachments D1(b) of the application and D1(1) of further information submitted on 14/5/99 and at the locations shown on Drawing No. A16/S.I.(B) "Site Infrastructure" (7/5/99).

- 4.5 The licensee shall maintain the caretakers office on the facility, at the location shown in Drawing No. A16/S.I.(B) "Site Infrastructure" (7/5/99). The office shall be maintained in a manner suitable for the processing and storing of documentation.
- 4.6 The licensee shall provide and maintain a working telephone and facsimile machine in the office specified in Condition 4.5 above.
- 4.7 Unless otherwise agreed in advance with the Agency, the licensee shall within six months from the date of grant of this licence provide and maintain a Waste Inspection and Quarantine Area at the location referred to as "Waste Acceptance Area" in Drawing No. A16/S.I.(B) "Site Infrastructure" (7/5/99). The licensee shall ensure that this area 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 acceptance area and the waste quarantine area shall be suitably and clearly segregated from each other.
- 4.8 Civic Waste Facility
- 4.8.1 Unless otherwise agreed in writing in advance with the Agency, the can and bottle banks, the container for rubbish deposition, the scrapped cars, the five steel storage containers and the waste oil and battery deposits shall be at the locations shown in Drawing No. A16/S.I.(B) "Site Infrastructure" (7/5/99) and therein referred to as the Civic Waste Facility.
- 4.8.2 All receptacles at the Civic Waste Facility shall be clearly labelled to indicate their contents.
- 4.8.3 Storage areas for household hazardous waste including waste oils and batteries shall be constructed, tested and reported on in accordance with Condition 4.15.
- 4.9 The Waste Inspection and Quarantine Area and the Civic Waste Facility referred to in Conditions 4.7 and 4.8 shall:
- a) be constructed with a hard impervious base graded to a longitudinal cross-sectional fall;
 - b) be contained by an impervious bund not less than 100mm high; and
 - c) drain only to a sump.
- 4.10 Within four months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement, details of the procedure for the de-gassing of CFC's from the fridges.
- 4.11 Within four months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement, details regarding the storage of the fluorescent tubes.
- 4.12 The licensee shall maintain a weighbridge at the facility. Unless otherwise agreed in writing with the Agency the location of the weighbridge shall be as shown on Drawing No. A16/S.I. (B) "Site Infrastructure" (7/5/99).
- 4.13 The licensee shall use provide and use adequate lighting during the operation of the facility in hours of darkness.
- 4.14 Unless otherwise agreed in advance with the Agency, the licensee shall maintain a septic tank at the location shown on Drawing No. A16/S.I.(B) "Site Infrastructure" (7/5/99). Effluent from the septic tank shall be pumped to the leachate storage lagoons.
- 4.15 Fuel Storage and Storage Areas for Hazardous Waste

- 4.15.1 Unless otherwise agreed in writing in advance with the Agency, no fuel shall be stored on site.
- 4.15.2 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.
- 4.15.3 All drainage from bunded areas shall be diverted for collection and safe disposal.
- 4.15.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 4.15.5 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 within six months of the date of grant of this licence. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. The licensee shall also submit to the Agency for its agreement in each case a written report on the storage of fuels on site. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.
- 4.15.6 All tanks and containers shall be labelled to clearly indicate their contents.
- 4.16 Specified Engineering Works
- 4.16.1 The licensee shall submit written proposals for all Specified Engineering Works, as defined in *Schedule E: Specified Engineering Works*, to the Agency for its agreement prior to any such works being carried out. No such works shall be carried out without the prior agreement of the Agency.
- 4.16.2 All specified engineering works shall be supervised by a competent person(s) agreed in writing in advance by the Agency and that person, or persons, shall be present at all times during which relevant works are being undertaken.
- 4.16.3 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) 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.
- 4.17 Prior to the development of new cells, the licensee shall submit an archaeological report of the proposed development works carried out by an appropriately qualified person to the Agency. Such development works shall not commence without the prior agreement of the Agency. During such development works, the licensee shall ensure the protection and appropriate recording of any archaeological remains encountered.
- 4.18 For any works being carried out in areas where asbestos waste has been previously deposited, the licensee shall ensure that procedures are in place to ensure that asbestos fibres or asbestos dust is not emitted or released to any environmental medium.
- 4.19 Landfill Lining:
 - 4.19.1 Unless otherwise agreed in advance with the Agency, the landfill liner for new cells shall be a composite liner consisting of a basal soil layer of at least 1m in thickness with a permeability of less than 1×10^{-9} m/s overlain by a 2.5mm thick high density polyethylene (HDPE) layer as detailed in Drawing No. DET/300 "Typical section through cell floor" (23/1/98). The side walls shall be designed and constructed to achieve an equivalent protection.
 - 4.19.2 Within six months of the date of grant of this licence, the licensee shall submit a report to the Agency for its agreement, on the potential effects of groundwater on the integrity of the liner.
- 4.20 Leachate Recirculation
 - 4.20.1 There shall be no recirculation of leachate onto cells 1-6 inclusive either directly or indirectly.
 - 4.20.2 The licensee shall submit a proposal to the Agency for its agreement within six months of the date of grant of this licence for the operation and maintenance of the leachate recirculation system for cells 7-13 at the facility.
- 4.21 Leachate Management
 - 4.21.1 Subject to Conditions 4.21.2 - 4.21.7 of this licence, leachate management at the facility shall be carried out as described in Attachment D4 of the Article 16 information submitted with the application on 9/7/99.
 - 4.21.2 Leachate levels in cells 7-13 shall not exceed a level of 1.0m over the HDPE liner at any point
 - 4.21.3 The frequency of leachate removal by tanker shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate storage lagoons at all times.
 - 4.21.4 The licensee shall maintain all infrastructure that forms part of the landfill leachate management scheme in a safe and fully operational manner.

- 4.21.5 Within three months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement, an assessment of the potential leachate seepage from the sloped edges of the cells located in the north of the facility and proposals to remediate any such leakage.
- 4.21.6 Within nine months from the date of grant of this licence, the licensee shall submit proposals to the Agency for agreement to assess the integrity of the lining of the leachate storage lagoons.
- 4.21.7 Within six months from the date of grant of this licence, the licensee shall submit a proposal to the Agency for its agreement to minimise leachate level in cells 1-6 and shall submit a proposal to the Agency for its agreement for the management of leachate in the unlined part of the site. The proposal shall include details on the following:
- a) leachate levels within the waste;
 - b) remediation measures to minimise indirect discharge of leachate to groundwater;
 - c) the location and specification of wells for the monitoring and extraction of leachate. This should have regard for existing waste depth and shall not disturb the underlying substrata; and
 - d) disposal and/or treatment of extracted leachate.

4.22 Landfill Gas Management:

- 4.22.1 Landfill gas generated at the site shall be vented to the atmosphere in accordance with the landfill gas management scheme for cells 1 to 5 as described Attachment D.5 of the Application (27/2/98) and for cells 7-8 in accordance with Attachment D5 as submitted with the application in Article 16 information (14/5/99) and at the locations as shown in Drawing No. A16/MP "Monitoring Points" (7/5/99).
- 4.22.2 Within six months of the date of grant of this licence, a proposal shall be submitted to the Agency for its agreement for:
- (a) the active collection and utilisation of landfill gas as an energy resource; or
 - (b) the active collection and flaring of landfill gas.
- 4.22.3 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.

4.23 Surface Water Management

- 4.23.1 Within six months of the date of grant of this licence the licensee shall submit to the Agency for its agreement an ongoing management programme for control of surface water run off from the facility during construction, operation and restoration.

4.24 Groundwater Management

- 4.24.1 Within six months from the date of grant of this licence, the licensee shall submit proposals to the Agency for its agreement to prevent the ingress of groundwater into the facility.

4.24.2 Unless otherwise agreed in advance with the Agency, the licensee shall within three months from the date of grant of this licence, provide details regarding the construction and operation of well R2.

4.24.3 Unless otherwise agreed in advance with the Agency, the licensee shall within three months from the date of grant of this license, submit to the Agency for its agreement, a proposal to determine the groundwater flow regime to the north of the site.

4.25 Capping

4.25.1 Temporary capping shall be as detailed in Attachment D6(a) of Article 16 information submitted with the application on 9/7/99 .

4.25.2 Unless otherwise agreed or instructed by the Agency, capping shall incorporate the specifications for non hazardous landfills in the Landfill Directive with the impermeable mineral layer having a minimum thickness of 0.6 metres and a hydraulic conductivity of 1×10^{-9} m/s.

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

CONDITION 5 WASTE ACCEPTANCE AND HANDLING

- 5.1. No hazardous wastes shall be disposed of in the landfill.
- 5.2. Subject to Condition 5.1 only those waste types and quantities listed in *Schedule H: Waste Types* shall be disposed of in the landfill unless the prior agreement of the Agency has been obtained.
- 5.3. Unless otherwise agreed in advance in writing with the Agency, the following wastes only are to be accepted for recycling at the Civic Waste Facility specified in Condition 4.8 and 4.9:
- | | | | |
|---------------|-----------------------|------------|----------------|
| a) Aluminium | (b) Glass | (c) Metals | (d) Waste Oils |
| (e) Batteries | (f) Fluorescent Tubes | (g) Paper | |
- a) White Goods
- 5.4. Within three months from the date of grant of this licence, the licensee shall submit for agreement in advance with the Agency, details of the Waste Contractors used for the removal of waste from the Civic Waste Facility.
- 5.5. Within six months of the date of grant of this licence, the licensee shall submit for agreement to the Agency a proposal for the acceptance of waste.
- 5.6. A record of all inspections and of wastes removed off-site shall be maintained. All other 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 and/or unsuitable for disposal at this facility shall be removed for disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area from the date of completion of construction only and may be stored for a maximum of twenty-four hours.
- 5.7. The quantity of wastes to be accepted for disposal at the landfill, shall not exceed 40,000 tonnes per annum, unless otherwise agreed in advance with the Agency.
- 5.8. Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency.
- 5.9. Sewage Sludge
- 5.9.1. Sewage sludge shall only be accepted at the facility between the hours of 8:30 and 14:00 Monday to Friday inclusive. All sewage sludge shall be covered immediately with other waste.
- 5.9.2. Within six months from the date of grant of this licence, the licensee shall submit for agreement to the Agency a report on alternative disposal options for sewage sludge.
- 5.10. Asbestos Waste
- 5.10.1. All waste asbestos based construction materials must be double wrapped in heavy gauge plastic which is clearly labelled to indicate the presence of asbestos.

- 5.10.2. Disposal of asbestos based construction materials shall be into prepared bays or trenches of at least 2 metres in depth. Deposited asbestos waste shall be covered immediately with suitable material.
- 5.10.3. Within three months from the date of grant of this licence, the licensee shall submit to the Agency for agreement, a site plan indicating designated areas for the disposal of asbestos waste. Records shall be kept of all locations used for asbestos disposal.
- 5.11. Scavenging shall not be permitted at the facility.
- 5.12. Waste shall only be accepted at the facility between the hours of 8:30 to 16:30 Monday to Friday inclusive and 8:30 to 13:00 on Saturdays unless otherwise agreed in writing in advance with the Agency.
- 5.13. 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, restoration materials or the construction of other specified engineering works;
 - 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 have a slope no greater than 1 in 3; and,
 - c) all waste deposited at the working face shall be compacted as soon as is practicable and at any rate prior to the end of the working day.
- 5.14. The working face of the operational cell shall, at the end of each day, be covered with material suitable to minimise any nuisances occurring. No waste other than cover material shall be exposed. Unless otherwise agreed in advance with the Agency, a minimum of 150mm of inert material shall be placed over the waste at the end of the working week. Any cover material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.
- 5.15. Within six months of the date of grant of this licence, a proposal for recovery options for construction and demolition waste at the facility shall be submitted to the Agency for its agreement.
- 5.16. A steel wheeled compactor or other such vehicle as agreed with the Agency shall be used for compacting all waste other than that used for restoration or construction purposes.
- 5.17. In order to prevent the formation of voids, all hollow objects and large articles deposited on the site shall be crushed, broken up, flattened or otherwise treated.
- 5.18. Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over except for the disposal of asbestos waste as specified in Conditions 5.10.2.
- 5.19. No smoking shall be allowed on the facility other than in the caretakers office at the location shown in Drawing No. A16/S.I "Site Infrastructure" (7/5/99).
- 5.20. The container used for the depositing of non recyclable waste at the Civic Waste Facility shall be emptied as necessary and in any event by the end of each week.
- 5.21. No waste shall be accepted at the facility, other than inert material for capping and restoration, after 31 December 2003.

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

CONDITION 6 ENVIRONMENTAL NUISANCES

- 6.1. The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by vermin, fly infestations and odours. Written records shall be made of all inspections and any actions taken as a result of these inspections.
- 6.2. The licensee shall ensure that vermin, flies and dust 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.
- 6.3. 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.
- 6.4. The licensee shall submit a review of traffic control and traffic management along the N9 in the immediate vicinity of the facility in so far as it relates to the activities at the facility, to the Agency for agreement within six months from the date of grant of the licence.
- 6.5. The licensee shall ensure that birds do not give rise to nuisance at the facility or in the immediate area of the facility. Bird control measures shall be as described in Section F.1 of the Article 16 information submitted with the application on 14/5/99. Within six months from the date of grant of this licence the licensee shall submit to the Agency for its agreement, an assessment of the effectiveness of the bird control measures at the facility. This assessment shall include, where required:
 - a) proposals for additional bird control measures;
 - b) method for assessing the effectiveness of such additional measures; and
 - c) timescales for the implementation of such measures.
- 6.6. The measures and infrastructure described in Attachment F3 "Litter Control" of the application submitted on 27/2/98 shall be applied to control litter at the facility.
- 6.7. 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.
- 6.8. 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.
- 6.9. The licensee shall ensure that all waste being delivered to the facility is appropriately covered.
- 6.10. In dry weather, site roads and any other areas used by vehicles shall be sprayed with water as and when required to minimise airborne dust nuisance.
- 6.11. The licensee shall submit control proposals to the Agency for its agreement, within six months from the date of grant of this licence for dealing with fly infestation from the facility. These proposals shall include as a minimum, details on insecticide(s) to be used, operator, training, mode of application and measures to contain sprays within the facility boundary.

- 6.12. 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.
- 6.13. The licensee shall within six months of the date of grant of this licence submit a proposal to the Agency for its agreement for the assessment of odours arising from the facility.

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 G: Emissions* 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. There shall be no clearly audible tonal component or impulsive component in the noise emissions from the activity at the facility boundary.
- 7.5. The following are the trigger levels for landfill gas emissions from the facility measured in any service on 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; and
 - b) Carbon dioxide, greater than or equal to 1.5% v/v.
- 7.6. There shall be no direct emissions to groundwater.
- 7.7. All leachate tankered from the facility shall be transported to Bagnalstown Waste Water Treatment Plant and disposed of there unless otherwise agreed in advance with the Agency.

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

CONDITION 8 RESTORATION AND AFTERCARE

- 8.1. Within eighteen months of the date of grant of this licence, the licensee shall submit a restoration and aftercare plan to the Agency for its agreement.
- 8.2. Unless otherwise agreed in advance with the Agency, the licensee shall within twelve months of the date of grant of this licence, submit a drawing of the final profile of the facility, to the Agency for its agreement.
- 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 site 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 in writing with the Agency.

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 F: Monitoring* and as specified in the Conditions of this licence.
- 9.2. Unless otherwise agreed in advance with the Agency, monitoring infrastructure which proves to be unsuitable for its purpose shall be replaced within one month of monitoring results indicating that the monitoring infrastructure is damaged or unsuitable.
- 9.3. Until such time as the Agency agrees otherwise, landfill gas monitoring of the temporary boreholes as shown in Figure 1 "Monitoring Point Location Plan" submitted with the application as part of the Article 16 reply on 14/5/99, shall be undertaken at the frequencies and using the methods specified in Table F.1.2 of Schedule F of this licence.
- 9.4. Within six months from the date of grant of this licence the licensee shall submit to the Agency for its agreement, proposals to extend the gas monitoring programme. This proposal shall include monitoring to detect off-site migration of landfill gas with particular regard to the possible increase in migration following the placement of the capping layer. The programme shall include details regarding the location and frequency of monitoring of landfill gas in respect of domestic properties in proximity to the facility.
- 9.5. Within three months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement details of the permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.
- 9.6. The licensee shall within six months of the grant of this licence submit an assessment into the cause, nature and extent of the groundwater contamination in the vicinity of the site, in so far as it relates to the facility and proposals for its remediation, to the Agency for its agreement.
- 9.7. Within four months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement, proposals for an additional surface water monitoring point downstream of the facility taking into account the potential groundwater discharge from the southern point of the unlined site.
- 9.8. An annual biological assessment of the Powerstown Stream shall be undertaken. This assessment shall use appropriate biological methods such as the EPA Q-rating system for the assessment of rivers and streams.
- 9.9. Within six months from the date of grant of this licence, the licensee shall submit a report on the composition of leachate from cells 1-8 which shall be analysed for the parameters specified in Table F.4.4. The monitoring points shall be as follows: leachate collection chamber for cells 1-2, leachate collection chamber for cells 3-6, leachate Dip Pipe 1 for cell 7 and leachate Dip Pipe 1 for cell 8.
- 9.10. Within six months from the date of grant of this licence, the licensee shall submit to the Agency for agreement, a proposal for the future monitoring of leachate composition.
- 9.11. Within three months of the date of grant of this licence, the licensee shall include in the monitoring programme set out in *Schedule F*, all private wells that are located within 500m of the facility, subject to the agreement of the well owners.
- 9.12. 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.

- 9.13. 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.
- 9.14. 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.
- 9.15. Unless otherwise agreed in writing with the Agency, a written record shall be kept of the names, qualifications and a summary of relevant experience 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.
- 9.16. The licensee shall maintain all sampling and monitoring points so that they may be used for the representative sampling and monitoring of emissions from the facility.
- 9.17. A topographical survey including the void space shall be carried out within three months of the date of grant of this licence. It shall be repeated annually thereafter. The survey shall be in accordance with any written instructions issued by the Agency.

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 of the application submitted on 27/2/99 and Attachment K of further information submitted on 18/8/98.
- 10.3. The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.
- 10.4. 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.
- 10.5. 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.
- 10.6. Private Water Supply
 - 10.6.1. Pending the outcome of the investigation required under *Condition 4.24.3*, the licensee shall provide an alternative potable water supply to Ms. Mulvey. Cessation of this supply shall have to be agreed in advance with the Agency.
 - 10.6.2. In the event that monitoring of local wells (identified through *Condition 9*) 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 and notified to the well owner. The licensee shall submit to the Agency for its agreement and within a time specified in writing by the Agency, written proposals for the provision of an alternative supply of water to those affected.
- 10.7. In the event that any monitoring, sampling 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 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.

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 £ 14,010 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 2000 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Consumer Price Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 1999, the licensee shall pay a pro rata amount from the date of this licence to 31st December 1999. 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 due to an incident occurring on or adjacent to the facility and associated with the facility, 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 other form of approved security, 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 8.1. The type of fund and means of its release/recovery shall be agreed in writing 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 aftercare and restoration annually and any details of the necessary adjustments to the fund must, within two weeks of the revision, be forwarded to the Agency for 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:

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

Where:

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

WPI = Appropriate Wholesale Price Index [Capital Goods
Building & Construction (i.e. Materials & Wages)]

Index], as published by the Central Statistics Office,
for the year since last closure calculation/revision.

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

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

SCHEDULE A : Waste Activities

Waste Management Act, 1996: Third Schedule ^{Note 1}	
Class 1.	<p>Deposit on, in or under land (including landfill):</p> <p>This activity is limited to the disposal of non-hazardous waste at the site.</p>
Class 4.	<p>Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons:</p> <p>This activity is limited to the storage of leachate in the leachate storage lagoons.</p>
Class 5.	<p>Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.</p> <p>This activity is limited to the disposal of waste in lined cells.</p>
Class 6.	<p>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:</p> <p>This activity is limited to the biological treatment of sewage in the septic tank from the caretakers toilet.</p>
Class 13.	<p>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 was produced.</p> <p>This activity is limited to the storage of leachate in the leachate storage lagoons before recirculation or removal to the Waste Water Treatment Plant.</p>

Note 1: Any reference to an activity Class is to be taken as being from the Third Schedule of the Waste Management Act, 1996, unless otherwise stated.

Waste Management Act, 1996: Fourth Schedule ^{Note 1}	
Class 2.	<p>Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):</p> <p>This activity is limited to the storage of waste oils at the civic waste facility prior to removal for recycling by Atlas Oil Ltd.</p>
Class 3.	<p>Recycling or reclamation of metals and metal compounds:</p> <p>This activity is limited to the storage of scrap metal and aluminium cans prior to removal for recycling.</p>
Class 4.	<p>Recycling or reclamation of other inorganic materials:</p> <p>This activity is limited to the storage of glass and paper prior to removal for recycling</p>
Class 13.	<p>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:</p> <p>This activity is limited to the permanent structures in place where glass, aluminium, waste oil, paper and batteries are stored prior to removal for recycling.</p>

Note 1: Any reference to an activity Class is to be taken as being from the Fourth Schedule of the Waste Management Act, 1996, unless otherwise stated.

SCHEDULE B :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

Other items as specified by the Agency

SCHEDULE C :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 of all monitoring locations including 12 digit grid references.

Resource and energy consumption summary.

Proposed development of the site 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 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 site.

Estimated annual and cumulative quantity of indirect emissions to groundwater.

Monthly water balance calculation and interpretation.

Meteorological Report.

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.

Report on environmental nuisance control at the facility for the previous year and for the forthcoming year.

Reported incidents and Complaints summaries.

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

Any other items specified by the Agency.

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

SCHEDULE D :Recording and Reporting to the Agency

Table D.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	Twelve 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 three 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
Topographical survey of available void space	Annually	Three months from the date of grant of licence and one month after the end of each year thereafter.
Archaeological Report	As they arise	Prior to the development of new cells
Construction Quality Assurance Report	As they arise	Ten days after construction works have been completed.
Monitoring of landfill gas	Quarterly	Ten days after end of the quarter being reported on.
Dust Monitoring	Annually	One month after end of the year being reported on.
Noise Monitoring	Annually	One month after end of the year 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.

Note 1: Unless altered at the request of the Agency

Table D.2 Once-off Reports

Report and Contents	Condition Number	Report Submission Date (Number of months within which to submit, from date of granting of licence, unless otherwise specified)
Environmental Management System		
(i) EMS Proposals	2.1.1	12
(ii) Schedule of Objectives and Targets	2.2.1	6
(iii) Environmental Management Programme	2.3.1	6
(iv) Management Structure	2.6.1	If required
(v) Communication Programme	2.7.1	3
(vi) Annual Environmental Report	2.8.1	12
Infrastructure		
(i) Review of site security	4.3.2	4
(ii) Procedure for degassing of white goods	4.10	4
(iii) Details on storage of fluorescent tubes	4.11	4
(iv) Archaeological report	4.17.2	Prior to the development of new cells
(v) Proposals to minimise leachate levels in cells 1-6 and leachate management for unlined site	4.21.7	6
(vi) Contingency proposals for alternative supply of water to residents if necessary	10.6	If required
(vii) Specified engineering works	4.16.1	Prior to any works in Schedule E being carried out
Surface water, Groundwater, Landfill Gas and Leachate		
(i) Report on potential effects of groundwater on the integrity of the liner	4.19.2	6
(ii) Proposals for the recirculation of leachate	4.20.2	6
(iii) Assessment of potential leachate seepage	4.21.5	3
(iv) Proposals to assess the integrity of the lining of the leachate storage lagoons.	4.21.6	9
(v) Proposals for landfill gas collection and flaring or Proposals for landfill gas utilisation	4.22.2	6
(vi) Proposals for the control of surface water runoff	4.23.1	6
(vii) Proposals to prevent ingress of groundwater to the facility	4.24.1	6
(viii) Details on the construction and operation of bore well R2	4.24.2	3
(ix) Proposal to determine groundwater flow north of the facility	4.24.3	3
Waste Acceptance Procedures		
(i) Details on waste contractors	5.4	3
(ii) Waste Acceptance Procedures	5.5	6
(iii) Report on alternative disposal options for sewage sludge.	5.9.2	6
(iv) Viability of Recovery options for C & D Waste	5.15	6
Nuisances		
(i) Review of traffic control and traffic management.	6.4	6
(ii) Assessment of effectiveness of bird control	6.5	6
(iii) Proposal for fly control	6.11	3
(iv) Proposal for odour assessment	6.13	6

Restoration and Aftercare		
(i) Restoration and Aftercare Plan	8.1	18
(ii) Final Profile of the Facility	8.2	12
Environmental Monitoring		
(i) Proposals to extend the gas monitoring programme	9.4	6
(ii) Proposals for installation of permanent gas monitoring system	9.5	3
(iii) Assessment of groundwater contamination and proposals for its remediation	9.6	6
(iv) Proposal for additional surface water monitoring point	9.7	4
(v) Report on composition of leachate	9.9	6
(vi) Proposal for future monitoring of leachate composition.	9.10	6
Emergency Response Procedures		
(i) Emergency Response Procedures	10.1	6
(ii) Contingency proposals for alternative supply of water to residents if necessary	10.6	If required
Charges and Financial Provisions		
(i) Proposal for Financial Provision	11.2	6

SCHEDULE E : Specified Engineering Works

Specified Engineering Works

Development of Phases and future Cells of the facility including preparatory works and lining.

Design and construction of side wall lining.

Landfill cap installation, including temporary and intermediate capping, installation and all other containment works (including any containment works relating to leachate control).

Construction of Waste Acceptance and Quarantine Area.

Construction of Civic Waste Facility

Fencing and site security works.

Bunding of fuel and oil storage areas.

Installation of landfill gas management and monitoring systems.

Installation of leachate management, detection, storage, treatment, monitoring and control systems.

Installation of alternative drinking water supplies.

Installation of groundwater control and/or monitoring systems.

Surface water management works.

Restoration and Aftercare Works.

Any other works notified in writing by the Agency.

SCHEDULE F : Monitoring

All monitoring frequencies and programmes listed in this Schedule are subject to alteration under Condition 9 or as a result of an incident.

Monitoring to be carried out as specified below.

F.1 Landfill Gas

Landfill gas monitoring locations shall be those as set out in Table F.1.1. and as shown on drawing A16/MP "Monitoring Points" as submitted with the application in Article 16 information on 14/5/99.

Table F.1.1 Landfill Gas Monitoring Locations

STATION	EASTING	NORTHING
Trial Pit (TP 1)	270614	168843
Trial Pit (TP 2)	270660	168857
Trial Pit (TP 3)	270624	168928
Trial Pit (TP 4)	270712	168977
Trial Pit (TP 5)	270626	168821
Trial Pit (TP 6)	270512	168732
Trial Pit (TP 7)	270500	168538
Trial Pit (TP 8)	Note 1	
Trial Pit (TP 9)	Note 1	
Trial Pit (TP 10)	Note 1	
Vent Stack 2	270685	168889
Vent Stack 4	270784	168870
Vent Stack 6	270755	168852
Vent Stack 7	270833	168842
Bore Well M1	270710	168978
Bore Well M3	270888	168839
Bore Well M4	270576	168902
Bore Well M5	270626	168821
Bore Well R1	270595	168867
TEM No. 1	270548	168390
TEM No. 2	270535	168744
TEM No. 3	270586	169094
Note 2		

Note 1: 12 digit grid reference to be submitted to the Agency with the first monitoring return.

Note 2: Landfill gas monitoring shall also be undertaken in any void areas

beneath

existing/temporary site offices and storage units.

Table F.1.2 Landfill Gas Monitoring Frequency and Technique

Parameter	Monitoring Frequency		Analysis Method ^{Note1} /Technique ^{Note2}
Methane (CH ₄) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector. See Note 1
Carbon dioxide (CO ₂)%v/v	Monthly	Weekly	Infrared analyser/ flame ionisation detector
Oxygen(O ₂) %v/v	Monthly	Weekly	Infrared analyser
Atmospheric Pressure	Monthly	Weekly	Standard
Temperature	Monthly ⁴	Weekly	Standard
Minor landfill gas constituents	Annual	Annual	See Note 2

Note1: All monitoring equipment used should be intrinsically safe. Perimeter boreholes shall be monitored by use of flame ionisation detection .

Note 2: Sampling to be carried out for minor landfill gas constituents (e.g., H₂S, mercaptans, aliphatic acids etc.) as required by the Agency following evaluation of monthly results.

Note 3: Or other methods agreed in advance with the Agency.

Note 4: Monitoring frequency for vent stacks shall be Quarterly

F.2 Dust

Dust monitoring locations shall be those as set out in Table F.2.1

Table F.2.1 Dust Monitoring Locations

STATION	EASTING	NORTHING
Dust Monitor 1	270577	168893
Dust Monitor 2	270577	168804
Dust Monitor 3	270753	168800
Dust Monitor 4	270764	168984

Table F.2.2 Dust Monitoring Frequency and Technique

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

Note 1: 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.

Note 2: Twice during the period May to September, or as otherwise specified in writing by the Agency.

F.3 Noise

Noise monitoring locations shall be those as set out in Table F.3.1.

Table F.3.1 Noise Monitoring Locations

STATION	EASTING	NORTHING
Noise Monitor 3	270821	168760
Noise Monitor 4	270567	168843
S1 ^{Note1}	Note 2	
S2 ^{Note1}	Note 2	

Note 1: Monitoring point as per “Acoustic Survey at Carlow Landfill” Report submitted as part of the application.

Note 2: 12 digit grid reference to be submitted to the Agency with the first monitoring return.

Table F.3.2 Noise Monitoring Frequency and Technique

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

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

F.4 Surface Water, Groundwater and Leachate

Surface water monitoring locations shall be those as set out in Table F.4.1

Table F.4.1 Surface Water Monitoring Locations

STATION	EASTING	NORTHING
Surface Monitoring Point upstream	270780	169030
Surface Monitoring Point downstream	270590	168900
Additional Surface Monitoring Point downstream as required by Condition 9.7	Note 1	Note 1

Note 1: 12 digit grid reference to be submitted to the Agency with the first monitoring return.

Groundwater monitoring locations shall be those as set out in Table F.4.2

Table F.4.2 Groundwater Monitoring Locations/Frequencies

All private wells within 500m of the facility shall be sampled on an annual basis for the following as a minimum: Ammoniacal Nitrogen, Electric Conductivity, Potassium, Sodium, Total Organic Carbon and bacteriological. The private well to the North (Ms. Mulvey) of the facility shall be sampled on a quarterly basis for Total and Faecal Coliforms.

STATION	EASTING	NORTHING
Bore Well M1	270710	168978
Bore Well M3	270888	168839
Bore Well M4	270576	168902
Bore Well M5	270626	168821
Bore Well M6	270512	168759
Bore Well M8	Note 1	
Bore Well M9	Note 1	
Bore Well R2	270587	168732
Bore Well P1	270699	168868
All Private Wells specified in Condition 9.11	Note 1	

Note 1: 12 digit grid reference to be submitted to the Agency with the first monitoring return.

Leachate monitoring locations shall be those as set out in Table F.4.3

Table F.4.3 Leachate Monitoring Locations

Monitoring Medium	Parameters	Frequency		Monitoring Points
		Operational	Aftercare	
Leachate in cells 7-13	Leachate levels in cells 7-13	Weekly	Monthly	Leachate Dip Pipe 1 Leachate Dip Pipe 2 Note 1
Storage lagoon	Leachate level in storage lagoons	Daily Visual	Monthly	Level of freeboard in lagoon

Note 1: Monitoring of leachate levels in cells 9-10, 11, 12 & 13 shall be at the leachate collection sumps as shown in Drawing No. PFD/1A "Proposed Future Development, Revised Liner Levels" Date 19/2/99.

Table F.4.4 Water and Leachate - Parameters /Frequency

Parameter ^{Note 1}	SURFACE WATER	GROUNDWATER
	Monitoring Frequency	Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Weekly	Quarterly
Groundwater Level	Not Applicable	Monthly
Leachate Level	Not Applicable	Not Applicable
Ammoniacal Nitrogen	Quarterly	Monthly
BOD	Quarterly	Not Applicable
COD	Quarterly	Not Applicable
Chloride	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly
Electrical Conductivity (EC)	Quarterly	Monthly
pH	Quarterly	Monthly
Total Suspended Solids	Quarterly	Not Applicable
Temperature	Quarterly	Monthly
Boron	Not Applicable	Annually
Cadmium	Annually	Annually
Calcium	Annually	Annually
Chromium (Total)	Annually	Annually
Copper	Annually	Annually
Cyanide (Total)	Annually	Annually
Fluoride	Not Applicable	Annually
Iron	Annually	Annually
Lead	Annually	Annually
List I/II organic substances ^{Note 3}	Annually	Annually ^{Note 6}
Magnesium	Annually	Annually
Manganese	Annually	Annually
Mercury	Annually	Annually
Potassium	Annually	Quarterly
Sulphate	Annually	Annually
Sodium	Annually	Quarterly
Total Alkalinity	Annually	Annually
Total Phosphorus / orthophosphate	Annually	Annually
Total Oxidised Nitrogen	Annually	Quarterly
Total Organic Carbon	Not Applicable	Quarterly
Residue on evaporation	Not Applicable	Annually
Zinc	Annually	Annually
Faecal Coliforms	Not Applicable	Annually ^{Note 4}
Total Coliforms	Not Applicable	Annually ^{Note 4}
Biological Assessment	Annually ^{Note 5}	Not Applicable

Note 1: All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures. The testing laboratory and the testing procedures shall be agreed in writing 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). In cases where large quantities of harbour dredgings have been accepted at the site it is recommended to analyse for organotin compounds. Where there is reason to suspect organophosphorous contamination it is recommended to also scan for these compounds.

Note 4: If there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.

Note 5: Appropriate biological methods (such as EPA Q-Rating System to be used for the assessment of rivers and streams).

Note 6: For boreholes R2 and P1 semi-volatiles and mineral oils shall be measured quarterly.

F.5 Meteorological Monitoring

Table F.5.1 Meteorological Monitoring:

Data to be obtained from the automatic weather station at Teagasc, Oak Park research station.

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 G : Emission Limits

G.1 Noise Emissions: (Measured at the monitoring points indicated in [Table F.3.1](#)).

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

G.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

G.3 Quality Limits for Leachate Tankered to the Wastewater Treatment Plant

pH	COD ^{Note1}
6 to 8	25,000ppm

Note 1: Subject to prior agreement of the Sanitary Authority

G.4 Dust Deposition Limits: (Measured at the monitoring points indicated in [Table F.2.1](#)).

Level (mg/m ² /day) ^{Note 1}
350

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

SCHEDULE H : Waste Types

TABLE H.1 WASTE CATEGORIES AND QUANTITIES

WASTE TYPE	MAXIMUM TONNES PER ANNUM
Household	17,090
Commercial	11,990
Sewage Sludge	3,400
Construction and Demolition	1,100 ^{Note 1}
Industrial Non-Hazardous Solids	6,420

Note 1: This figure includes the maximum annual tonnage of 100 tonnes for Asbestos based construction material EWC code 17 01 05.

Part III: Activities Refused

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 refuse the following classes of activity.

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

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):
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	Reason: This activity refers to the possibility of installing leachate treatment facilities on site in the future. As no details regarding this have been provided with the application, an assessment of its potential environmental impact could not be assessed.
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Given by the Agency on the 27th day of September 1999

Signed on behalf of the said Agency

on the 27th day of September 1999

_____ B Sheehan

Authorised Person