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County Wexford, Ireland

WASTE LICENCE

Waste Licence Register Number:	71-1
Licensee:	Westmeath County Council
Location of Facility:	Marlinstown Landfill, Marlinstown Bog, Mullingar, Co. Westmeath

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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 and objections received from other parties and the reports of its inspectors.

Part I Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency), under Section 40(1) of the said Act hereby grants this Waste Licence to Westmeath County Council, County Buildings, Mullingar, Co. Westmeath to carry on the waste activities listed below at Marlinstown Landfill, Marlinstown Bog, Mullingar, Co. Westmeath subject to eleven conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

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

Class 1 Deposit on, in or under land (including landfill).

This activity is limited to the landfilling of non-hazardous waste.

Class 4: Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.

This activity is limited to the possible future storage of leachate at the facility.

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 the possible future treatment of leachate at the facility.

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.

This activity is limited to the possible future treatment of leachate at the facility.

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 wastes at the facility prior to removal off-site to an appropriate facility.

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 storage of paper, cardboard and green waste at the Civic Waste Facility, and the possible composting of green waste at the facility in the future.
- Class 3:** Recycling or reclamation of metals and metal compounds.
This activity is limited to collection of metals at the Civic Waste Facility.
- Class 4:** Recycling or reclamation of other inorganic materials.
This activity is limited to the recovery of inert waste for restoration of the facility and the collection of inorganic materials at the Civic Waste facility.
- 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 to generate electrical power.
- 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 as a soil enhancement for restoration purposes.
- 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 inert materials for the restoration of the facility and the storage of agreed materials at the Civic Waste Facility.

INTERPRETATION

Act	The Waste Management Act, 1996 (No. 10 of 1996).
Adequate lighting	20 lux measured at ground level.
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.
Commercial waste	As defined in Section 5 (1) of the Act.
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	As defined in Section 5 (1) of the Act.
Emission Limit Value	Those limits, including concentration limits and deposition levels established in <i>Schedule F: Emission Limits</i> of this licence.
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.
Green Waste	Waste wood, plant matter and other vegetation.
Hazardous Waste	As defined in Section 4 (2) of the Act.
Household Waste	As defined in Section 5 (1) of the Act.
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.
Industrial waste	As defined in Section 5 (1) of the Act.
Landfill	As defined in Section 5 (1) of the Act.
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	Westmeath 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	10.00 p.m. to 8.00 a.m.
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.
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.
Specified Emissions	Those emissions listed in <i>Schedule F: Emission Limits</i> of this licence.
Specified Engineering Works	Those engineering works listed in <i>Schedule D: Specified Engineering Works</i> of this licence.
Submit	Unless the context of this licence indicates otherwise, submit in writing to the Agency for its agreement.
Treated Sludge	Sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as significantly to reduce its fermentability and the health hazards resulting from its use.
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	8.00 a.m. to 4.30 p.m. Monday to Friday, 8.30 a.m. to 1.00 p.m. on Saturday.
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. Waste activities shall be restricted to the area of land outlined in red on Drawing No. B.2.1 of the application entitled "Site Plan". Any reference in this licence to "facility" shall mean the area thus outlined in red.
- 1.3. 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.
- 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 its agreement.
 - 2.1.2 The EMS shall include as a minimum those elements specified in the Conditions 2.2 to 2.7 below:

- 2.2 Schedule of Environmental Objectives and Targets
- 2.2.1 The licensee shall, within twelve 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 a three year period as a minimum 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 twelve 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 A: Content of the Environmental Management Programme* of this licence. The EMP shall be reviewed and submitted to the Agency for its agreement annually.
- 2.4 Corrective Action
- 2.4.1 Within six months of the date of grant of this licence 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 Within six months of the date of grant of this licence 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 Within three months from the date of grant of this licence, the licensee shall 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.
- 2.6.2 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.
- 2.7 Communications
- 2.7.1 Within six months from the date of grant of this licence, 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.
- 2.8 Annual Environmental Report

- 2.8.1 The licensee shall submit to the Agency for its agreement, within thirteen months from the date of grant of this licence, and within one month of the end of each year thereafter, an Annual Environmental Report (AER).
- 2.8.2 The AER shall include as a minimum the information specified in *Schedule B: Content of Annual Environmental Report* of this licence and shall be prepared in accordance with any relevant written guidance issued by the Agency.
- 2.9 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:
- any nuisance caused by the activity;
 - any emission which does not comply with the requirements of this licence;
 - any trigger level specified in this licence which is attained or exceeded;
 - any indication that environmental pollution has, or may have, taken place; and,
 - any emergency.
- 3.2 The written record shall include all aspects described in Condition 10.6(a-e).
- 3.3 Unless otherwise instructed in writing by the Agency, the licensee shall:
- 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;
 - 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
 - in the event of any incident which relates to discharges to surface water, notify the Eastern Regional Fisheries Board as soon as practicable and in any case not later than 10.00 am on the following working day after such an incident.
- 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:
- be sent to the Agency's headquarters;
 - 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 4.5.
- 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.
- 3.10 The licensee shall maintain a written record for each load of waste arriving at the facility (other than to the Civic Waste Facility). The licensee shall record the following:
- a) the date;
 - b) the name of the carrier;
 - c) the vehicle registration number;
 - d) the name of the producer(s)/collector(s) of the waste as appropriate;
 - e) the name of the waste facility (if relevant) from which the load originated including the waste licence or waste permit register number;
 - f) a description of the waste including the associated EWC codes;
 - g) the quantity of the waste, recorded in tonnes;
 - h) the name of the person checking the load; and,
 - i) 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;
 - 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 number of sealed containers being stored overnight;
 - d) the name of the carrier;
 - e) the vehicle registration number;
 - f) the destination of the waste (facility name and waste licence/permit number as appropriate);
 - g) a description of the waste (if recovered or rejected waste, the specific nature of the waste);
 - h) the quantity of waste, recorded in tonnes;
 - i) the name of the person checking the load; and,
 - j) 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 or as instructed by the Agency.
- 4.2 Site Notice Board

4.2.1 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.

4.2.2 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 By October 31st 2001, security and stockproof fencing and lockable gates shall be installed and maintained at the locations shown on Drawing No. H024-04. Security and stockproof fencing shall be 2.4m in height and comprise of precast concrete posts and chainlink fencing. The base of the fencing shall be set in the ground.

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

- a) a temporary repair shall be made by the end of the working day; 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.

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

4.4 Site Roads and Hardstanding

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

4.4.2 An area of hardstanding shall be provided and maintained by the licensee for use as a Civic Waste Facility. This area shall drain to a silt trap and oil separator unless otherwise agreed by the Agency.

4.5 The licensee shall provide and maintain an office on the facility. The office shall be constructed and 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 Inspection

4.7.1 Within six months of the date of grant of this licence, a Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.

- 4.7.2 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, and drainage from these areas shall be directed to the leachate collection network.
- 4.8 The licensee shall maintain a weighbridge at the facility. The location of the weighbridge shall be as shown on Drawing No. H024-04.
- 4.9 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 4.10 Waste Water
- 4.10.1 The licensee shall provide and maintain the septic tank and associated percolation area at the location shown on Figure 2.4.4 for the treatment of sewage arising on-site. The septic tank and percolation area shall satisfy the criteria set out in SR6 Septic Tank Systems (NSAI 1991).
- 4.11 Storage Areas
- 4.11.1 The licensee shall provide and maintain a bunded fuel storage area at the facility. Unless otherwise agreed with the Agency the location of the fuel storage area shall be as shown on Drawing No. H024-04. Fuels shall only be stored at the agreed location.
- 4.11.2 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.
- 4.11.3 All drainage from bunded areas shall be diverted for collection and safe disposal.
- 4.11.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 4.11.5 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 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.
- 4.11.6 All tanks and containers shall be labelled to clearly indicate their contents.
- 4.12 Specified Engineering Works
- 4.12.1 The licensee shall submit written proposals for all Specified Engineering Works, as defined in *Schedule D: Specified Engineering Works* of this licence, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.

- 4.12.2 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.
- 4.12.3 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.

4.13 Leachate Management

- 4.13.1 Within twelve months of the date of grant of this licence, the licensee shall install a leachate management system at the facility. This will include an interceptor drain around the waste body and a lined leachate storage lagoon. The system shall provide for the abstraction/collection of leachate from the waste and its treatment at a suitable treatment works.
- 4.13.2 The leachate storage 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 1×10^{-9} m/s constructed in a series of compacted lifts no thicker than 250mm when compacted or a 0.5m artificial layer of enhanced soil giving equivalent protection to the foregoing also constructed in a series of compacted lifts no thicker than 250mm when compacted.
- 4.13.3 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. Any remedial works recommended in this report must be implemented within a time-scale to be agreed with the Agency.
- 4.13.4 All leachate collected at the facility shall be disposed of by tankering off-site in fully enclosed road tankers for treatment at a Waste Water Treatment Plant to be agreed with the Agency.
- 4.13.5 The frequency of leachate removal/discharge from the leachate lagoon shall be such that a minimum freeboard of 0.5m shall be maintained in the leachate lagoon at all times.

4.13.6 The licensee shall develop, prior to the use of the leachate storage lagoon, Operational Procedures for the handling of leachate during removal from the lagoon and subsequent transport/discharge to the Waste Water Treatment Plant.

4.13.7 Recirculation of leachate or other contaminated water shall not be undertaken.

4.14 Landfill Gas Management:

4.14.1 Within nine months of the date of grant of this licence, the licensee shall install landfill gas extraction wells at the perimeter of the landfill. The landfill gas should then be collected and, if feasible, pumped to a flare. If flaring of the gas is not feasible, then the collected gas should be pumped and vented to atmosphere at an agreed location(s). Notwithstanding this, the flare should be installed by 31st December 2002 and the completion of the system for the collection of landfill gas from the entire landfill should be undertaken by 30th June 2003.

4.14.2 Flare unit efficiency shall be tested within three months of installation and once every three years thereafter.

4.14.3 Within twelve months of the date of grant of this licence, a proposal for the utilisation of landfill gas as an energy resource shall be submitted to the Agency for its agreement.

4.14.4 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.

4.14.5 All buildings constructed on the facility shall have regard to the guidance given in the Department of Environment and Local Government's 1994 publication "Protection of New Buildings and Occupants from Landfill Gas" and any subsequent revisions.

4.15 Capping

4.15.1 Within three months of the date of grant of this licence, the licensee shall ensure that all previously deposited waste is covered by an intermediate cover of at least 300mm.

4.15.2 Unless otherwise agreed with the Agency, final capping shall consist of the following:

- a) top soil (150 -300mm);
- b) subsoils, such that total thickness of top soil and subsoils is at least 1m;
- c) drainage layer of 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-4} m/s;
- d) compacted mineral layer of a minimum 0.6m thickness with a permeability of less than 1×10^{-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.

4.15.3 Waste disposal at the facility shall cease by 31st December, 2002 and, in accordance with Condition 4.15.2, all areas of deposited waste shall be capped to the specifications agreed with the Agency by 31st March, 2003.

4.16 Surface Water Management

- 4.16.1 Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement a surface water management programme for the control of surface water run-off from the facility.
- 4.17 Civic Waste Facility
- 4.17.1 Unless otherwise agreed by the Agency and within six months of the date of grant of this licence, the licensee shall provide and maintain a Civic Waste Facility at the facility.
- 4.17.2 Receptacles provided and maintained by the licensee for use at the Civic Waste Facility shall only be stored at locations agreed by the Agency, and all receptacles shall be clearly labelled to indicate their contents.
- 4.17.3 Waste oils collected for recovery shall be stored as specified in Condition 4.11.
- 4.18 Compost Facility
- 4.18.1 Unless otherwise agreed by the Agency and within nine months of the date of grant of this licence, the licensee shall submit a proposal to the Agency for agreement on the composting of segregated green and/or organic waste at the facility.
- 4.18.2 A concrete hardstanding area shall be provided and all composting shall be carried out on that area. All leachate and run-off arising from the composting shall be collected and diverted to the leachate storage system.
- 4.19 Wheelwash
- 4.19.1 The licensee shall establish and maintain a wheelwash/dry wheel shake out at the facility within six months of the date of grant of this licence. All waste vehicles leaving the facility shall use the wheelwash.
- 4.19.2 The wheelwash 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 and disposed of at the working face. The water drained from the wheelwash shall be drained/pumped only to the leachate collection system unless otherwise agreed by the Agency.

Reason: To provide for the protection of the environment.

CONDITION 5 WASTE MANAGEMENT

- 5.1. No liquid waste or hazardous waste, including hazardous asbestos waste, shall be disposed of at the facility. Other wastes whose disposal is prohibited at the facility are; septic tank waste, silt and dredgings, animal waste (e.g. offal, hides, bones, excrement or blood), dried paints (including dried varnish and lacquer), latex and rubber solutions.
- 5.2. Subject to Condition 5.1, only those waste types and quantities listed in *Schedule G: Waste Acceptance* of this licence shall be recovered or disposed of at the facility unless the prior agreement of the Agency has been obtained. Only treated sludges shall be accepted at the facility.
- 5.3. Civic Waste Facility
- a) The Civic Waste Facility shall only be used by private vehicles.

- b) Only the following wastes may be accepted at the Civic Waste Facility, in suitable individual containers: household waste; waste oils; glass; textiles; paper; white goods; metals; and any other recyclable wastes.
- c) All tipping of waste will be into receptacles or in the case where inspection is required, into a designated inspection area.
- d) All waste accepted at the Civic Waste Facility for disposal off-site shall be removed within 50 hours.
- e) At the end of the working day the floor of the Civic Waste Facility shall be cleaned of all waste.

5.4. Waste Acceptance Procedures

5.4.1. The licensee shall provide and maintain written procedures for the acceptance and handling of all wastes including (1) wastes for disposal or restoration purposes at the landfill, (2) wastes for disposal or recovery at the Civic Waste Facility, and (3) degassing of CFC's from white goods accepted at the Civic Waste Facility.

5.4.2. Waste acceptance procedures adopted by the licensee shall be in accordance with the requirements of the Landfill Directive (1999/31/EC) and the Agency's Draft Landfill Manual on Waste Acceptance.

5.5. The Waste Inspection Area shall be used in the determination of the acceptability of suspect loads arriving at the facility and a record of all inspections shall be maintained. 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 and/or unsuitable for recovery or disposal at this facility shall be removed for recovery or disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area only.

5.6. Scavenging shall not be permitted at the facility.

5.7. Waste shall only be accepted at the facility between the hours of 8.00 a.m. and 4.30 p.m. Monday to Friday inclusive, and 8.30 a.m. and 1.00 p.m. on Saturdays with the exclusion of Bank Holidays unless otherwise agreed in advance with the Agency. Access to the facility by members of the public shall be restricted to the Civic Waste Facility.

5.8. 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.

5.9. Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over, with the exception of works specified in *Schedule D: Specified Engineering Works* of this licence, without prior agreement from the Agency.

5.10. No smoking shall be allowed on the facility other than in the site offices as shown on Drawing No. H024-04 following the installation of permanent gas monitoring infrastructure here.

5.11. Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor as 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.

5.12. Treated Sludges

- 5.12.1. Treated sludges shall only be accepted at the facility between the hours of 8.30 am and 2.00 pm Monday to Friday inclusive.
- 5.12.2. All sludges shall be covered immediately with other waste.
- 5.12.3. Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, handling procedures for sludges.
- 5.13. Non-hazardous Asbestos Waste
 - 5.13.1. Non-hazardous asbestos waste may be disposed of at the facility
 - 5.13.2. Non-hazardous asbestos based construction and demolition waste must be double wrapped in heavy gauge plastic which is clearly labelled to indicate the presence of asbestos.
 - 5.13.3. Disposal of non-hazardous asbestos waste shall be into prepared bays or trenches of at least 2 metres in depth.
 - 5.13.4. Deposited non-hazardous asbestos waste shall be covered immediately with at least 250mm of suitable material. At the end of the day, the waste shall be covered with a minimum of 500mm of suitable material.

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, birds, flies, mud, dust and odours. Written records shall be made of all inspections and any actions taken as a result of these inspections.
- 6.2. The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay.
- 6.3. 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.
- 6.4. 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 10.00 am of the next working day, after such waste is discovered. Such waste shall be disposed of at an appropriate facility.
- 6.5. The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.
- 6.6. Dust Control
 - 6.6.1. 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.

- 6.7. 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.
- 6.8. The licensee shall apply the vermin control measures outlined in Section 4.1.2. (d) of Vol. 1 of the EIS and Attachment F.1 of the licence application. In the case that such measures do not eliminate vermin nuisance to the satisfaction of the Agency, the licensee shall implement additional control measures as agreed by the Agency.

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. Landfill Gas
- 7.4.1. 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; and
 - b) Carbon dioxide, greater than or equal to 1.5% v/v.
- 7.4.2. The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of :-
- 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 (where relevant):
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.
- 7.4.3. Emission limits for emissions to atmosphere in this licence shall be interpreted in the following way:-
- 7.4.3.1. Continuous monitoring
- a) No 24 hour mean value shall exceed the emission limit value.

- b) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
- c) No 30-minute mean value shall exceed twice the emission limit value.

7.4.3.2. Non-Continuous Monitoring

- a) For any parameter where, due to sampling/analytical limitations, a 30-minute sample is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.
- b) For all other parameters, no 30-minute mean value shall exceed the emission limit value.
- c) For flow, no hourly or daily mean value shall exceed the emission limit value.

7.5. There shall be no direct emissions to groundwater.

7.6. Disposal of Leachate

- 7.6.1. Any leachate or other contaminated water removed from the facility shall be transported to a wastewater treatment plant whose name and location has been agreed in advance by the Agency. Disposal procedures for the leachate at the wastewater treatment plant shall be in accordance with any written requirements of the Sanitary Authority.

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

CONDITION 8 RESTORATION AND AFTERCARE

- 8.1. Within six months of the date of grant of this licence, the licensee shall submit to the Agency for agreement a Restoration and Aftercare Plan for the facility. The restoration plan shall, *inter alia*, provide for a method statement for the landfilling, emplacement of the final capping/restoration layer(s), landscaping plans, seeding, tree planting, the ecological monitoring of restored cells and the restoration of the facility. The Plan shall have regard to the guidance published in the Agency's Landfill Manual: "*Landfill Restoration and Aftercare*". Notwithstanding this, the finished level of the landfill shall not exceed 115m OD.
- 8.2. Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate. Any depressions arising after profiling shall be rectified by the emplacement of suitable capping or restoration materials.
- 8.3. 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.
- 8.4. 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.
- 8.5. The restoration of the landfill facility shall be completed by 31 December, 2004.

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* of this licence and as specified in the Conditions of this licence.
- 9.2. Within three months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement a proposal for permanent gas monitoring at the site buildings and any other enclosed structures at the facility.
- 9.3. 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.
- 9.4. The licensee shall maintain all sampling and monitoring points, and clearly label and name all sampling and monitoring locations, so that they may be used for representative sampling and monitoring.
- 9.5. 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. All landfill gas monitoring equipment used for monitoring landfill gas under the requirements of this licence shall be certified as being intrinsically safe.
- 9.6. 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.
- 9.7. Within two months of the date of grant of this licence, the following information shall be submitted to the Agency for its agreement: the names, qualifications and a summary of relevant experience of all persons that will 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.
- 9.8. Unless otherwise specified by this licence or agreed by the Agency, all environmental monitoring shall commence no later than two months after the date of grant of this licence.
- 9.9. Unless otherwise agreed in advance with the Agency, 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.
- 9.10. Within three months of the date of grant of this licence, the licensee shall submit to the Agency an updated appropriately scaled drawing(s) showing the location of all the monitoring locations that are stipulated in 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. Unless otherwise agreed with the Agency, Contingency arrangements for the facility shall be as detailed in Attachment K.1 of the licence application.
- 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. 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 recurrence of the incident; and
 - ii) identify and put in place any other appropriate remedial action.
- 10.7. In the event that monitoring of local wells indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an incident. 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.

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 £8,017 (€10180) 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 8.1. 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:

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

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 :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 specified by the Agency

SCHEDULE B :Content of the Annual Environmental Report

Annual Environmental Report Content ^{Note1}

Reporting Period.

Waste activities carried out at the facility.

Quantity and Composition of waste received and recovered during the reporting period and each previous year.

Methods of recovery 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.

Resource and energy consumption summary.

Volume of leachate produced and volume of leachate transported / discharged off-site.

Report on restoration.

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.

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.

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.
Compost Quality	Quarterly	Ten days after end of the quarter being reported on.
Any other monitoring	As it occurs	Within ten days of obtaining results.

Note 1: Unless altered with the written approval of the Agency

SCHEDULE D :Specified Engineering Works

Specified Engineering Works
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.
Installation of Civic Waste Facility infrastructure.
Installation of Waste Inspection and Waste Quarantine Areas.
Installation of landfill gas management and monitoring systems, including the installation of an enclosed flare unit.
Installation of leachate management, detection, storage, treatment, monitoring and control systems.
Surface water management works.
Restoration and Aftercare Works.
Nuisance control measures.
Any future composting of organic wastes.
Installation of a wheelwash.
Any other works notified in writing by the Agency.

SCHEDULE E :Monitoring

Monitoring to be carried out as specified below and at monitoring points specified in Table E.1.

Table E.1 Monitoring points

LANDFILL GAS LOCATIONS Note 1	DUST LOCATIONS Note 1	NOISE LOCATIONS Note 2	SURFACEWATER LOCATIONS Note 3	GROUNDWATER LOCATIONS ^{Note 4}	LEACHATE LOCATIONS Note 5
G1	D1	N1	SW1	BH 1	BH 21
G2	D2	N2	SW2	BH 2	BH 22
G3	D3	N3	SW3	BH 4	BH 23
G4		N4	SW4	BH 8	BH 24
G5		N5	SW5	BH 9	BH 25
G6		N6		BH 10	BH 26
G7				BH 11	
G8				BH 12	
G9				BH 13	
G10				BH 14	
G11				BH 15	
G12				BH 16	
G13				BH 27	
G14				BH 31	
G15				BH 32	

LANDFILL GAS LOCATIONS Note 1	DUST LOCATIONS Note 1	NOISE LOCATIONS Note 2	SURFACEWATER LOCATIONS Note 3	GROUNDWATER LOCATIONS ^{Note 4}	LEACHATE LOCATIONS Note 5
G16					
G17					
G18					

Note 1: As shown in Figure 2.2.1 of Vol. 2 of the EIS (Air Quality Monitoring Points).

Note 2: As shown in Figure J.1 (Revision B) of the Article 16 information received by the Agency on 14/6/99.

Note 3: As shown in Figure 2.6.2 of Vol. 2 of the EIS (Surface Water Monitoring Points).

Note 4: As shown in Figures 2.4.11 and 2.4.12 of Vol. 2 of the EIS (Shallow/Bedrock Groundwater Contours 21/12/99).

Note 5: As shown in Figure 2.2.4 of Vol. 2 of the EIS (Borehole Locations).

E.1 Landfill Gas

Landfill gas monitoring locations shall be those set out in Table E.1.

Table E.1.1 Landfill Gas Monitoring Frequency and Technique

Parameter	Monitoring Frequency		Analysis Method ^{Note1} /Technique ^{Note2}
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH₄) % v/v	Monthly ^{Note3}	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO₂)%v/v	Monthly ^{Note3}	Weekly	Infrared analyser/ flame ionisation detector
Oxygen(O₂) %v/v	Monthly ^{Note3}	Weekly	Electrochemical cell
Atmospheric Pressure	Monthly ^{Note3}	Weekly	Standard
Temperature	Monthly ^{Note3}	Weekly	Standard

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

Note 2: Or other methods agreed in advance with the Agency.

Note 3: Weekly for gas monitoring wells G16, G17 and G18.

E.2 Dust

Dust monitoring shall be carried out at the locations specified in Table E.1.

Table E.2.1 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. With the agreement of the Agency monitoring can cease once landfill restoration is complete.

E.3 Noise

Unless otherwise agreed by the Agency, noise monitoring locations shall be those set out in Table E.1.

Table E.3.1 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."

E.4 Surface Water, Groundwater and Leachate

Surface water monitoring shall be carried out at the monitoring locations set out in Table E.1 and of the parameters and frequencies outlined in Table E.4.1.

Groundwater monitoring shall be carried out at the monitoring locations set out in Table E.1 and of the parameters and frequencies outlined in Table E.4.1.

Leachate monitoring shall be carried out at the monitoring locations set out in Table E.1 and of the parameters and frequencies outlined in Table E.4.1.

Table E.4.1 Water and Leachate - Parameters /Frequency

Parameter ^{Note 1}	SURFACE WATER	GROUNDWATER	LEACHATE
	Monitoring Frequency	Monitoring Frequency	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	Monthly	Quarterly
BOD	Quarterly	Not Applicable	Quarterly
COD	Quarterly	Not Applicable	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Quarterly	Quarterly
pH	Quarterly	Quarterly	Quarterly
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	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 6	Annually	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	Not Applicable
Total Phosphorus / orthophosphate	Annually	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	Note 6	Quarterly	Note 7
Faecal Coliforms ^{Note 4}	Not Applicable	Quarterly	Annually
Total Coliforms ^{Note 4}	Not Applicable	Quarterly	Annually
Biological Assessment	Annually ^{Note 5}	Not Applicable	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 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).
- Note 4: In the case where groundwater is extracted for drinking water, if there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.
- Note 5: Appropriate biological methods (such as EPA Q-Rating System to be used for the assessment of rivers and streams).
- Note 6: Once off for List I/II organic substances at SW1 and SW5 and thereafter as required by the Agency.
- Note 7: Once off for List I/II organic substances and thereafter as required by the Agency.

E.5 Meteorological Monitoring

Table E.5.1 Meteorological Monitoring:

Data to be obtained from Mullingar II Meteorological Station unless otherwise agreed by 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

E.6 Enclosed Landfill Gas Flare Unit

Monitoring of the landfill gas flare shall be carried out as set out in the Table below. Monitoring points are to be agreed with the Agency prior to the operation of the plant.

Parameter	Monitoring Frequency	Analysis Method ^{Note1} /Technique ^{Note2}
Inlet		
Methane (CH ₄) % v/v	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO ₂)%v/v	Weekly	Infrared analyser/ flame ionisation detector
Oxygen (O ₂) %v/v	Weekly	Infrared analyser
Outlet		
Volumetric Flow rate	Biannually	Pitot Tube Method
SO ₂	Biannually	Flue gas analyser
NO _x	Biannually	Flue gas analyser
CO	Biannually	Flue gas analyser
Particulates	Annually	Isokinetic/Gravimetric
TA Luft Class I, II, III organics	Annually	Adsorption/Desorption / GC /GCMS ^(Note 3)
Hydrochloric acid	Annually	Impinger / Ion Chromatography
Hydrogen fluoride	Annually	Impinger / Ion Chromatography

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

Note 2: Or other methods agreed in advance with the Agency.

Note 3: Test methods should be capable of detecting acetonitrile, dichloromethane, tetrachlorethylene and vinyl chloride as a minimum.

SCHEDULE F :Emission Limits

F.1 Noise Emissions: (Measured at the monitoring points listed in Table E.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 listed in Table E.1).

Level (mg/m ² /day) ^{Note 1}
350

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

F.4 Emission Limits Values for Enclosed Landfill Gas Flare Unit

Emission Point reference nos: (to be agreed with the Agency)

Location: Landfill gas flarestack

Volume to be emitted: 3000m³/hr^{Note 2}

Minimum discharge height: 5m^{Note 2}

Parameter	Emission Limit Value
Nitrogen oxides as (NO ₂)	150 mg/m ³
CO	50 mg/m ³
Particulates	130 mg/m ³
TA Luft Organics Class I ^(Note 1)	20 mg/m ³ (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II ^(Note 1)	100 mg/m ³ (at mass flows > 2 kg/hr)
TA Luft Organics Class III ^(Note 1)	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)

Note 1: In addition to the above individual limits, the sum of the concentrations of Class I, II and III shall not exceed the Class III limits.

Note 2: Unless otherwise agreed with the Agency.

SCHEDULE G : Waste Acceptance

G.1 Waste Acceptance

Table G.1 Waste Categories and Quantities

WASTE TYPE	MAXIMUM TONNES PER ANNUM
Municipal	19,000
Treated Sewage Sludge and Industrial Non-Hazardous Sludge	4,500
Construction and Demolition	1,450
Non-Hazardous Asbestos	50
Industrial Non-Hazardous	1,200
Inert materials to be used for the purposes specified in Condition 8.1	71,100
TOTAL	97,300

Sealed by the seal of the Agency on this 15th day of February, 2001.

PRESENT when the seal of the Agency was affixed hereto:

Anne Butler

Director/Authorised Person