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P.O. Box 3000,  
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County Wexford, Ireland

## WASTE LICENCE

### NON HAZARDOUS WASTE LANDFILL

<b>Waste Licence</b>	81-2
<b>Register Number:</b>	
<b>Licensee:</b>	KTK Landfill Limited
<b>Location of Facility:</b>	Brownstown and Carnalway, Kilcullen, County Kildare.

# INTRODUCTION

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

This Waste Licence relates to an existing privately owned and operated, specially engineered landfill accepting commercial and non-hazardous industrial wastes at KTK Landfill Limited, Brownstown and Carnalway, Kilcullen, Co. Kildare. The application for a Review of the Waste Licence is to increase the maximum annual tonnage of waste acceptable for landfill from 220,000 tonnes per annum to 275,000 tonnes per annum.

The disposal of putrescible wastes is not permitted under the terms of this licence and no hazardous wastes, liquid wastes, sludges (other than dewatered non-hazardous industrial sludge/filtercake with >25% solids), vegetable matter wastes, food-stuff wastes or green wastes shall be disposed of in the landfill. Construction waste containing asbestos will be allowed in accordance with the landfill directive and any procedures adopted by the Landfill Directive Technical Adaption Committee. The infrastructure at the facility includes access roads, site offices, two weighbridges, a leachate collection and management system including leachate storage and monitoring infrastructure.

The facility was constructed in 1999 and has a total capacity of approximately 1,540,500 tonnes. The increase tonnage accepted at the facility will shorten the operational life of the landfill.

The licence sets out in detail the conditions under which KTK Landfill Limited will operate and manage this facility.

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# DECISION & REASONS FOR THE DECISION

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

In reaching this decision the Agency has considered the application and supporting documentation received from the applicant, all submissions and objections received 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 Agency, under Section 40(1) of the said Act hereby grants this Waste Licence to KTK Landfill Limited, Brownstown and Carnalway, County Kildare to carry on the waste activities listed below at Brownstown and Carnalway, Kilkullen, County Kildare subject to twelve 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

<b>Class 1.</b>	<b>Deposit on, in or under land (including landfill):</b> This activity is limited to the disposal of the waste types specified in this licence.
<b>Class 5.</b>	<b>Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.</b> This activity is limited to the disposal of the waste types specified in this licence.
<b>Class 11.</b>	<b>Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.</b> This activity is limited to the blending and mixture of certain types of waste, e.g. heavy and light wastes, prior to disposal.
<b>Class 13.</b>	<b>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.</b> This activity is limited to the storage of waste, prior to disposal at an alternative appropriate facility, of waste not acceptable for disposal at this facility.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Act 1996

<b>Class 3.</b>	<b>Recycling or reclamation of metals and metal compounds:</b> This activity is limited to receipt, holding and collection of metals and wire found in construction and demolition wastes.
<b>Class 4.</b>	<b>Recycling or reclamation of other inorganic materials:</b> This activity is limited to receipt, holding and reusing inert construction and demolition wastes such as clay, topsoil, broken concrete and asphalt.
<b>Class 13.</b>	<b>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:</b> This activity is limited to the storage of inert materials prior to processing and reuse and storage of metals.

# INTERPRETATION

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Act, (the Act), unless otherwise defined in this section.

<b>Adequate lighting</b>	20 lux measured at ground level.
<b>Agreement</b>	Agreement in writing.
<b>Annually</b>	At approximately twelve monthly intervals.
<b>Attachment</b>	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
<b>Application</b>	The application by the licensee for this review of a waste licence.
<b>Appropriate facility</b>	A waste management facility, duly authorised under relevant law and technically suitable.
<b>Condition</b>	A condition of this licence.
<b>Construction and Demolition Waste</b>	All wastes which arise from construction, renovation and demolition activities.
<b>Containment boom</b>	A boom which can contain spillages and prevent them from entering drains or watercourses.
<b>Cover material</b>	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.
<b>Daily Cover</b>	Is the term used to describe material spread (about 150mm if soil cover is used) over deposited waste at the end of each day. Synthetic materials may also be used. Its objective is to minimise odour, the amount of litter generated and to control flies and access to the waste by birds and vermin. Where soils are used for daily cover, it is recommended that they be removed at the start of the day and subsequently reused as much as possible.
<b>Daytime</b>	8.00 a.m. to 10.00 p.m.
<b>Documentation</b>	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
<b>Drawing</b>	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
<b>Emergency</b>	Those occurrences defined in Condition 9.5.
<b>Emission Limits</b>	Those limits, including concentration limits and deposition levels established in <i>Schedule C: Emission Limits</i> , of this licence.
<b>European Waste Catalogue (EWC)</b>	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.

<b>Green waste</b>	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
<b>Hours of Operation</b>	The hours during which the facility is authorised to be operational. The hours of operation of a facility are usually longer than the hours of waste acceptance to facilitate preparatory and completion works, such as the removal and laying of daily cover. Different activities within the facility, such as the landfill and the civic waste facility, may have different hours of operation.
<b>Hours of Waste Acceptance</b>	The hours during which the facility is authorised to accept waste. Different activities within the facility, such as the landfill and the civic waste facility, may have different hours of waste acceptance.
<b>Incident</b>	Any reference to an incident in this licence means an incident as defined in Condition 1.7.
<b>Inert waste</b>	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.
<b>Intermediate Cover</b>	Refers to placement of material (minimum 300mm if soil is used) for a period of time prior to restoration or prior to further disposal of waste.
<b>Landfill</b>	Refers to the area of the facility where the waste is disposed of by placement on the ground or on other waste.
<b>Landfill Gas</b>	Gases generated from the landfilled waste.
<b>LEL (Lower Explosive Limit)</b>	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.
<b>Licence</b>	A Waste Licence issued in accordance with the Act.
<b>Licensee</b>	KTK Landfill Limited, Brownstown/Carnalway, Kilcullen, County Kildare.
<b>List I/II Organics</b>	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC.
<b>Liquid Waste</b>	Any waste in liquid form and containing less than 2% dry matter. Any waste tankered to the facility.
<b>Maintain</b>	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
<b>Mobile Plant</b>	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
<b>Monthly</b>	A minimum of 12 times per year, at approximately monthly intervals.
<b>Night-time</b>	10.00 p.m. to 8.00 a.m.

<b>Waste Construction Materials containing Asbestos EWC/HWL – 17 06 05*</b>	Includes bonded asbestos, such as tiles, which are authorised for disposal at the facility.
<b>Recyclable Materials</b>	Those waste types, such as cardboard, batteries, gas cylinders, etc, which may be recycled.
<b>Quarterly</b>	At approximately three monthly intervals.
<b>Sample(s)</b>	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
<b>Sludge</b>	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 25% dry matter.
<b>Specified Emissions</b>	Those emissions listed in <i>Schedule C: Emission Limits</i> of this licence.
<b>Specified Engineering Works</b>	Those engineering works listed in <i>Schedule B: Specified Engineering Works</i> of this licence.
<b>Treated Sludge</b>	Sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as to significantly reduce its fermentability and the health hazards resulting from its use.
<b>Trigger Level</b>	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
<b>White Goods</b>	Refrigerators, cookers, ovens and other similar appliances.
<b>EPA Working Day</b>	Refers to the following hours; 9.00 a.m. to 5.30 p.m. Monday to Friday inclusive.
<b>Working Face</b>	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 OF THE LICENCE**

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and authorised by this licence.
- 1.2. For the purposes of this licence, the facility is the area of land outlined in red on Figure B.2.1. "Site Location Map – September 1998" of the application. Any reference in this licence to "facility" shall mean the area thus outlined in red.
- 1.3. This licence is for the purposes of waste licensing under the Waste Management Act 1996 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.4. Commercial Waste and Industrial Waste may be recovered and disposed of at the facility subject to the maximum quantities and other constraints listed in Schedule A and Condition 1.5, unless otherwise agreed with the Agency. Subject to the constraints of Schedule A and Condition 1.5, only those Waste Types listed in Tables E.1.1, E.1.3 and E.1.4 of the application shall be disposed of at the landfill.
- 1.5. No hazardous wastes, liquid wastes, sludges, (other than dewatered non-hazardous industrial sludge/filtercake >25% solids), vegetable matter wastes, food-stuff wastes or green wastes shall be disposed of in the landfill. Construction waste containing asbestos will be allowed in accordance with the Landfill Directive and with any procedures agreed by the Landfill Directive Technical Adaption Committee.
- 1.6. Waste Acceptance Hours and Hours of Operation
  - 1.6.1 Landfill
    - 1.6.1.1 Waste shall only be accepted at the facility for disposal at the landfill between the hours of 7:00 a.m. and 5:30 p.m. Monday to Friday inclusive and 7:00 a.m. and 3:30 p.m. on Saturdays.
    - 1.6.1.2 The hours of operation at the facility shall be between the hours of 7:00 a.m. and 6:00 p.m. on Monday to Friday inclusive and 7:00 a.m. and 4:00 p.m. on Saturdays.
    - 1.6.1.3 Waste shall not be accepted at the landfill on Sundays or Bank Holidays.
- 1.7. The following shall constitute an incident for the purposes of this licence:
  - a) an emergency;
  - b) any emission which does not comply with the requirements of this licence;
  - c) any trigger level specified in this licence which is attained or exceeded;
  - d) any indication that environmental pollution has, or may have, taken place; and
  - e) rejection of any waste load at the facility.
- 1.8. Where the Agency considers that a non-compliance with any condition of this licence has occurred, it may serve a notice on the licensee specifying:
  - 1.8.1 That only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice;



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

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

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

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

1.10 This licence is being granted in substitution for the waste licence granted to the licensee on 12<sup>th</sup> April 1999 and bearing Waste Licence Register No: 81-1. The previous waste licence (Register No: 81-1) is superseded by this licence.

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

## **CONDITION 2 MANAGEMENT OF THE FACILITY**

### **2.1 Facility Management**

2.1.1 The licensee shall employ a suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced, deputy shall be present on the facility at all times during its operation.

2.1.2 Both the facility manager and deputy, and any replacement manager or deputy, shall have successfully completed both the FAS waste management training programme (or equivalent agreed with the Agency) and associated on site assessment appraisal within twelve months of appointment.

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

### **2.2 Management Structure**

2.2.1 Within three months from the date of grant of this licence, the licensee shall submit written updated details of the management structure of the facility to the Agency. Any proposed replacement in the management structure shall be notified in advance in writing to the Agency. 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, in particular the name of the facility manager and any nominated deputies;
- b) details of the responsibilities for each individual named under a) above; and

- c) details of the relevant education, training and experience held by each of the persons nominated under a) above.

## 2.3 Environmental Management System (EMS)

2.3.1 The licensee shall maintain an Environmental Management System (EMS). Within twelve months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement, a proposal for the updating (where appropriate) of the documented EMS for the facility. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

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

### 2.3.2.1 Schedule of Environmental Objectives and Targets

The objectives should be specific and the targets measurable. The Schedule shall address a five-year period as a minimum. The Schedule shall include a time-scale for achieving the objectives and targets and shall comply with any other written guidance issued by the Agency.

### 2.3.2.2 Environmental Management Plan (EMP)

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

- (i) the items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency;
- (ii) methods by which the objectives and targets will be achieved and the identification of those responsible for achieving those objectives and targets;
- (iii) any other items required by written guidance issued by the Agency.

### 2.3.2.3 Corrective Action Procedures

The Corrective Action Procedures shall detail the corrective actions to be taken should any of the procedures detailed in the EMS not be followed or should specified requirements of this licence not be fulfilled.

### 2.3.2.4 Awareness and Training Programme

The Awareness and Training Programme shall identify training needs, for personnel who work in or have responsibility for the licensed facility.

## 2.4 Communications Programme

2.4.1 The licensee shall maintain a Communications Programme to ensure that members of the public can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility.

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

## CONDITION 3 FACILITY INFRASTRUCTURE

3.1 The licensee shall establish all infrastructure referred to in this licence as required by the conditions of this licence.

### 3.2 Specified Engineering Works

3.2.1 The licensee shall submit proposals for all Specified Engineering Works, as defined in *Schedule B: 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.

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

3.2.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall include the following information;

- a) a description of the works;
- b) as-built drawings of the works;
- c) records and results of all tests carried out (including failures);
- d) drawings and sections showing the location of all samples and tests carried out;
- e) daily record sheets/diary;
- f) name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
- g) name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;
- h) records of any problems and the remedial works carried out to resolve those problems; and
- i) any other information requested in writing by the Agency.

### 3.3 Facility Notice Board

3.3.1 The licensee shall provide and maintain a Facility Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm.

3.3.2 The board shall clearly show:

- a) the name and telephone number of the facility;
- b) the normal hours of opening;
- c) the name of the licence holder;
- d) an emergency out of hours contact telephone number;
- e) the licence reference number; and
- f) where environmental information relating to the facility can be obtained.

### 3.4 Facility Security

- 3.4.1 Security and stockproof fencing and gates shall be installed and maintained as shown in Drawing No. KTK/411 Rev C dated March '01 in the application. The security fence and gates shall be at the locations shown on Drawing No. KTK/411 REV C. The base of the fencing shall be set in the ground.
- 3.4.2 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.
- 3.5 Facility Roads and Hardstanding
- 3.5.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.
- 3.5.2 A hardstanding area shall be maintained at the location and in accordance with the detail shown on Drawing No. KTK/606 Rev. C "Phase 1 Base Development and Platform Layout" in the application.
- 3.6 Facility Office
- 3.6.1 The licensee shall provide and maintain an office at the facility. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.
- 3.6.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.
- 3.7 Waste Inspection and Quarantine Areas
- 3.7.1 A Waste Inspection Area and Quarantine Area shall be maintained at the location shown in KTK/606 Rev. C "Phase 1 Base Development and Platform Layout" in the application. The licensee shall ensure that this area is maintained in a manner suitable and be of a size appropriate for the inspection of waste and subsequent quarantine if required.
- 3.7.2 The waste inspection area and the waste quarantine area shall be clearly identified and segregated from each other.
- 3.7.3 Drainage from these areas shall be directed to the leachate collection system as shown in Drawing No. KTK/606 Rev. C "Phase 1 Base Development and Platform Layout" in the application.
- 3.8 Weighbridge
- 3.8.1 The licensee shall provide and maintain a weighbridge at the facility.
- 3.9 Wheel Cleaning
- 3.9.1 The licensee shall maintain a wheelwash/dry wheel shake at the facility as shown in Drawing No. KTK/606 Rev. C "Phase 1 Base Development and Platform Layout" in the application.
- 3.10 Waste Water Treatment Plant
- 3.10.1 The licensee shall provide and maintain a Wastewater Treatment plant at the facility for the treatment of wastewater arising on-site. Any percolation area shall satisfy the criteria

set out in the Wastewater Treatment Manual, *Treatment Systems for Single Houses*, published by the Environmental Protection Agency.

### 3.11 Tank and Drum Storage Areas

3.11.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein.

3.11.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:

- (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.

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

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

3.11.5 The integrity and water tightness of all the bunds and their resistance to penetration by water or other materials stored therein shall be confirmed by the licensee and shall be reported to the Agency by the 31<sup>st</sup> January 2004. This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.

### 3.12 Landfill Lining:

3.12.1 The landfill liner for all future cells shall comprise:

- (i) a composite liner consisting of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to  $1 \times 10^{-9}$  m/s, (or equivalent to be agreed with the Agency) overlain by a 2mm thick high density polyethylene (HDPE) layer;
- (ii) a geotextile protection layer placed over the HDPE layer;
- (iii) a 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of  $1 \times 10^{-3}$  m/s, of pre-washed, uncrushed, granular, rounded stone (16 - 32mm grain size) incorporating leachate collection drains;
- (iv) the side walls shall be designed and constructed to achieve an equivalent protection.

3.12.2 The liner detailed design and its construction shall be in accordance with the guidelines provided in the Agency's Landfill Manual, Landfill Site Design.

### 3.13 Leachate Management Infrastructure

3.13.1 Unless otherwise agreed with the Agency, leachate management infrastructure shall be provided and maintained at the facility as described in Attachment D.1 of the Application.

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

### 3.14 Landfill Gas Management

3.14.1 Landfill gas management infrastructure shall be provided and maintained at the facility as described in Attachment D.5 – "Landfill Gas Management", of the Application. The licensee shall, within three months of the date of grant of this licence, submit to the Agency for its agreement, an updated proposal, with timeframes for the active collection and flaring of landfill gas.

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

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

### 3.15 Surface Water Management

3.15.1 Surface water management shall be provided as described in Attachment H.9 of the application.

### 3.16 Monitoring Infrastructure

3.16.1 The licensee shall provide and maintain all sampling and monitoring points required by this licence so that they may be used for the representative sampling and monitoring of emissions from the facility.

#### 3.16.2 Landfill Gas

The licensee shall maintain an effective permanent gas monitoring system in the site office.

#### 3.16.3 Replacement of Infrastructure

Unless otherwise agreed with the Agency, monitoring infrastructure which is damaged or proves to be unsuitable for its purpose shall be replaced within three months of it being damaged or recognised as being unsuitable.

*REASON: To provide appropriate infrastructure for the protection of the environment.*

## **CONDITION 4 RESTORATION AND AFTERCARE**

4.1. The licensee shall restore the facility on a phased basis. The Restoration and Aftercare Plans for the facility shall be as stated in Attachments G.1 and G.2 of the Application.

4.2. The final profile/height of the facility shall be as shown in Drawing No. KTK/703 Rev C. – "Capping Layer Design Contours", mOD Malin Head.

#### 4.3. Final Capping

4.3.1. The 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 0.3m thickness having a minimum hydraulic conductivity of  $1 \times 10^{-4}$  m/s;
- d) compacted mineral layer of a minimum 0.5m thickness with a permeability of less than  $1 \times 10^{-9}$  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.gas

- 4.4. No material or object that is incompatible with the proposed restoration of the facility shall be present within one metre of the final soil surface levels.
- 4.5. Where tree planting is to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Combined topsoil and subsoil depths shall be a minimum of 1m.
- 4.6. Soil Storage
- 4.6.1. All soils shall be stored to preserve the soil structure for future use.

*REASON: To provide for the restoration of the facility*

## **CONDITION 5 FACILITY OPERATION AND WASTE MANAGEMENT**

- 5.1 Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency.
- 5.2 Waste Acceptance and Characterisation Procedures
- 5.2.1 Waste Acceptance Procedures shall be carried out in accordance with Attachment E.4 “Waste Acceptance Procedures” of the application.
- 5.3 All wastes shall be inspected and documented at the working face. Any wastes not suitable for acceptance shall be removed for recovery or disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area only. No waste shall be stored in the Waste Quarantine Area for more than three months.
- 5.4 Whole used tyres (other than bicycle tyres and tyres with an outside diameter of greater than 1400 mm) shall not be disposed of at the facility from 16 July 2003. Shredded tyres shall not be disposed of at the facility from 16 July 2006.
- 5.5 Working Face
- 5.5.1 Unless the prior agreement of the Agency is given, the following shall apply at the landfill:
- a) only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials; and
  - b) the working face of the landfill shall be no more than 3.5 metres in height after compaction, no more than 35 metres wide and have a slope no greater than 1 in 3.
- 5.5.2 All waste deposited at the working face shall be compacted, using a steel wheeled compactor, and covered as soon as is practicable and at any rate prior to the end of the working day.
- 5.5.3 The working face, or faces, shall each day at the end of the day, be covered with suitable material.
- 5.6 Daily and Intermediate Cover
- 5.6.1 Any cover material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.
- 5.6.2 Appropriate cover material shall be placed across the whole landfill so that no waste, other than the following is exposed:

- a) waste suitable for specified engineering works; and
- b) waste on the working face during the operational hours of the facility.

## 5.7 Operational Controls

- 5.7.1 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.7.2 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over, with the exception of works associated with the installation of the landfill gas or leachate collection systems only, without the prior agreement from the Agency.
- 5.7.3 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.
- 5.7.4 Scavenging shall not be permitted at the facility.
- 5.7.5 Gates shall be locked shut when the facility is unsupervised.
- 5.7.6 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.7.7 Fuels shall only be stored at appropriately banded locations on the facility.
- 5.7.8 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.7.9 No smoking shall be allowed on the facility other than in the Office as shown on Drawing No. KTK/611 Rev.B "Main Office Area" April '00, in the application.

## 5.8 Waste Handling

### 5.8.1 Dewatered Industrial Sludges and Filtercakes

- 5.8.1.1 Only treated industrial non-hazardous sludges/filtercakes with >25% solids may be disposed of at the facility. Such dewatered sludges and cakes shall be covered immediately with other waste.

### 5.8.2 Waste Construction Materials containing asbestos

- 5.8.2.1 Waste Construction Materials containing asbestos (EWC/HWL 17 06 05\*) may be disposed of at the facility. Disposal of this waste shall be into prepared bays or trenches of at least 2 metres in depth.
  - 5.8.2.2 Waste Construction Materials containing asbestos must be double wrapped in heavy gauge plastic which is clearly labelled to indicate the presence of asbestos.
  - 5.8.2.3 Waste Construction Materials containing asbestos 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.
  - 5.8.2.4 No hazardous asbestos waste shall be present within 2.5 metres of the final surface levels.
- 5.8.3 From the 16/07/2002, construction materials containing asbestos shall only be disposed of at the facility in accordance with the requirements of the Landfill Directive, or any procedures agreed under Article 17 thereof. The licensee shall submit to the Agency



procedures for the disposal of materials containing asbestos within one month of measures being adopted under the aforementioned Article 17.

#### 5.9 Off-site Disposal and Recovery

- 5.9.1 Waste sent off-site for recovery or disposal shall only be conveyed by a waste contractor agreed by the Agency;
- 5.9.2 All waste transferred from the facility shall only be transferred to an appropriate facility agreed by the Agency;
- 5.9.3 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.

#### 5.10 Leachate Management

- 5.10.1 Leachate levels in the waste shall not exceed a level of 1.0m over the top of the liner at the base of the landfill.
- 5.10.2 The level of leachate in the pump sumps shall be monitored as set out in *Schedule D Monitoring, Table D.1.1* of this licence.
- 5.10.3 Leachate stored in the leachate storage tank shall be disposed of by tankering off-site in fully enclosed road tankers.
- 5.10.4 Recirculation of leachate shall only be carried out using the pipework and infiltration system and on-site pumping system as described in Attachment D.4.m Leachate Recirculation, in the application and in any case, shall only be undertaken within cells which have been lined to the satisfaction of the Agency. Leachate shall not be applied to the waste using a tractor and bowser unless otherwise agreed with the Agency.

#### 5.11 Maintenance

- 5.11.1 All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer. Written records of the calibrations and maintenance shall be made and kept by the licensee.
- 5.11.2 The licensee shall maintain and clearly label and name all sampling and monitoring locations.
- 5.11.3 The wheel-wash shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel-wash and disposed of at the working face.

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

## **CONDITION 6 EMISSIONS**

- 6.1. No specified emission from the facility shall exceed the emission limit values set out in *Schedule C: Emission Limits* of this licence. There shall be no other emissions of environmental significance.
- 6.2. 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.

6.3. Landfill Gas

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

- a) Methane, greater than or equal to 1.0% v/v; or
- b) Carbon dioxide, greater than or equal to 1.5% v/v.

6.4. Emissions to Surface Water

6.4.1. All surface water collected from the hardstanding areas of the facility and from lined cells shall be diverted to the leachate holding tank and treated as leachate.

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

6.5. Emissions to Groundwater

6.5.1. There shall be no direct emissions to groundwater.

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

6.6. Disposal of Leachate

6.6.1. No leachate shall be discharged to surface water.

6.6.2. All leachate or contaminated water tankered from the facility shall be transported to Athy Waste Water Treatment Plant and disposed of there, unless otherwise agreed with the Agency. The quantity disposed of shall be restricted to 55m<sup>3</sup> per day without the prior agreement of the Sanitary Authority. Procedures for the disposal of leachate at the treatment plant shall be in accordance with any written requirements of the Sanitary Authority.

6.6.3. Unless otherwise agreed in advance with the Agency and the Sanitary Authority, no specified discharge or emission to sewer shall exceed the emission limit value set out in the *Schedule C.4 Leachate Tankered to the Wastewater Treatment Plant*. There shall be no other discharge or emission to sewer of environmental significance.

6.6.4. No substance shall be present in emissions to sewer in such concentrations as would constitute a danger to sewer maintenance personnel working in the sewerage system, or as would be damaging to the fabric of the sewer, or as would interfere with the biological functioning of a downstream wastewater treatment works.

6.6.5. The licensee shall permit authorised persons of the Agency and the Sanitary Authority to inspect, examine and test, at all reasonable times, any works and apparatus installed, in connection with the discharge or emission, and to take samples of the discharge or emission.

6.6.6. No discharge or emission to sewer shall take place which might give rise to any reaction within the sewer or to the liberation of by-products which may be of environmental significance.

6.6.7. The licensee shall ensure that the discharge shall not contain dissolved methane, petroleum spirits or organic solvents (including chlorinated organic solvents), at concentrations which would give rise to flammable or explosive vapours in the sewer.

- 6.6.8. Non-trade effluent wastewater (e.g. firewater, accidental spillage) which occurs on-site shall not be discharged to the sewer without the prior authorisation of the Sanitary Authority.
- 6.6.9. The licensee shall submit monitoring results to the Sanitary Authority on an annual basis.
- 6.6.10. Emission limit values for leachate tankered to Athy Wastewater Treatment Plant or other agreed WWTP in this licence shall be interpreted in the following way:-
  - a) No grab sample shall exceed 1.2 times the emission limit value.

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

## **CONDITION 7 NUISANCE CONTROL**

- 7.1 The licensee shall ensure that vermin, birds, flies, mud, dust, litter and odours do not give rise to nuisance at the facility or in the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution.
- 7.2 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.
- 7.3 Litter Control
  - 7.3.1 The measures and infrastructure as described in Section 7.15 “*Litter Abatement Methods and Procedures*” of the Environmental Management Plan submitted with the Application shall be applied to control litter at the facility.
  - 7.3.2 All loose litter or other waste, placed on or in the vicinity of the facility, other than in accordance with the requirements of this licences, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working day after such waste is discovered.
  - 7.3.3 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.
- 7.4 Dust Control
  - 7.4.1 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.
- 7.5 Prior to exiting the facility, all waste vehicles shall use the wheelwash.

*REASON: To provide for the control of nuisances*

## **CONDITION 8 MONITORING**

- 8.1. The licensee shall carry out such monitoring and at such locations and frequencies as set out in *Schedule D: Monitoring* of this licence and as specified in this licence.
- 8.2. The licensee shall amend the frequency, locations, methods and scope of monitoring as required by this licence 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.

- 8.3. 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, discharge or environmental parameter.
- 8.4. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.
- 8.5. Landfill Gas
  - 8.5.1. All landfill gas monitoring equipment, other than permanent monitoring systems within buildings, shall be certified as being intrinsically safe.
- 8.6. Groundwater Monitoring
  - 8.6.1. Subject to the agreement of the well owners, all private wells within 500m of the facility shall be included in the monitoring programme set out in *Schedule D: Monitoring* of this licence.
- 8.7. Leachate Monitoring
  - 8.7.1. Leachate levels within the filled waste shall be monitored as set out in Table D.1.1.
- 8.8. Topographical Survey
  - 8.8.1. A topographical survey which shall include a measurement of the remaining available void space shall be carried out annually. The survey shall be in accordance with any written instructions issued by the Agency.
- 8.9. Stability Assessment
  - 8.9.1. Within six months of the date of grant of this licence, and annually thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility.
- 8.10. Nuisance Monitoring
  - 8.10.1. The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours.

<p><i>REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions</i></p>
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## **CONDITION 9    CONTINGENCY ARRANGEMENTS**

- 9.1. In the event of an incident 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 arising therefrom;
  - c) isolate the source of any such 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) identify and put in place measures to avoid recurrence of the incident; and
  - g) identify and put in place any other appropriate remedial action.
- 9.2. Contingency Arrangements for the facility shall be as detailed in Attachment K.1 “Contingency Arrangements” of the application.
- 9.3. The licensee shall maintain written Emergency Response Procedures (ERP) at the facility. 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.
- 9.4. The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.
- 9.5. Emergencies
- 9.5.1. 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;
  - 9.5.2. No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities;
  - 9.5.3. 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 emergency and the licensee shall provide an alternative supply of water to those affected;
  - 9.5.4. In the event that monitoring of the slide slopes of the facility indicate that there may be a risk of slope failure this will be treated as an emergency.

*REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions*

## **CONDITION 10 RECORDS**

- 10.1 The licensee shall keep the following documents at the facility office.
- 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.
- 10.2 The licensee shall maintain a written record for each load of waste arriving at the facility. The licensee shall record the following:
- a) the date;
  - b) the name of the carrier (including if appropriate, the waste carrier registration details);
  - 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 appropriate) from which the load originated including the waste licence or waste permit register number;
- f) a description of the waste including the associated EWC/HWL 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.

### 10.3 Written Records

The following written records shall be maintained by the licensee:

- a) the types and quantities of waste recovered and disposed of at the facility each year. These records shall include the relevant EWC / HWL Codes;
- b) all training undertaken by facility staff;
- c) results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;
- d) details of all nuisance inspections; and
- e) the names and qualifications of all persons who carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring.

### 10.4 The licensee shall maintain a written record of all complaints relating to the operation of the facility. 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.

### 10.5 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.

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

- a) the date and time during which spraying of insecticide is carried out;
- b) contractor details;
- c) contractor logs and site inspection reports;

- d) details of the rodenticide(s) and insecticide(s) used;
- e) operator training details;
- f) details of any infestations;
- g) mode, frequency, location and quantity of application; and,
- h) measures to contain sprays within the facility boundary.

*REASON: To provide for the keeping of proper records of the operation of the facility*

## **CONDITION 11 REPORTS AND NOTIFICATIONS**

11.1 Unless otherwise agreed by the Agency, all reports and notifications submitted to the Agency shall:

- a) be sent to the Agency's headquarters;
- b) comprise one original and three copies unless additional copies are required;
- 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, such as in *Schedule E: Recording and Reporting to the Agency* of this licence;
- g) be accompanied by a written interpretation setting out their significance in the case of all monitoring data; and
- h) be transferred electronically to the Agency's computer system if required by the Agency.

11.2 In the event of an incident occurring on the facility, the licensee shall:

- a) notify the Agency as soon as practicable and in any case not later than 10.00 a.m. the following working day after the occurrence of any incident;
- b) submit a written record of the incident, including all aspects described in Condition 9.1(a-g), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident; and
- c) in the event of any incident which relates to discharges to surface/sewer water, notify the Eastern Regional Fisheries Board and/or Kildare County Council as soon as practicable and in any case not later than 10:00 a.m. on the following working day after such an incident.
- d) Should any further actions be taken 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.

11.3 Annual Environmental Report

- 11.3.1 The licensee shall submit to the Agency for its agreement, an Annual Environmental Report (AER), by the 31<sup>st</sup> January 2002 and within one month of the end of each year thereafter.
- 11.3.2 The AER shall include as a minimum the information specified in *Schedule F: Content of Annual Environmental Report* of this licence and shall be prepared in accordance with any relevant written guidance issued by the Agency.
- 11.4 The licensee shall, by 16<sup>th</sup> July 2002, submit to the Agency for its agreement, a Conditioning Plan for the facility as required by Council Directive 1999/31/EC on the landfill of waste. The Conditioning Plan shall include the particulars listed in Article 8 and any corrective measures which the operator considers will be needed to comply with the requirements of this Directive, with the exception of the requirements in Annex I, point 1.
- 11.5 Operation in Adverse Wind Conditions
- 11.5.1 Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement proposals for the operation of the facility in adverse wind conditions.

*REASON: To provide for proper reports to and notifications to the Agency.*

## **CONDITION 12 CHARGES AND FINANCIAL PROVISIONS**

### 12.1 Agency Charges

- 12.1.1 The licensee shall pay to the Agency an annual contribution of £11,616 (€14,749) 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 2003 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 2002, the licensee shall pay a pro rata amount from the date of this licence to 31<sup>st</sup> December, 2002. This amount shall be paid to the Agency within one month of the date of grant of this licence.
- 12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased the licensee shall contribute such sums as determined by the Agency to defraying its costs.

### 12.2 Financial Provision for Closure, Restoration and Aftercare

- 12.2.1 The licensee shall submit a revised Environmental Liabilities Risk Assessment for the facility which will address liabilities arising from the carrying on of the activities to which this licence relates. A report on this assessment shall be submitted to the Agency for its agreement within six months of date of grant of this licence.
- 12.2.2 The licensee shall maintain a Financial Provision to cover any liabilities incurred by the licensee in carrying on the activities to which this licence relates. Such provision shall be maintained by the licensee unless otherwise agreed by the Agency.



12.2.3 The amount of financial provision, held under condition 12.2.2 shall be reviewed and revised as necessary, but at least annually. Any proposal for such a revision shall be submitted to the Agency for its agreement.

12.2.4 The licensee shall within two weeks of purchase, renewal or revision of the financial provision required under condition 12.2.2, forward to the Agency written proof of such indemnity.

12.2.5 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.

12.3 The licensee shall ensure the costs in the setting up, operation of, provision of financial security and closure and aftercare for a period of at least 30 years shall be covered by the price to be charged for the disposal of waste at the facility.

12.4 Sanitary Authority Charges

12.4.1 Sanitary Authority charges of £1.00 (€1.27) per cubic metre of leachate at 500ppm COD shall be made payable to the Sanitary Authority directly on an annual basis. Monitoring costs incurred by the Sanitary Authority shall also be defrayed by the licensee. Sanitary Authority charges will increase from time to time in response to increased costs in providing drainage and monitoring.

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

## SCHEDULE A : Waste Acceptance

### A.1 Waste Acceptance

Table A.1 Waste Categories and Quantities

WASTE TYPE	MAXIMUM (TONNES PER ANNUM)
Commercial	222,750
Construction and Demolition	10,750
Industrial Non-Hazardous Solids	24,750
Dewatered Industrial Non-Hazardous Sludges/Filtercakes	13,750
Construction Materials containing Asbestos – EWC 17/06/05*	3,000
<b>TOTAL</b>	<b>275,000</b>

## SCHEDULE B : Specified Engineering Works

Specified Engineering Works
Development of Phases and future cells of the facility including preparatory works and lining.
Final capping.
Fencing and site security works.
Bunding of fuel and oil storage areas.
Installation of Landfill Gas Management Infrastructure and Monitoring Systems.
Installation of Leachate Management Infrastructure
Installation of Groundwater Control Infrastructure and/or Monitoring Systems.
Surface Water Management Works.
Any other works notified in writing by the Agency.

## SCHEDULE C :Emission Limits

**C.1 Dust Deposition Limits:** (Measured at the monitoring points indicated in *Schedule D.1 Monitoring Locations - Table D.1.1.*)

Level (mg/m <sup>2</sup> /day) <sup>Note 1</sup>
350

**Note 1:** 30 day composite sample with the results expressed as mg/m<sup>2</sup>/day.

**C.2 Noise Emissions:** (Measured at the perimeter of the facility).

Day dB(A) L <sub>Aeq</sub> (30 minutes)	Night dB(A) L <sub>Aeq</sub> (30 minutes)
55	45

**C.3 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

**C.4 Leachate Tankered to the Wastewater Treatment Plant.**

pH	COD <sup>Note 1</sup>	BOD <sup>Note 1</sup>
6 - 8	25,000 mg/l	10,000 mg/l

**Note 1:** This limit may be altered subject to the prior written agreement of the Sanitary Authority.

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

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

Location: Location of Landfill Gas Combustion Plant and/or flarestacks, to be agreed with the Agency.

Volume to be emitted: To be agreed with the Agency.

Minimum discharge height: To be agreed with the Agency.

Parameter	Emission Limit Value <sup>Note 1</sup>
Nitrogen oxides as (NO <sub>2</sub> )	500 mg/m <sup>3</sup> for Combustion Plants 250 mg/m <sup>3</sup> for Flare Stacks
CO	650 mg/m <sup>3</sup> for Combustion Plants 50 mg/m <sup>3</sup> for Flare Stacks
Particulates	130 mg/m <sup>3</sup>
TA Luft Organics Class I <sup>(Note 2)</sup>	20 mg/m <sup>3</sup> (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II <sup>(Note 2)</sup>	100 mg/m <sup>3</sup> (at mass flows > 2 kg/hr)
TA Luft Organics Class III <sup>(Note 2)</sup>	150 mg/m <sup>3</sup> (at mass flows > 3kg/hr)
Hydrogen Chloride	50 mg/m <sup>3</sup> (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m <sup>3</sup> (at mass flows > 0.05 kg/h)

Hydrocarbons	10mg/m <sup>3</sup>
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**Note 1:** Dry gas referenced to 5% oxygen by volume.

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

## SCHEDULE D : Monitoring

Monitoring to be carried out as specified below.

### D.1 Monitoring Locations

Monitoring locations shall be those as set out in Table D.1.1 and as detailed in Table J.2 Monitoring Points and Grid Reference Locations of the application.

Table D.1.1 Monitoring Locations

LANDFILL GAS	DUST	NOISE	SURFACE WATER	GROUND WATER	LEACHATE
STATIONS	STATIONS	STATIONS	STATIONS	STATIONS	STATIONS
G1	D1A	N1A	SW4A	BH4	L
G2	D2A	N2A	SW5A	BH-11d	KTK/17
G3	D3A	N3A	SW6A	97-4	VMP1 <sup>Note 2</sup>
G4	D4A	N4A	SW7A	97-5d	VMP2 <sup>Note 2</sup>
G5	D5A	N5A	SW8A (KTK-18)	97-6d	VMP3 <sup>Note 2</sup>
G6		N6A		97-7d	VMP4 <sup>Note 2</sup>
G7		N8A		KTK-10	VMP5 <sup>Note 2</sup>
G8 <sup>Note 1</sup>		N12A		KTK-11	
G9 <sup>Note 1</sup>		N14A		KTK-15	
G10		N16A		KTK-16	
G11				Private Wells as per Condition 8.6.1. <sup>Note 3</sup>	
G12					
G13					
CP1					
CP2					
CP3					

**Note 1:** To be monitored as per Table D.2.1 after installation in 2002.

**Note 2:** Relates to monitoring of leachate levels only.

**Note 3:** Monitoring of private wells shall be carried out annually.

## D.2 Landfill Gas

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

Parameter	Monitoring Frequency		Analysis Method <sup>Note1</sup> /Technique <sup>Note2</sup>
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH <sub>4</sub> ) % v/v	Monthly	Continuous	Infrared analyser/flame ionisation detector
Carbon dioxide (CO <sub>2</sub> )%v/v	Monthly	Weekly	Infrared analyser/ flame ionisation detector
Oxygen(O <sub>2</sub> ) %v/v	Monthly	-	Electrochemical cell
Atmospheric Pressure	Monthly	-	Standard
Temperature	Monthly	-	Standard

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

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

## D.3 Dust

Table D.3.1 Dust Monitoring Frequency and Technique

Parameter (mg/m <sup>2</sup> /day)	Monitoring Frequency	Analysis Method/Technique
Dust	Three times per year. <sup>Note 2</sup>	Standard Method <sup>Note 1</sup>

**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) by 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.

## D.4 Noise

Table D.4.1 Noise Monitoring Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
L(A) <sub>EQ</sub> [30 minutes]	Annual	Standard <sup>Note 1</sup>
L(A) <sub>10</sub> [30 minutes]	Annual	Standard <sup>Note 1</sup>
L(A) <sub>90</sub> [30 minutes]	Annual	Standard <sup>Note 1</sup>
Frequency Analysis(1/3 Octave band analysis)	Annual	Standard <sup>Note 1</sup>

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

## D.5 Surface Water, Groundwater and Leachate

Table D.5.1 Water and Leachate - Parameters / Frequency

Parameter <sup>Note 1</sup>	SURFACE WATER*	GROUNDWATER	LEACHATE
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
<b>Odour/Visual Inspection</b> <sup>Note 2</sup>	Weekly	Quarterly	Biannually
<b>Groundwater Level</b>	Not Applicable	Monthly	Not Applicable
<b>Leachate Level</b>	Not Applicable	Not Applicable	Weekly
<b>Ammoniacal Nitrogen</b>	Quarterly	Quarterly	Biannually
<b>BOD</b>	Quarterly	Not Applicable	Biannually
<b>COD</b>	Quarterly	Not Applicable	Biannually
<b>Chloride</b>	Quarterly	Quarterly	Biannually
<b>Dissolved Oxygen</b>	Quarterly	Quarterly	Not Applicable
<b>Electrical Conductivity</b>	Quarterly	Quarterly	Biannually
<b>PH</b>	Quarterly	Not Applicable	Biannually
<b>Total Suspended Solids</b>	Quarterly	Not Applicable	Biannually
<b>Temperature</b>	Quarterly	Quarterly	Biannually
<b>Boron</b>	Not Applicable	Quarterly	Biannually
<b>Cadmium</b>	Quarterly	Quarterly	Biannually
<b>Calcium</b>	Quarterly	Quarterly	Biannually
<b>Chromium (Total)</b>	Quarterly	Quarterly	Biannually
<b>Copper</b>	Quarterly	Quarterly	Biannually
<b>Cyanide (Total)</b>	Not Applicable	Quarterly	Biannually
<b>Fluoride</b>	Not Applicable	Quarterly	Biannually
<b>Iron</b>	Quarterly	Quarterly	Biannually
<b>Nickel</b>	Quarterly	Quarterly	Biannually
<b>Lead</b>	Quarterly	Quarterly	Biannually
<b>List I/II organic substances</b> <sup>Note 2</sup>	Annually	Annually	Biannually
<b>Magnesium</b>	Quarterly	Quarterly	Biannually
<b>Manganese</b>	Quarterly	Quarterly	Biannually
<b>Mercury</b>	Quarterly	Quarterly	Biannually
<b>Potassium</b>	Quarterly	Quarterly	Biannually
<b>Sulphate</b>	Quarterly	Quarterly	Biannually
<b>Sodium</b>	Quarterly	Quarterly	Biannually
<b>Total Alkalinity</b>	Quarterly	Quarterly	Biannually
<b>Total Phosphorus / orthophosphate</b>	Quarterly	Quarterly	Biannually
<b>Total Oxidised Nitrogen</b>	Quarterly	Quarterly	Biannually
<b>Total Organic Carbon</b>	Quarterly	Quarterly	Biannually

Parameter <sup>Note 1</sup>	SURFACE WATER*	GROUNDWATER	LEACHATE
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
Residue on evaporation	Not Applicable	Quarterly	Not Applicable
Barium	Not Applicable	Quarterly	Not Applicable
Arsenic	Not Applicable	Quarterly	Not Applicable
Nickel	Not Applicable	Quarterly	Not Applicable
Zinc	Not Applicable	Quarterly	Not Applicable
Phenols	Not Applicable	Quarterly	Not Applicable
Faecal Coliforms <sup>Note 3</sup>	Annually	Annually	Not Applicable
Total Coliforms <sup>Note 3</sup>	Annually	Annually	Not Applicable

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

**Note 2:** 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 3:** In the case where groundwater is extracted for drinking water and there is evidence of bacterial contamination, analysis at monitoring points up-gradient and down-gradient of the landfill should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.

#### ***D.6 Meteorological Monitoring***

Table D.6.1 Meteorological Monitoring:

Data to be obtained from the meteorological monitoring station at the facility or a suitable alternative agreed with the Agency.

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Force and Direction	Daily	Standard
Evaporation	Daily	Standard
Evapotranspiration	Daily	Standard
Humidity	Daily	Standard
Atmospheric Pressure	Daily	Standard

## ***D.7 Asbestos Fibre Monitoring***

Table D.7.1. Asbestos Fibre Monitoring

Monitoring Locations: (1) Point of tipping, (2) 10m downwind of tipping.

<b>Parameter (fibres/ml)</b>	<b>Monitoring Frequency</b>	<b>Analysis Method/Technique</b>
<b>Asbestos Fibre Concentration</b>	Annual <sup>Note 1</sup>	Standard Method <sup>Note 2</sup>

**Note 1:** Where applicable samples to be taken during the disposal of asbestos based construction materials, or otherwise specified in writing by the Agency.

**Note 2:** Method used shall be “Asbestos Fibre in Air” Health and Safety Executive MDHS 39/4, UK (1995) or another method agreed with the Agency. Monitoring shall be carried out by an independent laboratory agreed with the Agency.



## SCHEDULE E :Recording and Reporting to the Agency

Report	Reporting Frequency <sup>Note1</sup>	Report Submission Date
Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	By 31 <sup>st</sup> January 2002 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	By 31 <sup>st</sup> January 2004 and one month after end of each three year period being reported on thereafter.
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.
Dust Monitoring	Every four months	One month after end of the period 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.
Topographical Survey Report	Annually	One month after end of the year being reported on.
Asbestos Fibre Monitoring	Annually	One month after end of the year being reported on.
Conditioning Plan	Once Off	By 16 <sup>th</sup> July 2002
Groundwater Monitoring Trigger Levels	Once Off	Within three months of the date of grant of this licence.
Active Collection and Flaring of Landfill Gas Proposal	Once Off	Within three months of the date of grant of this licence.
Adverse Wind Conditions Proposal	Once Off	Within three months of the date of grant of this licence.
Any other monitoring	As they occur	Within ten days of obtaining results.

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

# **SCHEDULE F :Content of the Annual Environmental Report**

## **Annual Environmental Report Content**

Reporting Period.

Waste activities carried out at the facility.

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

Calculated remaining capacity of the facility and year in which final capacity is expected to be reached.

Methods of deposition of waste.

Summary report on emissions.

Summary of results and interpretation of environmental monitoring, including plans of all monitoring locations including 12 digit grid references.

Resource and energy consumption summary.

Proposed development of the facility and timescale of such development.

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

Report on development works undertaken during the reporting period, and a timescale for those proposed during the coming year.

Report on restoration of completed cells/ phases.

Site survey showing existing levels of the facility at the end of the reporting period.

Estimated annual and cumulative quantities of landfill gas emitted from the facility.

Estimated annual and cumulative quantity of indirect emissions to groundwater.

Annual water balance calculation and interpretation.

Topographical Report.

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.

Progress on achievement of waste recovery targets

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.

**Sealed by the seal of the Agency on this the 8<sup>th</sup> day of April, 2002.**

**PRESENT when the seal of the Agency  
was affixed hereto:**

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**Anne Butler, Director/Authorised Person**

