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**WASTE LICENCE  
Recommended Decision**

<b>Licence Register Number:</b>	81-3
<b>Applicant/Licensee:</b>	KTK Landfill Ltd.
<b>Location of Facility:</b>	Brownstown and Camalway, Kilcullen, Co. 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 allow for: (a) the redesignation of an inert waste disposal area to a commercial and industrial waste disposal area, (b) the relocation of site infrastructure within the site, and (c) the amendment of the Restoration Plan to comply with the recommendations of the Agency's Landfill Manual on minimum slopes and gradients of the restored surface.

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 Adaptation 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 licence sets out in detail the conditions under which **KTK Landfill Ltd.** will operate and manage this facility.

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## *Glossary of Terms*

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Acts 1996 to 2003, (the Acts), unless otherwise defined in this section.

<b>Aerosol</b>	A suspension of solid or liquid particles in a gaseous medium.
<b>Adequate lighting</b>	20 lux measured at ground level.
<b>AER</b>	Annual Environmental Report.
<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 this licence application.
<b>Application</b>	The application by the licensee for this licence.
<b>Appropriate facility</b>	A waste management facility, duly authorised under relevant law and technically suitable.
<b>BAT</b>	Best Available Techniques.
<b>Bi-annually</b>	All or part of a period of six consecutive months.
<b>Biennially</b>	Once every two years.
<b>BOD</b>	5 day Biochemical Oxygen Demand.
<b>CEN</b>	Comité Européen De Normalisation – European Committee for Standardisation
<b>COD</b>	Chemical Oxygen Demand.
<b>Construction and Demolition Waste</b>	Wastes that arise from construction, renovation and demolition activities: Chapter 17 of the EWC or as otherwise may be agreed.
<b>Containment boom</b>	A boom which can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
<b>Daily</b>	During all days of plant operation, and in the case of emissions, when emissions are taking place; with at least one measurement on any one day.
<b>Day</b>	Any 24 hour period.
<b>Daytime</b>	0800 hrs to 2200 hrs
<b>dB(A)</b>	Decibels (A weighted).
<b>DO</b>	Dissolved Oxygen.
<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.
EMP	Environmental Management Programme.
Emission Limits	Those limits, including concentration limits and deposition rates established in <i>Schedule B</i> of this licence.
Environmental Damage	Has the meaning given it in Directive 2004/35/EC
EPA	Environmental Protection Agency.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC and any subsequent amendment published in the Official Journal of the European Community.
Facility	Any site or premises used for the purposes of the recovery or disposal of waste.
Fortnightly	A minimum of 24 times per year, at approximately two week intervals.
GC/MS	Gas Chromatography/Mass Spectroscopy
Green waste	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
Heavy Metals	This term is to be interpreted as set out in “Parameters of Water Quality, Interpretation and Standards” published by the Agency in 2001. ISBN 1-84095-015-3.
HFO	Heavy Fuel Oil.
Hours of Operation	The hours during which the facility is authorised to be operational.
Hours of Waste Acceptance	The hours during which the facility is authorised to accept waste
ICP	Inductively Coupled Plasma Spectroscopy.
Incident	<p>The following <b>shall</b> constitute an incident for the purposes of this licence:</p> <ol style="list-style-type: none"><li>a) an emergency;</li><li>b) any emission which does not comply with the requirements of this licence;</li><li>c) any exceedence of the daily duty capacity of the waste handling equipment;</li><li>d) any trigger level specified in this licence which is attained or exceeded;</li></ol> <p><b>and,</b></p> <p>any indication that environmental pollution has, or may have, taken place.</p>
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.

<b>Initial Development Works</b>	Means such works, actions or constructions as may be specified, which for the purposes of environmental protection and safe construction and operation of the facility, have to be carried out in the initial stages of site development, and in any case prior to the commencement of construction of the landfill cells.
<b>Installation</b>	A stationary technical unit or plant where the activity concerned referred to in the First Schedule of EPA Acts 1992 and 2003 is or will be carried on, and shall be deemed to include any directly associated activity, which has a technical connection with the activity and is carried out on the site of the activity.
<b>IPPC</b>	Integrated Pollution Prevention & Control.
<b>K</b>	Kelvin.
<b>kPa</b>	Kilo Pascals.
<b>Landfill Directive</b>	Council Directive 1999/13/EC.
<b>Leq</b>	Equivalent continuous sound level.
<b>Licensee</b>	KTK Landfill Limited, Brownstown and Carnalway, Kilcullen, Co. Kildare.
<b>Liquid Waste</b>	Any waste in liquid form and containing less than 2% dry matter.
<b>List I</b>	As listed in the EC Directives 76/464/EEC and 80/68/EEC and amendments.
<b>List II</b>	As listed in the EC Directives 76/464/EEC and 80/68/EEC and amendments.
<b>Local Authority</b>	Kildare County Council
<b>Maintain</b>	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to adequately perform its function.
<b>Mass Flow Limit</b>	An Emission Limit Value which is expressed as the maximum mass of a substance which can be emitted per unit time.
<b>Mass Flow Threshold</b>	A mass flow rate, above which, a concentration limit applies.
<b>Monthly</b>	A minimum of 12 times per year, at approximately monthly intervals.
<b>Night-time</b>	2200 hrs to 0800 hrs.
<b>Noise Sensitive Location (NSL)</b>	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
<b>Oil Separator</b>	Device installed according to the International Standard I.S.EN 858-2:2003 (Separator systems for light liquids, (e.g. oil and petrol)-Part 2: Selection of nominal size, installation, operation and maintenance.
<b>PER</b>	Pollution Emission Register.
<b>Quarterly</b>	All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
<b>Regional Fisheries Board</b>	Eastern Regional Fisheries Board.

<b>Sanitary Authority</b>	Kildare County Council
<b>Sanitary Effluent</b>	Waste water from facility toilet, washroom and canteen facilities
<b>Sample(s)</b>	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
<b>SOP</b>	Standard Operating Procedure.
<b>Standard Method</b>	A National, European or internationally recognised procedure (eg, I.S. EN, ISO, CEN, BS or equivalent), as an in-house documented procedure based on the above references, a procedure as detailed in the current edition of "Standard Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F), American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA; or, an alternative method as may be agreed by the Agency.
<b>Storm Water</b>	Rain water run-off from roof and non-process areas.
<b>The Agency</b>	Environmental Protection Agency.
<b>TOC</b>	Total Organic Carbon.
<b>Trade Effluent</b>	Trade Effluent has the meaning given in the water pollution Acts 1977 and 1990
<b>Trigger Level</b>	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
<b>Weekly</b>	During all weeks of plant operation, and in the case of emissions, when emissions are taking place; with at least one measurement in any one week.
<b>WWTP</b>	Waste Water Treatment Plant.

## ***Decision & Reasons for the Decisions***

### ***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 will not contravene any of the requirements of Section 83(5) of the Section 40(4) of the Waste Management Acts 1996 to 2003.

In reaching this decision the Environmental Protection Agency has considered the application and supporting documentation received from the applicant and the report of its inspector.

### ***Part I Schedule of Activities Licensed***

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2003, the Environmental Protection Agency (the Agency) proposes, under Section 46(2) of the said Act to grant this Waste Licence to KTK Landfill Ltd. to carry on the waste activity/activities listed below at Brownstown and Carnalway, Kilcullen, Co. Kildare, subject to conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence. For the purposes of Article 48 of the Waste Management Licensing Regulations 2004 (SI 395) this facility is classed as a non-hazardous waste landfill.

#### ***Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2003***

<b>Class 1.</b>	Deposit on, in or under land (including landfill).
<b>Class 5.</b>	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
<b>Class 11.</b>	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
<b>Class 13.</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.

#### ***Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2003***

<b>Class 3.</b>	Recycling or reclamation of metals and metal compounds.
<b>Class 4.</b>	Recycling or reclamation of other inorganic materials.
<b>Class 13.</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.



## ***Part II Schedule of Activities Refused***

*None of the proposed activities as set out in the licence application have been refused.*

## ***Part III Conditions***

### **Condition 1. Scope**

- 1.1 Waste activities at this facility shall be restricted to those listed and described in Part I Activities Licensed and shall be as set out in the licence application or as modified under Condition 1.6 of this licence and subject to the conditions of this licence.
- 1.2 Waste Acceptance Hours and Hours of Operation
- (a) Waste may be accepted at the facility for disposal at the landfill only between the hours of 0700 and 1730 Monday to Friday inclusive (Bank Holidays excluded) and 0800 and 1530 on Saturdays.
- (b) The hours of operation at the facility shall be between the hours of 0700 and 1800 Monday to Friday inclusive and 0700 and 1600 on Saturdays.
- 1.3 Activities at this facility shall be limited as set out in Schedule A: Limitations.
- 1.4 The facility shall be controlled, operated, and maintained and emissions shall take place as set out in this licence. All programmes required to be carried out under the terms of this licence, become part of this licence.
- 1.5 For the purposes of this licence, the facility authorised by this licence, is the area of land outlined in orange on Drawing No. KTK/2000 Rev A, Nov.'04 entitled "Site location" of the application. Any reference in this licence to "facility" shall mean the area thus outlined in orange. The licensed activities shall be carried on only within the area outlined.
- 1.6 No alteration to, or reconstruction in respect of, the activity or any part thereof which would, or is likely to, result in
- (a) a material change or increase in:
- The nature or quantity of any emission,
  - The abatement/treatment or recovery systems,
  - The range of processes to be carried out,
  - The fuels, raw materials, intermediates, products or wastes generated, or
- (b) any changes in:
- Site management infrastructure or control with adverse environmental significance,
- shall be carried out or commenced without prior notice to, and without the agreement of, the Agency.
- 1.7 This licence is for the purposes of waste licensing under the Waste Management Acts 1996 to 2003 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.8 This licence has been granted in substitution for the waste licence granted to the licensee on 8<sup>th</sup> April 2002 and bearing Waste Licence Register No.: 81-2. The previous waste licence (Reg. No. 81-2) is superseded by this licence.

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

### **Condition 2. Management of the Facility**

## 2.1 Facility Management

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

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

## 2.2 Environmental Management System (EMS)

2.2.1 The licensee shall maintain an Environmental Management System (EMS) The EMS shall be updated on an annual basis.

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

2.2.2.1 Management and Reporting Structure.

2.2.2.2 Schedule of Environmental Objectives and Targets.

The licensee shall maintain a Schedule of Environmental Objectives and Targets. The Schedule shall as a minimum provide for a review of all operations and processes, including an evaluation of practicable options, for energy and resource efficiency, the use of cleaner technology, cleaner production, and the prevention, reduction and minimisation of waste, and shall include waste reduction targets. The Schedule shall include time frames for the achievement of set targets and shall address a five year period as a minimum. The Schedule shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

2.2.2.3 Environmental Management Programme (EMP)

The licensee shall maintain an EMP, including a time schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.2.2.2. It shall include:

- (b) designation of responsibility for targets;
- (c) the means by which they may be achieved;
- (d) the time within which they may be achieved.

The EMP shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

A report on the programme, including the success in meeting agreed targets, shall be prepared and submitted to the Agency as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Agency.

2.2.2.4 Documentation

- (i) The licensee shall establish and maintain an environmental management documentation system which shall be to the satisfaction of the Agency.

- (ii) The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

#### 2.2.2.5 Corrective Action

The licensee shall maintain procedures to ensure that corrective action is taken should the specified requirements of this licence not be fulfilled. The responsibility and authority for initiating further investigation and corrective action in the event of a reported non-conformity with this licence shall be defined

#### 2.2.2.6 Awareness and Training

The licensee shall maintain procedures for identifying training needs, and for providing appropriate training, for all personnel whose work can have a significant effect upon the environment. Appropriate records of training shall be maintained.

#### 2.2.2.7 Communications Programme

The licensee shall maintain a 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 management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.*

### **Condition 3. Infrastructure and Operation**

- 3.1 The licensee shall establish all infrastructure referred to in this licence, to the design set out in the Application documentation or as may be otherwise specified or varied by the conditions of this licence.
- 3.1 Facility Notice Board
- 3.1.1 The licensee shall provide and maintain an 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.
- 3.1.2 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.
- 3.2 The landfill footprint (maximum lateral extent of landfilling) shall be as indicated, in KTK/2007 Rev A of the Application.
- 3.3 Wastes shall not be deposited in any new cell without the prior written agreement of the Agency.**
- 3.4 Phased Construction Plan.

3.4.1 Two months prior to the commencement of site development for Phase 6, the licensee shall submit to the Agency for its agreement a construction schedule, sequence and timescale (Construction Plan) incorporating the requirements of this licence and to give effect to the commitments in the application documentation. This Plan shall have regard to the agreed Specified Engineering Works under Licence Reg. No 81-2. The Construction Plan for cell development shall have regard to the sequencing necessary to provide short, medium and long term screening of the operational areas.

### 3.5 Specified Engineering Works

3.5.1 The licensee shall submit proposals for any 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

3.5.2 All specified engineering works shall be supervised by an appropriately qualified person, and that person, or persons, shall be present at all times during which relevant works are being undertaken.

3.5.3 Following the completion of any 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, as appropriate, 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) Name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
- (f) Records of any problems and the remedial works carried out to resolve those problems; and
- (g) Any other information requested in writing by the Agency.

### 3.6 Landfill Lining

**3.6.1 Unless otherwise agreed in writing, the landfill lining system shall comprise:-**

- (i) A composite liner consisting of a 1m layer of clay with a hydraulic conductivity of less than or equal to  $1 \times 10^{-9} \text{ m}^3/\text{m}^2/\text{s}$ , 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  $1 \times 10^{-3} \text{ m}^3/\text{m}^2/\text{s}$ , of pre-washed, uncrushed, granular, rounded stone (16-32mm grain size) incorporating leachate collection drains;
- (iv) The lining system on the base of the facility shall be laid to a minimum slope of 1:50, and
- (v) The side walls shall be designed and constructed to achieve an equivalent protection.

### 3.7 Facility Security

- 3.7.1 Security and stockproof fencing and gates shall be installed and maintained. The base of the fencing shall be set in the ground. Subject to the implementation of the restoration and aftercare plan and to the agreement of the Agency, the requirement for such site security may be removed.
- 3.7.2 Gates shall be locked shut when the facility is unsupervised.
- 3.7.3 The licensee shall remedy any defect in the gates and/or fencing as follows:-
- (i) A temporary repair shall be made by the end of the working day; and
  - (ii) A repair to the standard of the original gates and/or fencing shall be undertaken within three working days.
- 3.8 Facility Roads and Hardstanding
- 3.8.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.
- 3.8.2 The facility entrance and hardstanding areas shall be appropriately paved and maintained in a fit and clean condition.
- 3.9 Facility Office
- 3.9.1 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.
- 3.9.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.
- 3.10 Waste Inspection and Quarantine Areas
- 3.10.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.
- 3.10.2 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 clearly identified and segregated from each other.
- 3.10.3 Drainage from these areas shall be directed to the leachate management system.
- 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 31st January 2004. This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.

- 3.12 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility
- 3.13 Weighbridge and Wheel Cleaner
- 3.13.1 The licensee shall provide and maintain a weighbridge and wheel cleaners at the facility.
- 3.13.2 The wheel cleaners shall be used by all vehicles leaving the facility as required to ensure that no process water or waste is carried off-site. All water from the wheel cleaning area shall be directed to the leachate management system.
- 3.14 Leachate Management Infrastructure
- 3.14.1 Leachate management infrastructure shall be provided and maintained at the facility as described in the Application documentation, or as may be varied by a licence condition.
- 3.14.2 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.
- 3.15 Landfill Gas Management
- 3.15.1 Landfill Gas management infrastructure shall be provided and maintained at the facility as described in the Application documentation, or as may be varied by a licence condition.
- 3.15.2 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.
- 3.16 Groundwater
- 3.16.1 All wells & boreholes shall be adequately sealed to prevent surface contamination and, as may be appropriate, decommissioned according to the UK Environment Agency guidelines 'Decommissioning Redundant Boreholes and Wells' (or as otherwise may be agreed by the Agency).
- 3.16.2 Groundwater monitoring wells shall be constructed having regard to the guidance given in the Agency's landfill manual "Landfill Monitoring".
- 3.17 Maintenance
- 3.17.1 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.
- 3.17.2 The licensee shall maintain and clearly label and name all sampling and monitoring locations.

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

## **Condition 4. Interpretation**

- 4.1 Emission limit values for emissions to atmosphere in this licence shall be interpreted in the following way:

- 4.1.1 Continuous Monitoring:
- (i) No 24 hour mean value shall exceed the emission limit value.
  - (ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
  - (iii) No 30 minute mean value shall exceed twice the emission limit value.
- 4.1.2 For Non-Continuous Monitoring
- (i) For any parameter where, due to sampling/analytical limitations, a 30 minute sample is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.
  - (ii) For flow, no hourly or daily mean value, calculated on the basis of appropriate spot readings, shall exceed the relevant limit value.
  - (iii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.
- 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 :-
- 4.2.1 In the case of landfill gas flare:  
Temperature 273 K, pressure 101.3kPa, dry gas at 3% oxygen; and
- 4.2.2 In the case of landfill gas combustion plant:  
Temperature 273 K, pressure 101.3kPa, dry gas; 5% oxygen.
- 4.2 Emission limit values for emissions to sewer in this licence shall be interpreted in the following way:-
- 4.2.1 Continuous monitoring:
- (i) No flow value shall exceed the specified limit.
  - (ii) No pH value shall deviate from the specified range.
  - (iii) No temperature value shall exceed the limit value.
- 4.2.2 Composite Sampling:
- (i) No pH value shall deviate from the specified range.
  - (ii) For parameters other than pH and flow, eight out of ten consecutive composite results, based on flow proportional composite sampling, shall not exceed the emission limit value. No individual result similarly calculated shall exceed 1.2 times the emission limit value.
- 4.2.3 Discrete Sampling
- For parameters other than pH and temperature, no grab sample value shall exceed 1.2 times the emission limit value.
- 4.3 Where the ability to measure a parameter is affected **by** mixing before emission, then, with agreement from the Agency, the parameter may be assessed before mixing takes place.
- 4.4 Noise



- 4.4.1 Noise from the facility shall not give rise to sound pressure levels (Leq,T) measured at the boundary of the activity which exceed the limit value(s).
- 4.5 Dust and Particulate Matter
- Dust and particulate matter from the activity shall not give rise to deposition levels which exceed the limit value(s).

*Reason: To clarify the interpretation of limit values fixed under the licence.*

## Condition 5. Emissions

- 5.1 No specified emission from the facility shall exceed the emission limit values set out in *Schedule B: Emission Limits* of this licence. There shall be no other emissions of environmental significance.
- 5.2 The licensee shall ensure that the activities shall be carried out in a manner such that emissions including odours do not result in significant impairment of, and/or significant interference with amenities or the environment beyond the facility boundary.
- 5.3 No substance shall be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish.
- 5.4 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.
- 5.5 Disposal of Leachate
- 5.5.1 No leachate shall be discharged to surface water.
- 5.5.2 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 unless otherwise agreed with the Agency and with 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.
- 5.5.3 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.
- 5.5.4 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.
- 5.5.5 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.

- 5.5.6** 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.
- 5.5.7** 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.
- 5.5.8** 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.
- 5.5.9** The licensee shall submit monitoring results in relation to emissions to sewer to the Sanitary Authority on an annual basis.
- 5.6 Prior to the acceptance of waste for disposal, the licensee shall submit to the Agency for approval, evidence to demonstrate that an agreement is in place regarding leachate removal (from the site) and treatment.
- 5.7 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the installation facility. **Any** such debris or deposited materials shall be removed without delay.

*Reason: To provide for the protection of the environment by way of control and limitation of emissions and to provide for the requirements of the Sanitary Authority in accordance with Section 52 of the Waste Management Acts 1996 to 2003.*

## Condition 6. Control and Monitoring

- 6.1 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out below and as in accordance with Schedule C of this licence:
- 6.1.1 Analysis shall be undertaken by competent staff in accordance with documented operating procedures.
- 6.1.2 Such procedures shall be assessed for their suitability for the test matrix and performance characteristics determined.
- 6.1.3 Such procedures shall be subject to a programme of Analytical Quality Control using control standards with evaluation of test responses.**
- 6.1.4 Where analysis is sub-contracted it shall be to a competent laboratory.
- 6.2 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on unless alternative sampling or monitoring has been agreed in writing by the Agency for a limited period. In the event of the malfunction of any continuous monitor, the licensee shall contact the Agency as soon as practicable, and alternative sampling and monitoring facilities shall be put in place. Agreement for the use of alternative equipment, other than in emergency situations, shall be obtained from the Agency.
- 6.3 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission or discharge.
- 6.4 All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer.

- 6.5 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended with the agreement of the Agency following evaluation of test results.
- 6.6 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
- 6.7 The licensee shall prepare a programme, to the satisfaction of the Agency, for the identification and reduction of fugitive emissions. This programme shall be included in the Environmental Management Programme.
- 6.8 The integrity and water tightness of all underground pipes and tanks and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.
- 6.9 Storm water
- 6.9.1 A visual examination of the storm water discharge shall be carried out daily. A log of such inspections shall be maintained.
- 6.9.2 The drainage system, bunds, silt traps and oil separators shall be inspected weekly, desludged as necessary and properly maintained at all times. All sludge and drainage from these operations shall be collected for safe disposal.
- 6.10 Groundwater  
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'
- 6.11 Noise
- 6.11.1 The licensee shall carry out a noise survey of the site operations annually. The survey programme shall be undertaken in accordance with the methodology specified in the 'Environmental Noise Survey Guidance Document' as published by the Agency.
- 6.13 Telemetry
- 6.13.1 A telemetry system shall be installed and maintained at the facility. All facility operations linked to the telemetry system shall also have a manual control which will be reverted to in the event of break in power supply or during maintenance.
- 6.13.2 This system shall include for:-
- (i) Recording of leachate levels in the lined cells and lagoon;
  - (ii) Recording of levels in the surface water lagoon and flows to the perimeter streams;
  - (iii) Quality of the surface water at the inlet to the surface water lagoons and being discharged to the perimeter streams; and
  - (iv) Permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.
- 6.14 Leachate Management
- 6.14.1 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.
- 6.14.2 The level of leachate in the pump sumps shall be monitored as outlined in *Schedule C2 3*
- 6.14.3 The frequency of leachate removal from the leachate holding tank shall be such that a minimum freeboard of 0.5m shall be maintained in the tank at all times.

- 6.14.4 Unless treated on the facility, leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers.
- 6.14.5 Recirculation of leachate or other contaminated water shall only be undertaken within cells which have been lined to the satisfaction of the Agency.
- 6.15 Landfill Gas
- 6.15.1 The construction, location and installation phasing of landfill gas monitoring locations shall be as agreed with the Agency.
- 6.15.2 At least two rounds of landfill gas sampling (one during falling atmospheric pressure) in locations external to the disposal cells should be completed prior to commencement of filling of any new area.
- 6.15.3 Flares shall be operated to ensure a burn chamber residence time of minimum 0.3 sec and burn temperature of minimum 1000°C.
- 6.15.4 In relation to landfill derived gases the following shall constitute a trigger level:
- (i) Methane greater than 1% v/v; or,
  - (ii) Carbon Dioxide greater than 1.5% v/v,
- measured in any monitoring borehole, service duct, manhole or other point as may be specified, located external to the body of waste.
- 6.16 Litter Control
- 6.16.1 The measures and infrastructure as described in the Application documentation shall be applied to control litter at the facility.
- 6.16.2 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting as follows:-
- (i) A temporary repair shall be made by the end of the working day; and
  - (ii) A repair to the standard of the original netting shall be undertaken within three working days.
- 6.16.3 All loose litter or other waste, placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working day after such waste is discovered.
- 6.16.4 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.
- 6.17 Odour Control
- 6.17.1 All odorous or odour forming wastes shall be covered as soon as practicable and in any case at the end of the working day.
- 6.17.2 Where it is proposed to take biological sludges at the facility, these must be subject to pre-treatment (e.g. lime stabilisation) prior to acceptance at the facility.
- 6.17.3 When siting and operating landfill gas infrastructure regard shall be had to the potential for, and mitigation of, odour nuisance.
- 6.18 Dust control  
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.
- 6.19 Prior to exiting the facility, all waste vehicles shall use the wheelwash.
- 6.20 Operational Controls

- 6.20.1 Only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials.
  - 6.20.2 The working face of the landfill shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and have a slope no greater than 1 in 3.
  - 6.20.3 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.
  - 6.20.4 The working face, or faces, shall each day at the end of the day, be covered with suitable material.
  - 6.20.5 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
  - 6.20.6 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over with the exception of works associated with the construction and installation of necessary infrastructure or otherwise only with the prior agreement from the Agency.
  - 6.20.7 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.
  - 6.20.8 Scavenging shall not be permitted at the facility.
  - 6.20.9 Unless otherwise agreed by the Agency, all sludges shall be covered immediately with other waste.
  - 6.20.10 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
  - 6.20.11 No smoking shall be allowed at the facility.
- 6.21 Stability Assessment

The licensee shall carry out a stability assessment of the side slopes of the facility annually. The results of this assessment shall be reported as part of the AER.

**Reason:** *To provide for the protection of the environment by way of treatment and monitoring of emissions and to provide for the requirements of the Sanitary Authority in accordance with Section 52 of the Waste Management Acts 1996 to 2003.*

## Condition 7. Resource Use and Energy Efficiency

- 7.1 The licensee shall carry out an audit of the energy efficiency of the site within one year of the date of grant of this licence. The audit shall be carried out in accordance with the guidance published by the Agency; "Guidance Note on Energy Efficiency Auditing". The energy efficiency audit shall be repeated at intervals as required by the Agency.
- 7.2 The audit shall identify all opportunities for energy use reduction and efficiency and the recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2 above.
- 7.3 The licensee shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into Schedule of Environmental Objectives and Targets.
- 7.4 The licensee shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity. Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets.

Reason: To provide for *the* efficient use of resources and energy in all site operations.

## Condition 8. Materials Handling

- 8.1 Disposal or recovery of waste shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.
- 8.2 Waste sent off-site for recovery or disposal shall be transported only by an authorised waste contractor. The waste shall be transported only from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the environment and in accordance with the appropriate National and European legislation and protocols.
- 8.3 Waste Acceptance and Characterisation Procedures
- 8.3.1 Only pre-treated wastes are acceptable for disposal as set out in Article 6 (a) of the Landfill Directive
- 8.3.2 Waste shall only be accepted at the facility, from Local Authority waste collection or transport vehicles or holders of waste permits, unless exempted or excluded, issued under the Waste Management (Collection Permit) Regulations 2001.
- 8.3.3 Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) shall not be disposed of at the facility. Shredded tyres shall not be disposed of at the facility from 16 July 2006.
- 8.3.4 No hazardous wastes (other than as may be permitted under Condition 8.5) or liquid wastes shall be disposed of at the facility.
- 8.3.5 The licensee shall ensure that inert waste accepted at the facility is subject to treatment where technically feasible.
- 8.3.6 The licensee shall maintain written procedures for the acceptance and handling of all wastes. These procedures shall include details of the pre-treatment of all waste to be carried out prior to acceptance at the facility and shall also include methods for the characterisation of waste in order to distinguish between inert, non-hazardous and hazardous wastes. The procedures shall have regard to the EU Decision (2003/33/EC) on establishing the criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive (1999/31/EC) on the landfill of waste.
- 8.4 Inert Waste
- Inert waste accepted at the facility shall comply with the standards established in the EU Decision (2003/22/EC).
- 8.5 Asbestos Waste
- 8.5.1 Asbestos waste to be disposed of at the facility shall comply with the requirements of Article 6(c)(iii) of the Landfill Directive (1999/31/EC) and be accepted and managed in accordance with the procedures laid down in Section 2.3.3 of the Annex to Council Directive 2003/33/EC.
- 8.5.2 Asbestos based waste must be double wrapped in heavy gauge plastic, which is clearly labelled to indicate the presence of asbestos.

- 8.5.3 Disposal of asbestos waste shall be into prepared bays or trenches of at least 2 metres in depth.
- 8.5.4 Deposited 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.
- 8.5.5 No asbestos waste shall be present within 2.5 metres of the final surface levels.
- 8.5.6 The amount of asbestos containing waste shall be limited to a maximum of 1% of total annual waste intake for the landfill.
- 8.6 With the exception of use of recovered fuels as may be approved for this site by the Agency, no waste shall be burnt at the facility.

*Reason: To provide for the appropriate handling of materials and the protection of the environment.*

## **Condition 9. Accident Prevention and Emergency Response**

- 9.1 The licensee shall, within six months of date of grant of this licence, ensure that a documented Accident Prevention Policy is in place which will address the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.
- 9.2 The licensee shall ensure that a documented Emergency Response Procedure is in place, which shall address any emergency situation which may originate on-site. This Procedure shall include provision for minimising the effects of any emergency on the environment. This procedure shall be reviewed annually and updated as necessary.
- 9.3 In the event of an incident the licensee shall immediately:-
- (i) isolate the source of any such emission;
  - (ii) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
  - (iii) evaluate the environmental pollution, if any, caused by the incident;
  - (iv) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
  - (v) identify the date, time and place of the incident;
  - (vi) provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed with the Agency to:-
    - \* identify and put in place measures to avoid reoccurrence of the incident; and
    - identify and put in place any other appropriate remedial action.

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

## Condition 10. Closure, Restoration and Aftercare

- 10.1 The licensee shall restore the facility on a phased basis. Unless otherwise agreed, filled cells shall be permanently capped within twenty-four months of the cells having been filled to the required level.
- 10.2 Landscaping
- 10.2.1 Landscaping of the facility shall be as described in the application documentation.
- 10.2.2 Unless otherwise agreed by the Agency, the finished (post settlement restored) levels of the landfill shall be as indicated in Drawing Reference KTK/2009 Rev A of the Application.
- 10.2.3 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.
- 10.3 Final Capping
- 10.3.1 Unless otherwise agreed by the Agency, the final capping shall consist of the following:-
- (i) Top soil (150 -300mm);
  - (ii) Subsoils, such that total thickness of top soil and subsoils is at least 1m;
  - (iii) Drainage layer of 0.5m thickness having a minimum hydraulic conductivity of  $1 \times 10^{-4}$  m/s or a geosynthetic material that provides equivalent transmissivity;
  - (iv) Compacted mineral layer of a minimum 0.6m 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
  - (v) Gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.
- 10.4 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.
- 10.5 All soils shall be stored to preserve the soil structure for future use.
- 10.6 Closure, Restoration & Aftercare Management Plan (CRAMP):
- 10.6.1 The licensee shall, **within six months of date of grant of this licence**, prepare for agreement by the Agency, a fully detailed and costed plan for the closure, restoration and long-term aftercare of the site or part thereof. This plan shall have regard to the commitments given in the application documentation for Licence Register **81-1, 81-2 and 81-3** (as may be varied herein).
- 10.6.2 The plan shall be maintained and reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the **AER**. No amendments may be implemented without the prior written agreement of the Agency.
- 10.7 The CRAMP shall include as a minimum, the following:-



- 10.7.1 A scope statement for the plan.
  - 10.7.2 The criteria, including those specified in this licence, which define the successful closure & restoration of the facility or part thereof, and which ensures minimum impact to the environment.
  - 10.7.3 A programme to achieve the stated criteria.
  - 10.7.4 Where relevant, a test programme to demonstrate the successful implementation of the plan.
  - 10.7.5 Details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility,
  - 10.7.6 Details of costings for the plan and a statement as to how these costs will be underwritten.
- 10.8 A final validation report to include a certificate of completion for the CRAMP, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

*Reason: To make provision for the proper closure of the activity ensuring protection of the environment.*

## **Condition 11. Notifications, Records and Reports**

- 11.1 The licensee shall notify the Agency by both telephone and either facsimile or electronic mail, if available, to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:
- 11.1.1 Any release of environmental significance to atmosphere from any potential emission point including bypasses.
  - 11.1.2 Any emission which does not comply with the requirements of this licence.
  - 11.1.3 Any malfunction or breakdown of key control equipment or monitoring equipment set out in *Schedule C Control & Monitoring* which is likely to lead to loss of control of the abatement system.
  - 11.1.4 Any incident with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to air or land, or requiring an emergency response by the Local Authority.
- The licensee shall include as part of the notification, date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any emissions.
- 11.2 In the event of any incident which relates to discharges to sewer, having taken place, the licensee shall notify the Local and Sanitary Authority as soon as practicable, after such an incident.
- 11.3 In the case of any incident which relates to discharges to water, the licensee shall notify the Local Authority and the Eastern Regional Fisheries Board as soon as practicable after such an incident.

- 11.4 The licensee shall make a record of any incident. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident. The record shall include all corrective actions taken to; manage the incident, minimise wastes generated and the effect on the environment, and avoid recurrence. The licensee shall as soon as practicable following incident notification, submit to the Agency the incident record.
- 11.5 The licensee shall record all complaints of an environmental nature related to the operation of the activity. Each such record shall give details of the date and time of the complaint, the name of the complainant and give details of the nature of the complaint. A record shall also be kept of the response made in the case of each complaint.
- 11.6 The licensee shall record all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility.
- 11.7 The licensee shall as a minimum keep the following documents at the site:-
- (i) the licences relating to the facility;
  - (ii) the current EMS for the facility;
  - (iii) the previous year's AER for the facility;
  - (iv) records of all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility;
  - (v) relevant correspondence with the Agency;
  - (vi) an up to date site drawings/plans showing the location of key process and environmental infrastructure, including monitoring locations and emission points
- and this documentation shall be available to the Agency for inspection at all reasonable times.
- 11.8 The licensee shall submit to the Agency, by the 31<sup>st</sup> March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in *Schedule E* and shall be prepared in accordance with any relevant guidelines issued by the Agency.
- 11.9 A full record, which shall be open *to* inspection by authorised persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall be maintained on a monthly basis and shall as a minimum contain details of the following:
- (i) The tonnages and EWC Code for the waste materials imported and/or sent off-site for disposal/recovery.
  - (ii) The names of the agent and carrier of the waste, and their waste collection permit details, if required (to include issuing authority and vehicle registration number).
  - (iii) Details of the ultimate disposal/recovery destination facility for the waste and its appropriateness to accept the consigned waste stream, to include its permit/licence details and issuing authority, if required.
  - (iv) Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site.
  - (v) Details of all wastes consigned abroad for Recovery and classified as 'Green' in accordance with the EU Transfrontier Shipment of Waste Regulations (Council Regulation EEC No. 259/1993, as

amended). The rationale for the classification must form part of the record.

- (vi) Details of any rejected consignments.
- (vii) Details of any approved waste mixing.
- (viii) The results of any waste analyses required under Schedule 8.
- (ix) The tonnages and EWC Code for the waste materials recovered/disposed on-site.

11.10 In relation to landfilling activities, the licensee shall notify the Agency of any wastes presented at but not accepted to the facility.

11.11 Prior to the development of any undisturbed area, the advice of the Heritage Section of the Department of the Environment, Heritage and Local Government shall be sought.

11.12 Waste Recovery Reports

11.12.1 The licensee shall as part of their EMP prepare a report examining waste recovery options shall be submitted to the Agency for its agreement in the AER. This report shall address methods to contribute to the achievement of the recovery targets stated in national and European Union waste policies and shall include the following:-

- a) proposals for the contribution of the facility to the achievement of targets for the reduction of biodegradable waste to landfill as specified in the Landfill Directive;
- b) the separation of recyclable materials from the waste;
- c) the recovery of Construction and Demolition Waste;
- d) the recovery of metal waste;
- e) inert waste to be used for cover/restoration material at the facility.

*Reason: To provide for the collection and reporting of adequate information on the activity.*

## Condition 12. Financial Charges and Provisions

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €24,228, or such sum as the Agency from time to time determines, having regard to variations in the extent of reporting, auditing, inspection, sampling and analysis or other functions carried out by the Agency, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Waste Management Acts 1996 to 2003. The first payment shall be a pro-rata amount for the period from the date of this licence to the 31st day of December, and shall be paid to the Agency within one month from the date of the licence. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Waste Management Acts 1996 to 2003, and all such payments shall be made within one month of the date upon which demanded by the Agency.

12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased the licensee shall contribute such sums as determined by the Agency to defraying its costs in regard to items not covered by the said annual contribution.

12.2 Sanitary Authority Charges

**12.2.1 The licensee shall pay to the Sanitary Authority €1.27 per cubic metre of leachate at 500 ppm COD discharged to the foul sewer or such sum as may be determined from time to time, having regard to the variations in the cost of providing drainage and the variation in effluent reception and treatment costs. Payment to be annually on demand.**

12.3 Environmental Liabilities

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

12.3.2 The licensee shall arrange for the completion, by an independent and appropriately qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA), which addresses the liabilities from past and present activities. The assessment shall include those liabilities and costs identified in Condition 10 for execution of the RMP/CRAMP. A report on this assessment shall be submitted to the Agency for agreement within twelve months of date of grant of this licence. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement: review results are to be notified as part of the AER.

12.3.3 As part of the measures identified in Condition 12.3.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities identified in Condition 12.3.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'statement of measures' report identified in Condition 12.3.1.

12.3.4 Unless otherwise agreed, any revision to that part of the indemnity dealing with restoration and aftercare liabilities (refer Condition 10), 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.

12.4 · Cost of landfill of waste

In accordance with the provisions of Section 53A of the Waste Management Acts 1996 to 2003, the licensee shall ensure the costs in the setting up, operation of, provision of financial security and closure and after-care 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. The statement required under Section 53A(5) of said Acts is to be included as part of the AER.

*Reason: To provide for adequate financing for monitoring and financial provisions for measures to protect the environment and to provide for the requirements of the Sanitary Authority in accordance with Section 52 of the Waste Management Acts 1996 to 2003.*

## SCHEDULE A Limitations

### A.2 WASTE ACCEPTANCE

*Table A.1 Waste Categories and Quantities*

<b>WASTE TYPE</b> <sup>Note 1</sup>	<b>MAXIMUM (TONNES PER ANNUM)</b> <sup>Notes 2 &amp; 3</sup>
Commercial	222,750
Construction & Demolition	10,750
Industrial Non-Hazardous Solids	24,750
Dewatered Industrial Non-Hazardous Sludges/Filtercakes with > 25% solids	13,750
Construction materials containing Asbestos – EWC 17/06/05*	3,000
<b>TOTAL</b>	<b>275,000</b>

## SCHEDULE B Emission Limits

### B.1 EMISSIONS TO AIR

#### Landfill Derived Gas Concentration Limits:

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

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



#### Emission Limits Values for Landfill Gas Plant:

Emission Point Reference numbers: See Drawing Ref: KTK/2008

Minimum discharge height: 5m

Parameter	Flare (enclosed) Emission Limit Value <sup>Note 1</sup>	Utilisation Plant Emission Limit Value (mg/m <sup>3</sup> ) <sup>Note 1</sup>
Nitrogen oxides (NO <sub>x</sub> )	150 mg/m <sup>3</sup>	500
Carbon Monoxide (CO)		1400
Total Volatile Organic compounds (VOCs)		1000
Total Non Methane Volatile Organic compounds (VOCs)		75



#### Dust Deposition Limits:

Measured at the monitoring points indicated D1A – D6A (incl.) Drawing Ref: xxx  
(or as may be amended under Condition 6.3).

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.



### B.2 Emissions to Water

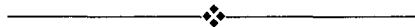
**There are no Emissions to Water of environmental significance.**



**B.3 Emission to Sewer**  
**Leachate Tankered to the Wastewater Treatment Plant or discharged to Sewer.**

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.



**B.4. NOISE EMISSIONS**

Day dB(A) $L_{Aeq}$ (30 minutes)	Night dB(A) $L_{Aeq}$ (30 minutes)
55 <sup>Note 1</sup>	45 <sup>Note 1</sup>





## SCHEDULE C Control & Monitoring

### c.1.1

### CONTROL OF EMISSIONS TO AIR

**Emission Point Reference No.:** Flare Stacks & Generation Plant

**Description of Treatment:** Gas Extraction & Combustion

Control Parameter	Monitoring	Key Equipment <sup>Note 1</sup>
Continuous burn	Continuous with alarm/call-out	Flame detector or equivalent approved Pumps/engines
Extraction	Continuous with alarm/call-out	Pressure gauge or equivalent approved Pumps/engines

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system

### c.1.2

### MONITORING OF EMISSIONS TO AIR

**Emission Point Reference No.:** Flare Stacks & Generation Plant

Parameter	Flare (enclosed) Monitoring Frequency	Utilisation Plant Monitoring Frequency	Analysis Method <sup>Note 1</sup> / Technique
<b>Inlet</b>			
Methane (CH <sub>4</sub> ) % v/v	Continuous	Weekly	Infrared analyser or equivalent approved
Carbon dioxide (CO <sub>2</sub> ) % v/v	Continuous	Weekly	Infrared analyser or equivalent approved
Oxygen (O <sub>2</sub> ) % v/v	Continuous	Weekly	Electrochemical or equivalent approved
<b>Process Parameters</b>			
Combustion Temperature	Continuous	Quarterly	Temperature Probe/datalogger To be agreed.
Residence Time	Quarterly	Quarterly	
<b>Outlet</b>			
Carbon monoxide (CO)	Continuous	Continuous	Flue gas analyser/datalogger or equivalent approved
Nitrogen Oxides (NO <sub>x</sub> )	Biannually	Biannually	Flue gas analyser or equivalent approved
Sulphur dioxide (SO <sub>2</sub> )	Biannually	Biannually	Flue gas analyser or equivalent approved
Particulates	Not applicable	Annually	Isokinetic/Gravimetric or equivalent approved

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

**C.1.3**

**MONITORING OF LANDFILL GAS EMISSIONS**

**Location:**

Perimeter Landfill Gas boreholes <sup>Note1</sup>  
 and  
 At least one monitoring point per cell (to be Agreed)  
 and  
 Other selected locations as may be specified

<b>Parameter</b>	<b>Monitoring Frequency</b>	<b>Analysis Method/Technique</b> <sup>Note2</sup>
<b>Methane (CH<sub>4</sub>)</b>	Monthly	InfraRed Analyser/FID
<b>Carbon Dioxide (CO<sub>2</sub>)</b>	Monthly	InfraRed
<b>Oxygen (O<sub>2</sub>)</b>	Monthly	Electrochemical Cell
<b>Atmospheric pressure &amp; Trend</b>	Monthly	Standard method

**Note 1:** All penimeter monitoring boreholes must be installed to the standards specified in the Agency Guidance on Landfill Monitoring.

**Note 2:** Or other method agreed

## c2.1 LEACHATE MONITORING

**Location:** Leachate Holding Tank (L), Side slopes risers to leachate sumps

<b>PARAMETER</b> <sup>Note 1</sup>	<b>LEACHATE</b> <sup>Note 2</sup> <b>Monitoring Frequency</b>
<b>Visual Inspection/Odour</b>	Daily
<b>Leachate Level</b>	Weekly
<b>BOD</b>	Quarterly
<b>COD</b>	Quarterly
<b>Chloride</b>	Annually
<b>Ammoniacal Nitrogen</b>	Annually
<b>Electrical Conductivity</b>	Annually
<b>Ph</b>	Annually
<b>Metals / non metals</b> <sup>Note 3</sup>	Annually
<b>Cyanide (Total)</b>	Annually
<b>Fluoride</b>	Annually
<b>List I/II organic substances</b> <sup>Note 4</sup>	Annually
<b>Mercury</b>	Annually
<b>Sulphate</b>	Annually
<b>Total P/orthophosphate</b>	Annually
<b>Total Oxidised Nitrogen</b>	Annually

- Note 1:** All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures.
- Note 2:** Visual Inspection and Leachate Levels to be monitored at all leachate monitoring points in the cells, Collection sumps and holding tank. Leachate composition to be monitored at the leachate holding tank.
- Note 3:** Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.
- Note 4:** 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 (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).

**c.3****AMBIENT MONITORING*****Air Monitoring***

Location:

D1A – D6A (incl.) Drawing Ref: KTK/2002

Parameter	Monitoring Frequency	Analysis Method/Technique
Dust deposition	Monthly	Bergerhoff

***Groundwater Monitoring***

Location:

All Groundwater Wells (Drawing Ref. KTK/2002)

PARAMETER <sup>Note 1</sup>	Monitoring Frequency
Visual Inspection/Odour <sup>Note 2</sup>	Monthly
Groundwater Level (wells)	Monthly
Dissolved Oxygen	Quarterly
Total Organic Carbon	Quarterly
Electrical Conductivity	Quarterly
Ammoniacal Nitrogen	Quarterly
Chloride	Quarterly
Fluoride	Quarterly
Sulphate (SO <sub>4</sub> )	Quarterly
Total alkalinity	Quarterly
Metals / non metals <sup>Note 3</sup>	Quarterly
Mercury	Quarterly
Barium	Quarterly
Arsenic	Quarterly
Nitrate & Nitrite	Quarterly
Total P/orthophosphate	Quarterly
Phenols	Quarterly
List I/II organic substances (Screen) <sup>Note 4</sup>	Annually
Faecal Coliforms	Annually
Total Coliforms	Annually

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

Note 2: Where there is evident gross contamination, additional samples should be analysed and the full suite of parameters shown tested.

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

Note 4: 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 (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).

**Storm Water/Surface Water Monitoring**

Location: Surface water monitoring points (Drawing Ref. KTK/2002)

<b>PARAMETER</b> <sup>Note 1</sup>	<b>SURFACE WATER Monitoring Frequency</b>
<b>Visual Inspection/Odour</b> <sup>Note 2</sup>	Weekly
<b>Dissolved Oxygen</b>	Weekly
<b>COD</b>	Weekly
<b>BOD</b>	Quarterly
<b>Electrical Conductivity</b>	Quarterly
<b>Ammoniacal Nitrogen</b>	Quarterly
<b>Chloride</b>	Quarterly
<b>pH</b>	Quarterly
<b>Total Suspended Solids</b>	Quarterly
<b>Sulphate (SO<sub>4</sub>)</b>	Quarterly
<b>Metals / non metals</b> <sup>Note 3</sup>	Quarterly
<b>Mercury</b>	Quarterly
<b>Nitrate and Nitrite</b>	Quarterly
<b>Total P/orthophosphate</b>	Quarterly
<b>Total alkalinity</b>	Quarterly
<b>Total Organic Carbon</b>	Quarterly
<b>List I/II organic substances (Screen)</b> <sup>Note 4</sup>	Annually
<b>Faecal Coliforms</b>	Annually
<b>Total Coliforms</b>	Annually

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

**Note 2:** Where there is evident gross contamination, additional samples should be analysed and the full suite of parameters shown tested.

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

**Note 4:** 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 (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).

**Meteorological Monitoring**

**Location :** At the facility at a location to be agreed, or from an agreed representative station in the region.

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Direction	Daily	Standard
Wind Force <sup>Note 1</sup>	Daily	Standard
Atmospheric Pressure <sup>Note 1</sup>	Daily	Standard

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

**Asbestos Fibre Monitoring**

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

Parameter (fibres/ml)	Monitoring Frequency	Analysis Method/Technique
Asbestos Fibre Concentration	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 D Specified Engineering Works**

Specified Engineering Works
Development of the facility including preparatory works and lining.
Installation of Landfill Gas Management Infrastructure.
Installation of Leachate Management Infrastructure.
Installation of Groundwater Control Infrastructure.
Installation of Surface Water Management Infrastructure.
Final capping.
Any other works notified in writing by the Agency.

## SCHEDULE E Reporting

Completed reports shall be submitted to:

The Environmental Protection Agency  
Office of Environmental Enforcement  
Regional Inspectorate  
Mc Cumiskey House  
Richview  
Clonskeagh Road  
Dublin 14

**or** Any other address as may be specified by the Agency

Reports are required to be forwarded as required in the licence and as may be set out below:

Report	Reporting Frequency	Report Submission Date
<b>Annual Environment Report (AER)</b>	Annually	By 31 <sup>st</sup> March of each year.
<b>Record of incidents</b>	As they occur	Within five days of the incident.
<b>Specified Engineering Works reports</b>	As they arise	Prior to the works commencing.
<b>Monitoring of landfill gas</b>	Quarterly	Ten days after end of the quarter being reported on.
<b>Monitoring of Surface Water Quality</b>	Quarterly	Ten days after end of the quarter being reported on.
<b>Monitoring of Groundwater Quality</b>	Quarterly	Ten days after end of the quarter being reported on.
<b>Monitoring of Leachate</b>	Quarterly	Ten days after end of the quarter being reported on.
<b>Dust Monitoring</b>	Quarterly	Ten days after end of the quarter being reported on.

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

## SCHEDULE F Annual Environmental Report

### Annual Environmental Report Content <sup>Note 1</sup>

Emissions from the installation/facility.  
Waste management record.  
Waste (sludge) analysis.  
Waste Recovery Report.  
Topographical survey  
Remaining void, projected completion date.  
Resource consumption summary.  
Complaints summary.  
Schedule of Environmental Objectives and Targets  
Environmental management programme – report for previous year  
Environmental management programme – proposal for current year  
Pollution emission register – report for previous year  
Pollution emission register – proposal for current year  
Noise monitoring report summary  
Meteorological data summary  
Ambient monitoring summary  
Current monitoring location reference drawing.  
Tank and pipeline testing and inspection report  
Reported incidents summary  
Energy efficiency audit report summary  
Report on progress made and proposals being developed to minimise generation of leachate for disposal.  
Development / Infrastructural works summary (completed in previous year or prepared for current year).  
Report on management and staffing structure of the installation/facility.  
Report on the programme for public information.  
Reports on financial provision made under this licence.  
Statement on the costs of Landfill.  
Review of Environmental Liabilities.  
Any amendments to the CRAMP.  
Detailed Statement, with mass balance, of C & D wastes and compost used in construction

Any other items specified by the Agency.

**Note 1:** Content may be revised subject to the agreement of the Agency