



Limerick County Council

| Environment

t: 061 496264

f: 061 496008

Limerick County Council
County Hall
Dooradoyle Co. Limerick

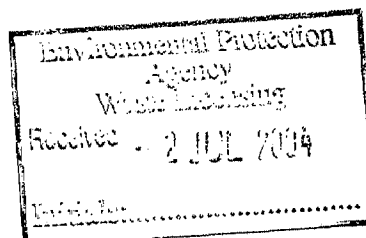
Comhairle Chontae Luimnigh
Halla an Chontae
Tuar an Dail Contae Luimnigh

t: 061 496000
f: 061 496001
e: environ@limerickcoco.ie

Environment Section
TT/MM

2nd July, 2004.

Environmental Protection Agency,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford.



Attention – Waste Licensing Section.

Re/ Application to Review Waste License Reg. No. 17-2 for Gortadroma
Landfill, Ballyhahill, Co. Limerick.

Dear Sir/Madam,

I am enclosing the following documents in connection with our application for a review of Waste License Reg. No. 17-2 in connection with a proposed extension of the Gortadroma Landfill at Ballyhahill, Co. Limerick:-

- Four copies of the application.
- **Paying Order No. 978636 in the sum of €20,747.11. This includes €20,320 in respect of the application fee for a review of the Waste License.** The balance refers to the Council's Order No. 400068893 (Reference – Cyril Morris/Yvonne Rowland).
- The Manager's Order directing that the application for a review of the Waste License be made.
- A copy of the newspaper advertisement for the license review application.
- A copy of the application to An Bord Pleanala for approval of the proposed extension of the landfill.

- A copy of the newspaper advertisement for the Environmental Impact Statement in relation to the proposed extension to the landfill.
- 4 copies of the Waste Management Plan for Limerick/Clare/Kerry region.
- 4 copies of landownership maps at 1:2500 scale submitted as Attachment B1.
- One paper copy of the Environmental Impact Statement.
- 14 compact discs, each containing an electronic copy of the Environmental Impact Statement.

I look forward to receiving your decision on the application in due course.

Yours faithfully,

for Mr. Scott
Helen Kenneally,
Staff Officer,
Environment Section.

Encs/

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LIMERICK COUNTY COUNCIL

COUNTY MANAGER'S ORDER

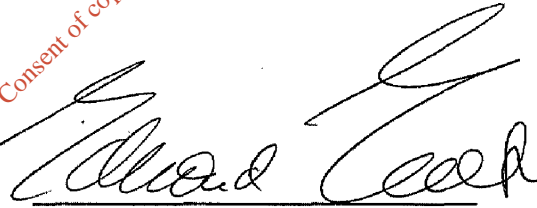
Ref: 18-18 (1)

ORDER NO. 159/2004

SUBJECT: Proposed extension to the Gortadroma Landfill Facility.
Application for a review of the Waste Licence, Register
Number 17-2.

ORDER: Having considered the report of Mr. Tom Tarpey, Senior Engineer, as endorsed by Mr. Tom Enright, Director of Service, Environment & Emergency Services, dated 10th June, 2004, I hereby order that Limerick County Council submit an application for a review of Waste Licence Register, Number 17-2 to the Environmental Protection Agency.

SIGNED:



COUNTY MANAGER

DATED THIS 25th DAY OF June 2004.



17-3

Waste Licensing

Waste Disposal Activities (Landfill Sites)

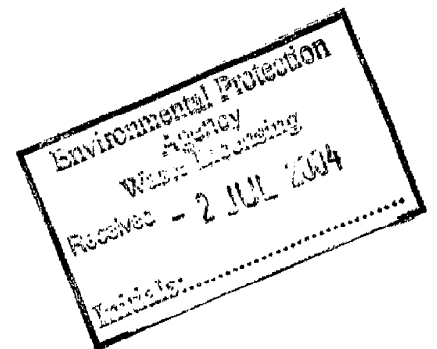
Application for Review of Waste Licence

EPA Reg. No.: (Office use only)	17-2
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Comhairle Chontae Luimnigh
Limerick County Council



Application by
Limerick County Council
for a Review of Waste Licence 17-2
for Gortadroma Landfill, Ballyhahill, Co. Limerick.

June 2004



INTRODUCTION

A valid application must contain the information prescribed in the Waste Management (Licensing) Regulations 1997 (SI No. 133 of 1997) as amended by SI No. 162 of 1998 or Waste Management (Licensing) Regulations (S.I. No. 185 of 2000), whichever is relevant. The application should conform to the format set out in this application form and the relevant *Guidance Note*. Each page of the completed application form must be numbered, e.g. page 5 of 45, etc. Also duplicated pages from the application form should be uniquely numbered, e.g. page 5(i) of 45, etc. **Wherever possible, information should be supplied in the spaces given in the application form. Additional information can be included in clearly identifiable, numbered attachments, which should be cross-referenced with the relevant sections in the application form. A contents list should be included with each volume.** The applicant should refer to the *Guidance Note* in order to ensure that the application includes all the information required. Consistent measurement units must be used throughout.

It should be noted that it will not be possible to process or determine the application until the required documents have been provided in sufficient detail and to a satisfactory standard.

All questions should be answered. No waste management facility is exactly the same and hence each application will require different information. It is therefore possible that some of the sections of this application form may not be relevant to the activity concerned. **Where information is requested in the application form, which is not relevant to the application, the words “not applicable” should be clearly written on the form. The abbreviation “N/A” should not be used.**

Additional information may need to be submitted beyond that which is explicitly requested on this form. Any references made should be supported by a bibliography. The Agency may request further information if it considers that its provision is material to the assessment of the application. Advice should be sought from the Agency where there is doubt about the type of information required or the level of detail.

Information supplied in this application, including supporting documentation will be put on public display and be open to inspection by any person. **Should the applicant consider information to be confidential, then the nature of this information, and the reasons why it is considered confidential should be clearly stated in an attachment to the Application Form. This information should be submitted in a separate enclosure bearing the legend “In the event that this information is deemed not to be held as confidential, it must be returned to (representative of the applicant)”.**

Applicants should also note much of the information supplied on the application form may, if a waste licence is granted, form part of the licence. **Accordingly, applicants should be aware that they may be required to comply with any written statement or drawing they supply in the application.**

Applicants should be aware that a contravention of the conditions of a waste licence is an offence under s39 of the Waste Management Act 1996.

The provision of information in an application for a waste licence which is false or misleading is an offence under s45 of the 1996 Act.

Note: Drawings. The following guidelines are included to assist applicants:

- All drawings submitted should be titled and dated.
- They should have a unique reference number and should be signed by a clearly identifiable person.
- They should indicate a scale and, if appropriate, the direction of north.



- All drawings should, generally, be to a scale of between 1:20 to 1:500, depending upon the degree of detail needed to be shown and the size of the facility. Drawings delineating the boundary can be to a smaller scale of up between 1:1000 to 1:10560, but must clearly and accurately present the required level of detail. Drawings showing the site location can be to a scale of between 1:50 000 to 1:126 720. Provide legends on all drawings and maps as appropriate.
- All drawings referred to by the applicant should be submitted in a separate volume, titled "Drawings" and referred to throughout the application.

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B. GENERAL

B.1 Applicant's Details

Name*: Limerick County Council

Address: County Hall
Dooradoyle
Limerick

Tel: 061-496000

Fax: 061-496001

- This should be the name of the applicant which is current on the date this Waste Licence Application is lodged with the Agency.

Operator's Details (if different)

Name*: Not applicable

Address:

Tel:

Fax:

Name and address for Correspondence to which all correspondence and communication will be directed)

Name: Mr. Tom Tarpey, Senior Engineer

Address: Limerick County Council
County Hall
Dooradoyle
Limerick

Tel: 061-496000

Fax: 061-496001

Address of registered or principal office of Body Corporate (if applicable)

Address: not applicable

Tel:

Fax:

If the applicant is a body corporate, the following information must be attached as **Attachment B1:**

- a) a Certified Copy of the Certificate of Incorporation or Memorandum & Article of Association;
- b) the Company's Registration Number from the Companies Registry Office.

State the interest of the applicant in the land which is subject to the application. The applicant is (please tick):

Landowner	<input checked="" type="checkbox"/>
Lessee	<input type="checkbox"/>
Prospective Purchaser	<input checked="" type="checkbox"/>
Other (please specify)	

Name and address of all occupiers of the land on which the Activity is situated (if different from applicant named above).

Name: not applicable

Address:

Tel:

Fax:

Name:

Address:

Tel:

Fax:

The appropriate documentation, demonstrating the interest of the applicant in the land subject to the application, should be provided in **Attachment B1.**



Name and address of the current* owner(s) and lessees of the land, buildings and ancillary plant on which the activity is or will be situated (if different from applicant named above). A drawing showing the land ownership and areas leased should be included.

Name: Thomas Hanley
Address: Boherbui
Newcastle West
Co. Limerick

Tel: 069 62502

Fax: Peter Nash

Name:
Address: Cahernagh
Ballyhahill
Co. Limerick

Tel: 069 60167

Fax:

Name: Patrick O'Brien
Address: Cahernagh
Ballyhahill
Co. Limerick

Tel: 069 60358

Fax:

Name: Tom Normoyle
Address: Moneymohill
Ballyhahill
Co. Limerick

Tel:

Fax:

Name: John Joe Collins
Address: Glensharrold,
Carrigkerry,
Co. Limerick.

Tel: 069 60245

Fax:

Name: Elizabeth Woulfe,

Address: Finnoe

Ballyhahill

Co. Limerick

Representative of Timothy Neville
(recently deceased).

Tel: 069 82132

Fax:

*Current at the time the application is submitted

Drawing B.1 illustrates the landownership at present.

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Drawing B.1 Landownership Map

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Placeholder

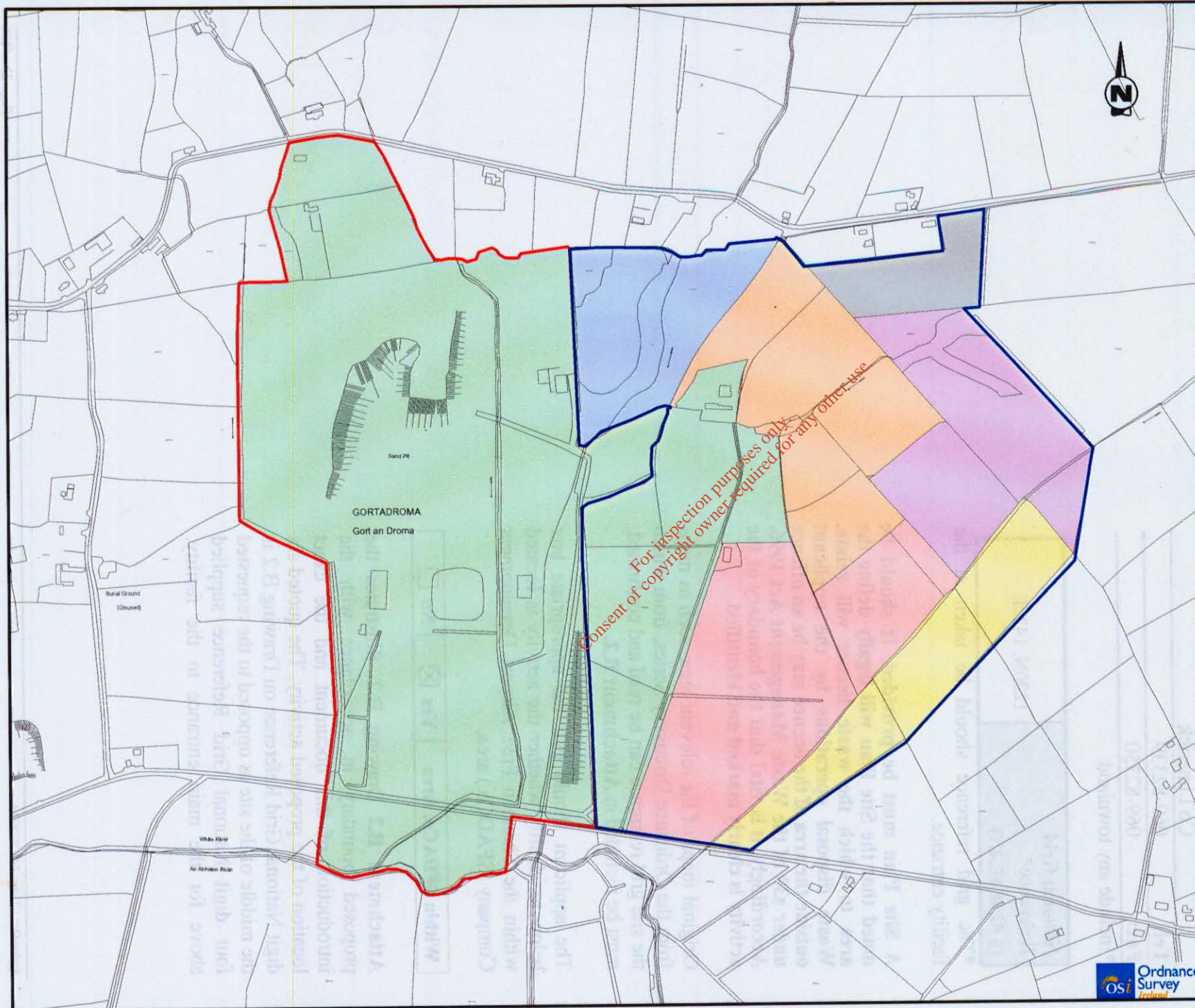
This page has been inserted to indicate that content has been extracted from this location in the document and has been stored in a separate file.
(This is due to file size issues.)

The extracted content can be found in the following electronic pdf file:

Application Form-Map-1


Licence: W0017-03

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Legend

- John Joe Collins
- Kathleen O'Brien
- Peter Nash
- Thomas Hanley
- Thomas Normoyle
- The Reps. of the Late Timothy Neville
- Limerick County Council
- Existing Landfill Boundary
- Proposed Extension



Limerick



Limerick County Council

Project Waste License Application
Gortadroma Landfill

Title

Landownership Map

Figure B.1


RPS mgos

Carmelita House
Ouis Leaghairne
City Centre
Phone: 01-2020870
Fax No: 01-2023707
rpsmgos@rpsmgos.ie

Issue Details	
Drawn: SK	Project No: MDE0148
Checked: EB	File Ref:
Approved: XXX	MDE0148M0148D02
Scale: NTS	Drawing No: Rev.
Date: 23/08/2004	MI0148 D02

Notes

1. This drawing is the property of RPS-MGOS Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
2. All levels are referred to Ordnance Datum, Mean Sea Level.
3. NOT TO SCALE: Use figured dimensions only. If in doubt ask.
4. Ordnance Survey Ireland Licence No. EI9 0035004 Copyright Government of Ireland.



B.2 Location of Activity

Name: Gortadroma Landfill
Address*: Limerick County Council
Gortadroma
Ballyhahill
Co Limerick
Tel: 069-82339
Fax: 069-82350

*Include any townland

National Grid Reference* (8 digit 4E,4N)	1220N, 1432E
--	--------------

*The grid reference should be taken at the facility entrance.

A Site Plan must be provided. It should be noted that the Site Plan will legally define the area to which the waste licence will relate. Waste disposal operations by the applicant outside the area of the licence may be an offence under s39 of the Waste Management Act 1996. Accordingly, it is vital that the boundary of the activity is clearly marked and identified.

Original maps of the relevant area, such as maps from the Ordnance Discovery Series, from which the site grid reference can be read and confirmed, must be included in **Attachment B.2**.

The applicant should tick the appropriate box below to identify whether the activity is located within the Shannon Free Airport Development Company (SFADCo.) area.

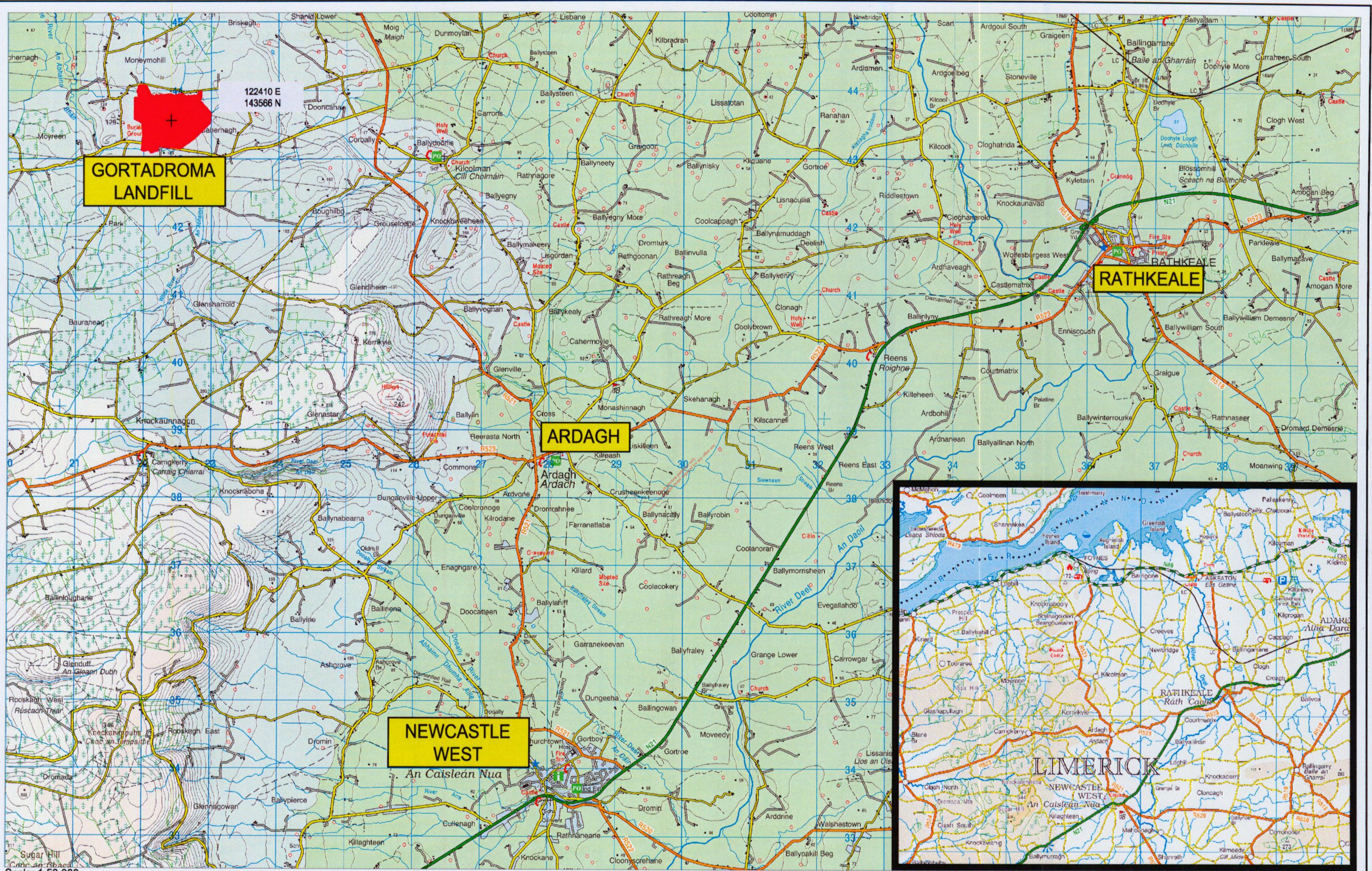
Within SFADCo. Area	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
----------------------------	---	-----------------------------

Attachment B.2 Drawing B.2. illustrates the proposed boundary in accordance with the introduction of this document and the exact location of the proposed activity. The quoted six digit National Grid Reference on Drawing B.2 is the middle of the site as opposed to the requested four digit National Grid Reference supplied above for the main entrance to the facility.



Drawing B.2 Site Location

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<p>Limerick County Council</p>	<p>RPS MCOS</p> <p>RPS-MCOS Ltd., Carnegie House, Library Road, Dun Laoghaire, Co. Dublin, Ireland. T: +353 1 202 0870 - F: +353 1 202 0707 E: rpsmcos@rpsgroup.ie W: www.rpsmcos.ie</p>	<p>NOTES</p> <ol style="list-style-type: none"> This drawing is the property of RPS-MCOS Ltd., it is a confidential document and must not be copied, used, or its content divulged without prior written consent. All Levels refer to Ordnance Survey Datum, Main Head. DO NOT SCALE, use figured dimensions only, if in doubt ask. 	<p>Client:</p>	<p>Project:</p>	<p>Title:</p>	<p>Drawn by: RH Job No: mde0148</p>
			<p>Scale: 1:50,000</p>	<p>Scale: 1:250,000</p>	<p>Waste Licence Application Gortadroma Landfill</p>	<p>SITE LOCATION</p>

B.3 Planning Authority

Give the name of the planning authority in whose functional area the activity is or will be carried out.

Name: Limerick County Council

Address: County Hall

Dooradoyle

Limerick

Tel: 061-496000

Fax: 061-496001

Planning Permission relating to this application:-

<i>has been obtained</i>	<input type="checkbox"/>
<i>is being processed</i>	<input checked="" type="checkbox"/> *
<i>is not yet applied for</i>	<input type="checkbox"/>
<i>is not required</i>	<input type="checkbox"/>

* By an Bord Pleanala

<i>Local Authority Planning File Reference N^o:</i>	
---	--

Attachment B.3 should contain *all* current planning permissions, including a copy of *all* conditions, and current planning applications, including all drawings. Copies of any EIS should also be enclosed. Where planning permission is not required for the development, provide reasons, relevant correspondence, etc.

B.4 Sanitary Authority

In the case of a discharge of any trade effluent or other matter (other than domestic sewage or storm water) to a sewer of a sanitary authority, give the name of the sanitary authority in which the sewer is vested or by which it is controlled and the waste water treatment plant (if any) to which the sewer discharges.

Specify which of the following (if any) is relevant:

<i>Sewer</i>	<input type="checkbox"/>
<i>Treatment Plant</i>	<input type="checkbox"/>

Tick as appropriate

Name: Not applicable

Address:

Tel:

Fax:



Waste water treatment plant

Name: Not applicable

Address:

Name:

Address:

In the case of a discharge of any trade effluent or other matter to a sewer not vested or controlled by a sanitary authority, give the name and address of the owner(s) of the sewer and the waste water treatment plant (if any) to which the sewer discharges.

Name: Not applicable

Address:

Tel:

Fax:

Specify the discharge point, including grid reference if appropriate. Specify method of transport of effluent. Give particulars of the source, location, nature, composition, quantity, level and rate of the proposed discharge of effluent. Table B.4 should be used to describe the emissions for each emission point.

The applicant must enclose, as **Attachment B.4**, a copy of any effluent discharge licence and/or agreement between the applicant and the body with responsibility for the sewer.

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Attachment B.3
Planning Newspaper Advertisement
And Letter to Planning Authority

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Limerick County Council

| Environment

t: 061 496264

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Limerick County Council
County Hall
Dooradoyle Co. Limerick

Comhairle Chontae Luimnigh
Halla an Chontae
Tuar an Daill Contae Luimnigh

t: 061 496000
f: 061 496001
e: environ@limerickcoco.ie

Ref: 18/18(20) TKF

2nd July, 2004.

**Secretary,
Local Authority Projects Section,
An Bord Pleanála,
64 Marlborough Street,
Dublin 1.**

Re: Application to An Bord Pleanála for approval of the proposed extension to the Gortadroma Landfill Facility.

**Waste Management Acts, 1996-2003,
Planning and Development Acts, 2000-2002,
Planning and Development Regulations, 2001.**

Dear Secretary,

Limerick County Council is proposing to extend the Gortadroma Landfill Facility at Gortadroma and Cahernagh, Ballyhanill, Co. Limerick.

An Environmental Impact Statement has been prepared by RPS-MCOS Ltd., Consultant Engineers, on behalf of Limerick County Council in respect of the project. Having regard to the Planning and Development Acts, 2000-2002, I herewith enclose 3 no. copies of the Environmental Impact Statement.

We hereby request the approval of An Bord Pleanála for the proposed extension of the Gortadroma Landfill Facility pursuant to the provisions of Section 175 of the Planning and Development Act, 2000.

With regard to the Statutory Public Notices, please find attached for your attention copies of newspaper notices (full newspaper attached) that appeared in the local and national newspapers in accordance with Section 175(4)(a) of the Planning and Development Act, 2000.

- Limerick Leader
- Irish Independent

Saturday, 3rd July, 2004.
Thursday, 1st July, 2004.

S:\waste\Landfills\Gortadroma Extension\EIS\Cover Letter to An Bord Pleanala with EIS.doc

Finally, I have also included a list of the prescribed bodies to which the Environmental Impact Statement was sent in accordance with Section 175(4)(b) of the Planning and Development Act, 2000 and Article 121 of the Planning and Development Regulations, 2001.

Details of the Compulsory Purchase Order will also be submitted to An Bord Pleanála.

If you have any queries, please contact Michael Scott up to 20th July, 2004 and Tina Knox-Fleming, Administrative Officer, at (061) 496379 thereafter.

Signed: M. Scott
for Tina Knox-Fleming,
for COUNTY SECRETARY

Encl.

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Limerick County Council

Comhairle Chontae
Luimnigh



PUBLIC NOTICE

APPLICATION TO AN BORD PLEANÁLA FOR APPROVAL OF THE PROPOSED EXTENSION TO THE GORTADROMA LANDFILL FACILITY

NOTICE IS HEREBY GIVEN in accordance with Section 175(4)(a) of the Planning and Development Act, 2000 that Limerick County Council, with head office at County Hall, Dooradoyle, Co. Limerick, proposes to seek approval of the Board for an extension to the Gortadroma Landfill Facility at Gortadroma and Cahernagh, Ballynahill, Co. Limerick.

Nature of the Facility

The proposed development consists of a 41-hectare extension to the existing Gortadroma Landfill Facility. The extension will cater for the disposal of approximately two million tonnes of municipal waste in eleven individual cells. The maximum intake will be limited to 130,000 tonnes per annum. The cells will be developed on a phased basis as the demand arises.

An Environmental Impact Statement has been prepared in respect of this proposed development.

Public Display

A copy of the Environmental Impact Statement for the proposed development will be available for inspection or purchase at:

- The offices of Limerick County Council, County Hall, Dooradoyle, Co. Limerick.
- The Reception Building, Gortadroma Landfill Facility, Ballynahill, Co. Limerick.
during opening hours from 1st July, 2004 to 27th August, 2004.

A copy of the Environmental Impact Statement may be purchased for the following fees:-

- Volume 1: Non-Technical Summary of the Environmental Impact Statement, €5.
- Volume 2: of Environmental Impact Statement - Main Report, €50.
- Volume 3: of Environmental Impact Statement - Appendices, €100.
- Electronic Copy of all of the above documents on Compact Disc, (CD) €10.

Any submission or observation in relation to the implications of the proposed development for proper planning and sustainable development in the area concerned and the likely effects on the environment of the proposed development, if carried out, may be made in writing to **An Bord Pleanála, 64 Marlborough Street, Dublin 1** within the period from 1st July, 2004 to 27th August, 2004, to be received by An Bord Pleanála not later than 5.30pm on the last day of the period.

A Compulsory Purchase Order has been made in respect of the lands required for the proposed landfill extension under the provisions of the Local Government (No.2) Act, 1960 and this Order is the subject of a separate Public Notice. Where written objections by the affected landowners are made to this Compulsory Purchase Order and not withdrawn, An Bord Pleanála may hold an oral hearing under Section 218 of the Planning and Development Act, 2000 and the person holding such oral hearing shall also be entitled to hear evidence in relation to the likely effects on the environment of such development.

Before making its decision on the application for approval, An Bord Pleanála must consider the Environmental Impact Statement, any written submissions made to it and not subsequently withdrawn and, where an oral hearing is held, the report and any recommendations of the inspector holding the oral hearing. Public notice of any oral hearing will be given at a later date.

Further information may be obtained from:

Name: **Ms. Sinead Kennedy**
Title: **Executive Engineer**
Address: **Gortadroma Landfill Facility, Ballynahill, Co. Limerick.**

Tel: 069 82387 Fax: 069 82350

DATED THIS 25th DAY OF JUNE 2004
ANNE HAUGH, COUNTY SECRETARY

An Rúnaí Contae

County Hall, Dooradoyle, Co. Limerick.
Tel. 061 496000 Fax. 061 496001 www.lcc.ie

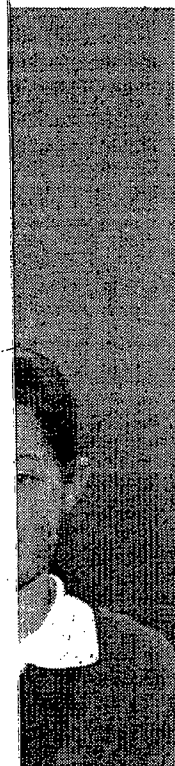
Working for you!

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Appeared in the Limerick header of Saturday 03/07/04

B.5 Notices and Advertisements

Articles 6 and 7 of the Waste Management (Licensing) Regulations 1997 requires all applicants to advertise the application in a newspaper and by way of a site notice.

Attachment B.5 should contain a copy of the site notice and a drawing showing its location on site. **The original application** of the newspaper containing the advertisement should be included with the five copies of the application. Where the Waste Management (Licensing) Regulations 1997 require notice of the application to be given to the Planning Authority, a copy of this notice should also be included.

Attachment B.5 Site notice and advertisement

See attachment B.5 the waste licence application site notice and newspaper advertisement. The location of the site notice can be seen on drawing B.5 and is located at the main site entrance.

In addition, attachment B.3 contains a copy of the letter to the planning authority and the planning newspaper notice.

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**Attachment B.5
WLA Newspaper Advertisement
And Site Notice**

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LIMERICK COUNTY COUNCIL

Comhairle Chontae Luimnigh

PUBLIC NOTICE

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR THE REVIEW OF A WASTE LICENCE

NOTICE IS HEREBY GIVEN in accordance with Articles 5, 6 and 7 of the Waste Management (Licensing) Regulations, 2000 (S.I. No.185 of 2000) that Limerick County Council with headquarters at County Hall, Dooradoyle, Co. Limerick, will apply for a Review of a Waste Licence to the Environmental Protection Agency in respect of the landfill facility at Gortadroma Landfill, Ballyhahill, County Limerick in accordance with the Waste Management (Licensing) (Amendment) Regulations, 2002 (S.I. No.336 of 2002)- National Grid Reference as follows:-

122,410E 143,566N

The classes of activity in accordance with the Third Schedule of the Waste Management Act 1996 are:-

- Class 1:** Deposit on, in or under land (including landfill).
- Class 4:** Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
- Class 5:** Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
- Class 6:** Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule
- Class 7:** Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule.
- Class 11:** Blending or mixing prior to submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 13:** Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

The Principal Activity is Class 5 of the Third Schedule as given above.

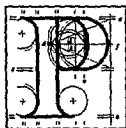
The classes of activity in accordance with the Fourth Schedule of the Waste Management Act 1996 are:-

- Class 2:** Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)
- Class 3:** Recycling or reclamation of metals and metal compounds.
- Class 4:** Recycling or reclamation of other inorganic materials.
- Class 9:** Use of any waste principally as a fuel or other means to generate energy.
- Class 10:** The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.
- Class 11:** Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
- Class 12:** Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 13:** Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

The Application for the Review of the Waste Licence is accompanied by an Environmental Impact Statement. A copy of the Application for the Review of the Waste Licence, the accompanying EIS and any such further information relating to the Application as may be furnished to the Agency in the course of the Agency's consideration of the Application will, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the headquarters of the Agency at Johnstown Castle, Wexford, and the offices of the County Council at County Hall, Dooradoyle, Co. Limerick.

NOTICES

An Bord Pleanála



the proposed road from Adamstown to the upgrading of the Ican Road, otherwise Scheme (Outer Ring Road) Act, 1993

exercise of the powers conferred, made an Order Under Ring Road Phase purposes of the said

into the design and of low noise surfacing noise levels associated shall not exceed 60dB (field) when measured of two or more storey accordance with the s on the Treatment of y the National Roads

less than 3 metres in nage 150 to chainage between Adamstown

ceptors.

ilar, shall be located rks on the link road d when road surface in progress, and the ied in the contract made available at the ative's local office at

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shall be designed and ent Guidelines 2003 cal Government, the tion Office, and the ions set out in the al Manual for Urban id Local Government

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way bridge at the ith the requirements y the Department of ent of Transport and

yclists.

vided in the vicinity wnen and Pennyhill

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Limerick County Council

Comhairle Chiontae Lúimnigh



PUBLIC NOTICE

APPLICATION TO AN BORD PLEANÁLA FOR APPROVAL OF THE PROPOSED EXTENSION TO THE GORTADROMA LANDFILL FACILITY

NOTICE IS HEREBY GIVEN in accordance with Section 175(4)(a) of the Planning and Development Act, 2000 that Limerick County Council, with head office at County Hall, Dooradoyle, Co. Limerick, proposes to seek approval of the Board for an extension to the Gortadroma Landfill Facility at Gortadroma and Cahernagh, Ballyhahill, Co. Limerick.

Nature of the Facility

The proposed development consists of a 41-hectare extension to the existing Gortadroma Landfill Facility. The extension will cater for the disposal of approximately two million tonnes of municipal waste in eleven individual cells. The maximum intake will be limited to 130,000 tonnes per annum. The cells will be developed on a phased basis as the demand arises.

An Environmental Impact Statement has been prepared in respect of this proposed development.

Public Display

A copy of the Environmental Impact Statement for the proposed development will be available for inspection or purchase at:

- (a) The offices of Limerick County Council, County Hall, Dooradoyle, Co. Limerick.
- (b) The Reception Building, Gortadroma Landfill Facility, Ballyhahill, Co. Limerick, during opening hours from 1st July, 2004 to 27th August, 2004.

A copy of the Environmental Impact Statement may be purchased for the following fees:-

- Volume 1: Non-Technical Summary of the Environmental Impact Statement, €5.
- Volume 2: of Environmental Impact Statement - Main Report, €50.
- Volume 3: of Environmental Impact Statement - Appendices, €100.
- Electronic Copy of all of the above documents on Compact Disc, (CD) €10.

Any submission or observation in relation to the implications of the proposed development for proper planning and sustainable development in the area concerned and the likely effects on the environment of the proposed development, if carried out, may be made in writing to An Bord Pleanála, 64 Marlborough Street, Dublin 1 within the period from 1st July, 2004 to 27th August, 2004, to be received by An Bord Pleanála not later than 5.30pm on the last day of the period.

A Compulsory Purchase Order has been made in respect of the lands required for the proposed landfill extension under the provisions of the Local Government (No.2) Act, 1960 and this Order is the subject of a separate Public Notice. Where written objections by the affected landowners are made to this Compulsory Purchase Order and not withdrawn, An Bord Pleanála may hold an oral hearing under Section 218 of the Planning and Development Act, 2000 and the person holding such oral hearing shall also be entitled to hear evidence in relation to the likely effects on the environment of such development.

Before making its decision on the application for approval, An Bord Pleanála must consider the Environmental Impact Statement, any written submissions made to it and not subsequently withdrawn and, where an oral hearing is held, the report and any recommendations of the Inspector holding the oral hearing. Public notice of any oral hearing will be given at a later date.

Further information may be obtained from:

Name: Ms. Sínead Kennedy,
Title: Executive Engineer.
Address: Gortadroma Landfill Facility, Ballyhahill, Co. Limerick.

Tel: 069 82387 Fax: 069 82350

DATED THIS 25th DAY OF JUNE 2004
ANNE HAUGH, COUNTY SECRETARY

NOTICE OF A COMPULSORY PURCHASE ORDER UNDER SECTION 76 OF AND THE THIRD SCHEDULE TO THE HOUSING ACT, 1966, AS EXTENDED BY SECTION 10 OF THE LOCAL GOVERNMENT (NO.2) ACT, 1960, TO BE PUBLISHED IN ACCORDANCE WITH ARTICLE 4(a) OF THE THIRD SCHEDULE TO THE HOUSING ACT, 1966, AS AMENDED BY THE PLANNING AND DEVELOPMENT ACTS, 2000-2002 AND PURSUANT TO THE WASTE MANAGEMENT ACTS 1996-2003.

COMPULSORY ACQUISITION OF LAND

LIMERICK COUNTY COUNCIL (GORTADROMA LANDFILL) COMPULSORY PURCHASE ORDER 2004

The Limerick County Council (hereinafter referred to as "the local authority") in exercise of the powers conferred upon them by section 76 of the Housing Act, 1966, and the Third Schedule thereto, as extended by section 10 of the Local Government (No. 2) Act, 1960 as substituted by section 86 of the Housing Act, 1966 as amended by Section 6 and the Second Schedule to the Roads Act, 1993 and as amended by the Planning and Development Acts, 2000-2002 and pursuant to section 38 of the Waste Management Act, 1996 and all other statutory powers thereunto enabling have made an order entitled as above which is about to be submitted to An Bord Pleanála for confirmation. If confirmed, the order will authorise the local authority to acquire compulsorily the land described in the Schedule thereto for the purpose of extending the Gortadroma Landfill Facility.

Owners, lessees and occupiers of the land described in the Schedule will receive individual written notice.

The Board cannot confirm a compulsory purchase order in respect of the land if an objection is made in respect of the acquisition by an owner, lessee or occupier of the land, and not withdrawn, until it has caused to be held an oral hearing into the matter and until it has considered the

PUBLIC NOTICES

PUBLIC NOTICES

Limerick County Council

Comhairle Chiontae Lúimnigh



PUBLIC NOTICE

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR THE REVIEW OF A WASTE LICENCE

NOTICE IS HEREBY GIVEN in accordance with Articles 5 and 6 of the Waste Management (Licensing) Regulations, 2000 (S.I. No.185 of 2000) that Limerick County Council with headquarters at County Hall, Dooradoyle, Co. Limerick, will apply for a Review of a Waste Licence to the Environmental Protection Agency within two weeks of this date, in respect of the landfill facility at Gortadroma Landfill, Ballyhahill, Co. Limerick in accordance with the Waste Management (Licensing)(Amendment) Regulations, 2002 (S.I. No.336 of 2002) - National Grid Reference as follows:

122,410E 143,866N

The classes of activity in accordance with the Third Schedule of the Waste Management Act 1996 are:-

- Class 1:** Deposit on, in or under land (including landfill)
- Class 4:** Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
- Class 5:** Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
- Class 6:** Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule.
- Class 7:** Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule.
- Class 11:** Blending or mixing prior to submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 13:** Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

The Principal Activity is Class 5 of the Third Schedule as given above. The classes of activity in accordance with the Fourth Schedule of the Waste Management Act 1996 are:-

- Class 2:** Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)
- Class 3:** Recycling or reclamation of metals and metal compounds.
- Class 4:** Recycling or reclamation of other inorganic materials.
- Class 9:** Use of any waste principally as a fuel or other means to generate energy.
- Class 10:** The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.
- Class 11:** Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
- Class 12:** Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 13:** Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

The Application for the Review of the Waste Licence is accompanied by an Environmental Impact Statement. A copy of the Application for the Review of the Waste Licence, the accompanying EIS and any such further information relating to the Application as may be furnished to the Agency in the course of the Agency's consideration of the Application will, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the headquarters of the Agency at Johnstown Castle, Wexford, and the offices of the County Council at County Hall, Dooradoyle, Co. Limerick.

An Rúnaí Contae

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Limerick County Council

Comhairle Chuntae Lúimnigh



Closing, 16th July, 2004. (f3/c)

PUBLIC NOTICE

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR THE REVIEW OF A WASTE LICENCE

NOTICE IS HEREBY GIVEN in accordance with Articles 5 and 6 of the Waste Management (Licensing) Regulations, 2000 (S.I. No.185 of 2000) that Limerick County Council with headquarters at County Hall, Dooradoyle, Co. Limerick, will apply for a Review of a Waste Licence to the Environmental Protection Agency within two weeks of this date, in respect of the landfill facility at Gortadroma Landfill, Ballyhahill, Co. Limerick in accordance with the Waste Management (Licensing)(Amendment) Regulations, 2002 (S.I. No.336 of 2002) - National Grid Reference as follows:

122,410E 143,566N

The classes of activity in accordance with the Third Schedule of the Waste Management Act 1996 are:-

- Class 1:** Deposit on, in or under land (including landfill)
- Class 4:** Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
- Class 5:** Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
- Class 6:** Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule.
- Class 7:** Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule.
- Class 11:** Blending or mixing prior to submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 13:** Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

The Principal Activity is Class 5 of the Third Schedule as given above. The classes of activity in accordance with the Fourth Schedule of the Waste Management Act 1996 are:-

- Class 2:** Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)
- Class 3:** Recycling or reclamation of metals and metal compounds.
- Class 4:** Recycling or reclamation of other inorganic materials.
- Class 9:** Use of any waste principally as a fuel or other means to generate energy.
- Class 10:** The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.
- Class 11:** Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
- Class 12:** Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 13:** Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

The Application for the Review of the Waste Licence is accompanied by an Environmental Impact Statement. A copy of the Application for the Review of the Waste Licence, the accompanying EIS and any such further information relating to the Application as may be furnished to the Agency in the course of the Agency's consideration of the Application will, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the headquarters of the Agency at Johnstown Castle, Wexford, and the offices of the County Council at County Hall, Dooradoyle, Co. Limerick.

APPLICATION TO PLANNING AUTHORITY
Limerick County Council:

Mike Hyman, intends to apply for permission to construct a two storey residence, entrance, septic tank, and ancillary works at Cullinna, Cappamore, Co Limerick.

The Planning Application may be inspected or purchased at the offices of the Limerick County Council, County Hall, Dooradoyle, Limerick, and a submission or observation in relation to the application may be made to the authority in writing on payment of the prescribed fee within the period of 5 weeks beginning on the date of receipt by the authority of the application. (f23-24450)

APPLICATION TO PLANNING AUTHORITY
Limerick County Council:

We, Anne-Marie Fitzgerald and Jason Ryan, wish to apply to the above authority for full planning permission for the construction of a bungalow with bio-cycle septic tank and percolation area, front entrance drive, gates, piers, boundary wall and all associated site works at Upper Sunville, Ardpatrick, Kilmallock, Co Limerick.

The Planning Application may be inspected or purchased at the offices of the Limerick County Council, County Hall, Dooradoyle, Limerick, and a submission or observation in relation to the application may be made to the authority in writing on payment of the prescribed fee within the period of 5 weeks beginning on the date of receipt by the authority of the application. (f23-57398)

APPLICATION TO PLANNING AUTHORITY
Limerick County Council:

Planning permission sought from the above authority to construct an extension to side of existing dwelling comprising 2 bedrooms and living accommodation and associated renovation works at Elmpark, Clarina for Joseph Mann. The planning application may be inspected or purchased at the offices of Limerick County Council, County Hall, Dooradoyle, Limerick and a submission or observation in relation to the application may be made to the authority in writing on payment of the prescribed fee within the period of 5 weeks beginning on the date of receipt by the authority of the application. (f3/24422)

APPLICATION TO PLANNING AUTHORITY
Limerick County Council:

We, Kirsten and Aidan Mannix, wish to apply for planning permission to construct a 2 storey dwelling, garage, entrance and associated site works, including septic tank and percolation area at Templemichael, Caherconlish

Limerick leader Saturday 3 July 2004

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Drawing B.5 Site Layout

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Application Form-Map-2

Licence: W0017-03

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B.6 Permits and Licences

Provide details of any current permits or licences held, and/or applied for.

Type of Licence/Permit	Waste Disposal Licence (17-2)
Relevant Legislation	Waste Management (Licensing Regulations, 2000)
Issuing Authority	EPA
Date of Issue	25/9/03
Expiry Date	

Attachment B.6 should contain any additional information, copies of all current licences and permits and copies of all current applications, including all drawings.

Attachment B.6 Waste Licence

See Attachment B.6 for copy of the current waste licence 17-2.

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Attachment B.6 Waste Licence 17-2

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

WASTE LICENCE
LANDFILL FOR NON-HAZARDOUS WASTE

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Waste Licence	17-2
Register Number:	
Licensee:	Limerick County Council
Location of Facility:	Gortadroma Landfill Site, Gortadroma, Ballyhahill, County Limerick.

INTRODUCTION

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

This Waste Licence is for the continued landfilling by Limerick County Council at an engineered landfill, which is located at Gortadroma, Ballyhahill, County Limerick. This licence restricts the amount of waste to be landfilled to 130,000 tonnes per annum of non-hazardous waste.

The infrastructure at the facility includes facility offices, a weighbridge, a wheelwash, waste inspection/quarantine area, leachate collection, treatment and storage infrastructure, a landfill gas collection system with an enclosed flare, surface water collection infrastructure, a composting area and a civic waste facility.

The licence specifies the quality standards which the treated leachate has to meet prior to discharge to the White River.

This licence requires the provision of infrastructure for the utilisation of the landfill gas generated on site. The licensee is also required to implement measures at the facility for the control of odours at the facility.

The licensee must manage and operate the facility to ensure that the activities do not cause environmental pollution. The licensee is required to carry out regular environmental monitoring and submit all monitoring results and a range of reports on the operation and management of the facility to the Agency.

The licence sets out in detail the conditions under which Limerick County Council will operate and manage this facility.

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DECISION & REASONS FOR THE DECISION

Reasons for the decision

The Environmental Protection Agency (the Agency) is satisfied, on the basis of the information available, that the requirements of Section 40(4) of the Waste Management Act, 1996 have been complied with in respect of the application for a waste licence for the activities listed hereunder in Part I.

In reaching this decision the Agency has considered the application and supporting documentation received from the applicant, all submissions and the objection 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 46(2) of the said Act hereby grants this Waste Licence to Limerick County Council, Council Buildings, 79-84 O'Connell Street, Limerick, to carry on the waste activities listed below at Gortadroma Landfill, Gortadroma, Ballyhahill, County Limerick 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*

Class 1	Deposit on, in or under land (including landfill): This activity is limited to waste disposed of at the landfill prior to 1997 which was placed into unlined cells in the exhausted sand and gravel pit.
Class 2	Land treatment, including biodegradation of liquid or sludge discards in soils: This activity is limited to the disposal of sludge from municipal water treatment and wastewater treatment plants and non-hazardous industrial sludge at the facility.
Class 4	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons: This activity is limited to the storage of leachate in the leachate storage lagoon prior to treatment.
Class 5	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment: This activity is limited to the disposal of waste in lined cells.
Class 6	Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule: This activity is limited to the treatment of leachate at the facility.
Class 7	Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule: This activity is limited to the treatment of leachate by settlement, filtration or by chemical precipitation or other physico-chemical means at the leachate treatment plant.
Class 11	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule: This activity is limited to the mixing of sludge with other wastes during the landfilling process to ensure that the waste body is as homogenous as possible.
Class 13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced:

This activity is limited to the storage of waste prior to its disposal.

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

- Class 2 Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):**
This activity is limited to the composting of green waste accepted subject to a limit of 1000m³ of compost and waste at any one time at the facility, the storage of waste oils at the civic waste facility and the use of wood chippings as weekend cover only.
- Class 3 Recycling or reclamation of metals and metal compounds:**
This activity is limited to the storage of metal and metal compounds at the facility.
- Class 4 Recycling or reclamation of other inorganic materials:**
This activity is limited to the storage of inorganic materials at the facility prior to reuse on-site or off-site.
- Class 9 Use of any waste principally as a fuel or other means to generate energy:**
This activity is limited to the provision of a landfill gas recovery facility.
- Class 10 The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system:**
This activity is limited to the use of organic waste which has been fully composted as intermediate cover and in the closure/restoration stage of the landfill.
- Class 11 Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:**
This activity is limited to the use of composted waste as landfill cover material.
- Class 12 Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule:**
This activity is limited to the possible exchange of waste being delivered to the facility in exchange for processed waste subject to the agreement of the Agency.
- Class 13 Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced:**
This activity is limited to the temporary storage of waste prior to inspection, recycling, recover and/or reuse at the facility or elsewhere.

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.

Adequate lighting	20 lux measured at ground level.
Agreement	Agreement in writing.
Annually	At approximately twelve monthly intervals.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
Application	The application by the licensee for this waste licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
BAT	Best Available Techniques as defined in Article 2(11) of Council Directive 96/61/EC concerning integrated pollution prevention and control.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
Condition	A condition of this licence.
Containment boom	A boom which can contain spillages and prevent them from entering drains or watercourses.
Cover material	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials; or other cover material the use of which has been agreed with the Agency.
Daily Cover	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.
Daytime	0800 hrs to 2200 hrs.
Documentation	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
Emergency	Those occurrences defined in Condition 9.4.
Emission Limits	Those limits, including concentration limits and deposition levels established in <i>Schedule C: Emission Limits</i> , of this licence.
European Waste Catalogue (EWC)	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.
Green waste	Waste wood (excluding timber), plant matter such as grass cuttings and other vegetation.
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.
Incident	The following shall constitute an incident for the purposes of this licence:- <ul style="list-style-type: none"> 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; e) Any breakdown in the enclosed landfill gas flare /utilisation plant (when installed); f) Where treated leachate being discharged exceeds 2 toxic units; and g) Any malfunction of any environmental control system.
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.
Intermediate Cover	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.
Landfill	Refers to the area of the facility where the waste is disposed of by placement on the ground or on other waste.
Landfill Gas	Gases generated from the landfilled waste.
LEL (Lower Explosive Limit)	The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.
Licence	A waste licence issued in accordance with the Act.
Licensee	Limerick County Council.
Liquid Waste	Any waste in liquid form, containing less than 2% dry matter or tankered to the facility.
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Monthly	A minimum of twelve times per year, at approximately monthly intervals.

Night-time	2200 hrs to 0800 hrs.
Quarterly	At approximately three monthly intervals.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% dry matter.
Specified Emissions	Those emissions listed in <i>Schedule C: Emission Limits</i> , of this licence.
Specified Engineering Works	Those engineering works listed in <i>Schedule B: Specified Engineering Works</i> , of this licence.
Treated Sludge	Sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as significantly to reduce its fermentability and the health hazards resulting from its use.
Treatment	Treatment means the physical, thermal, chemical or biological processes, including sorting, that change the characteristics of the waste in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery.
Trigger Level	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
EPA Working Day	Refers to the following hours: 0900 hrs to 1730 hrs Monday to Friday inclusive.
Working Face	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.

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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 Drawing No. DG0004 Rev. A01 entitled 'Site Boundary' 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. Municipal Waste, 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: Waste Acceptance*, of this licence.
- 1.5. Waste Acceptance
 - 1.5.1. No hazardous wastes or liquid wastes shall be disposed of at the facility.
 - 1.5.2. Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) shall not be disposed of at the facility from 16 July 2003. Shredded used tyres shall not be disposed of at the facility from 16 July 2006.
 - 1.5.3. The licensee shall ensure that all waste accepted at the facility is subject to treatment by 16th July 2009 or earlier if otherwise instructed by the Agency. This provision may not apply to inert waste for which treatment is not technically feasible, nor to any other waste for which such treatment does not contribute to the objectives of the Landfill Directive (1999/31/EC), as set out in Article 1 of the Directive by reducing the quantity of the waste or the hazards to human health or the environment.
- 1.6. Waste Acceptance Hours and Hours of Operation
 - 1.6.1. Landfill
 - 1.6.1.1. Waste may be accepted at the facility for disposal at the landfill only between the hours of 8.00am and 5.00pm Monday to Friday inclusive and between 8.00am and 5.00pm on Saturdays preceding Bank Holidays.
 - 1.6.1.2. The landfill at the facility may be operated only during the hours of 7.30am to 8.00pm Monday to Friday inclusive, 7.30am to 6.30pm on Saturdays and 8.00am to 4.30pm on Sundays and Bank Holidays.
 - 1.6.1.3. No construction activities are allowed on Sundays and Bank Holidays.
 - 1.6.1.4. Operations on Sundays and Bank Holidays are limited to essential maintenance and fly spraying activities only.
 - 1.6.1.5. Waste shall not be accepted at the landfill on Sundays and Bank Holidays.
 - 1.6.2. Civic Waste Facility
 - 1.6.2.1. Waste shall be accepted at the Civic Waste Facility only between the hours of 8.00am to 5.00pm Monday to Friday inclusive and 8.00am to 5.00pm on Saturdays preceding Bank Holidays.

- 1.7 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.
- 1.7.1 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.
- 1.7.2 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.
- 1.7.3 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.
- 1.8 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.
- 1.9 This licence is being granted in substitution for the waste licence granted to the licensee on 26th November 1999 and bearing Waste Licence Register No: 17-1. The previous waste licence (Register No: 17-1) 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 facility manager with experience commensurate with the level of expertise required 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 The Civic Waste Facility shall be supervised by an appropriately qualified and competent person at all times while waste is being accepted.
- 2.1.3 Both the facility manager and deputy, and any replacement manager or deputy, shall successfully complete both the FAS Waste Management Training Programme (or equivalent agreed with the Agency) and associated on site assessment appraisal within twelve months of appointment.
- 2.1.4 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 In the event of changes to the details already on file, the licensee shall submit within three months 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 establish and maintain an EMS. Within eighteen 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. Following the agreement of the Agency, the licensee shall establish and maintain such a system. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

2.3.2 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: -

- a) The items specified to be contained in an Environmental Management Plan in the *Landfill Operational Practices Manual* published by the Agency;
- b) Methods by which the objectives and targets will be achieved and the identification of those responsible for achieving those objectives and targets; and
- c) 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.

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 establish and maintain a Communications Programme to inform and involve the local community and 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 or 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 at the facility boundary. 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.

3.4.2 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.

3.4.3 The licensee shall provide and maintain a CCTV monitoring system at the main entrance to the facility.

3.5 Facility Roads and Site Surfaces

3.5.1 Site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.

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 a Waste Quarantine Area shall be provided and maintained at the facility.

3.7.2 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.

3.7.3 Drainage from these areas shall be directed to the leachate collection system.

3.8 Weighbridge/Wheel Cleaning

3.8.1 The licensee shall provide and maintain a weighbridge and a wheelwash at the facility.

3.9 Waste Water Treatment Plant

3.9.1 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.

3.10 Tank and Drum Storage Areas

- 3.10.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein.
- 3.10.2 All tank and drum storage areas shall, as a minimum, be banded, 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 banded area; or
 - (b) 25% of the total volume of substance which could be stored within the banded area.
- 3.10.3 All drainage from banded areas shall be diverted for collection and safe disposal.
- 3.10.4 All inlets, outlets, vent pipes, valves and gauges must be within the banded area.
- 3.10.5 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 following its installation and prior to its use as a storage area. This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.

3.11 Landfill Lining

- 3.11.1 The landfill liner shall comprise:-
- a) A composite liner consisting of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to 1×10^{-9} m/s, (or equivalent to be agreed with the Agency) overlain by a 2mm thick high density polyethylene (HDPE) layer;
 - b) A geotextile protection layer placed over the HDPE layer;
 - c) A 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of 1×10^{-3} m/s, of pre-washed, uncrushed, granular, rounded stone (16-32mm grain size) incorporating leachate collection drains; and
 - d) The side walls shall be designed and constructed to achieve an equivalent protection.
- 3.11.2 The liner detailed design and its construction shall be in accordance with the guidelines provided in the Agency's *Landfill Manual, Landfill Site Design*.

3.12 Leachate Management Infrastructure

- 3.12.1 Leachate management infrastructure consisting of the following shall be provided and maintained at the facility:
- a) A leachate collection system for the collection of leachate from each cell at the facility;
 - b) A minimum of three leachate abstraction wells inside the bentonite cut-off wall (Cells 1-4);
 - c) A lagoon for the storage of raw leachate prior to treatment;
 - d) A lagoon for the storage of treated leachate;
 - e) A leachate treatment plant and associated works; and
 - f) An automated control system for the control of leachate flow and monitoring.

3.13 Landfill Gas Management

3.13.1 Landfill gas management infrastructure consisting of the following shall be provided and maintained at the facility:

- a) A system for the active collection and flaring of landfill gas;
- b) The flare shall be of an enclosed type design and the combustion air supply shall be controlled so as to achieve a minimum temperature of 1000°C and 0.3 seconds retention time at this temperature. Flare unit efficiency shall be tested annually;
- c) Within twelve months from the date of grant of this licence, the utilisation of landfill gas as an energy source shall be undertaken at the facility. The design and operation of the landfill gas utilisation plant shall be agreed in advance with the Agency; and
- d) The licensee shall ensure that sufficient flaring and/or utilisation capacity is provided for and maintained at the facility to deal with all the landfill gas generated at the facility.

3.13.2 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.

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

3.14 Surface Water Management

3.14.1 Effective surface water management infrastructure shall be provided and maintained at the facility during construction, operation, restoration and aftercare of the facility. As a minimum, the infrastructure shall consist of the following:-

- a) A system for the collection and diversion of run off from the facility such that contaminated water is prevented from discharging into surface water courses. This run-off shall be diverted to a stormwater settling and holding ponds; and
- b) Control measures shall be incorporated into the design of the stormwater settling and holding ponds such that, if necessary, its contents can be isolated and discharged to the leachate management infrastructure or tankered off-site.

3.15 Groundwater Management

3.15.1 Effective groundwater management infrastructure shall be provided and maintained at the facility during construction, operation, restoration and aftercare of the facility. As a minimum, the infrastructure shall be capable of the following:-

- a) The protection of the groundwater resources from pollution by the waste activities; and
- b) The protection of other infrastructure, such as the liner, from any adverse effects caused by the groundwater.

3.16 Civic Waste Facility

3.16.1 The licensee shall provide and maintain a Civic Waste Facility. All waste types shall be collected and stored in appropriate containers or in appropriately banded storage areas as necessary.

3.17 Compost facility

3.17.1 Appropriate infrastructure for the composting of green waste shall be established and maintained at the facility prior to any waste being composted. This infrastructure shall at a minimum comprise the following:-

- a) An impermeable concrete slab; and
- b) Collection and disposal of all run-off to the leachate collection system.

3.18 Monitoring Infrastructure

- a) 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. Within nine months from the date of grant of this licence, the licensee shall submit to the Agency for agreement an updated Restoration and Aftercare plan for the facility. This plan should include a schedule detailing the various stage of restoration, including timescales for the implementation of each phase and a drawing showing the final pre-settlement height of the waste prior to capping and after capping.

4.2. Final Capping

4.2.1. 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 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-4} m/s or an equivalent geosynthetic layer;
- d) Compacted mineral layer of a minimum 0.6m thickness with a permeability of less than 1×10^{-9} m/s or a geosynthetic material (e.g. GCL) or similar that provides equivalent protection; and
- e) Gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.

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

4.4. 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.

4.5. Soil Storage

4.5.1. All soils shall be stored to preserve the soil structure for future use.

4.5.2. All stockpiles shall be maintained so as to minimise dust generation.

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 Wastes shall be accepted at the facility only from holders of waste collection permits issued under the Waste Management (Collection) Permit Regulations 2001 and from licensed/permitted facilities. Copies of the waste collection permits, waste licences and waste permits must be maintained at the facility.
- 5.3 Waste Acceptance and Characterisation Procedures
- 5.3.1 The licensee shall maintain detailed written procedures at the facility for the acceptance and handling of all wastes. These procedures shall 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 (2003/22/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.
- 5.3.2 All wastes shall be checked at the working face to ensure that they comply with the requirements of this licence. 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 Working Face
- 5.4.1 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 2.5 metres in height after compaction, no more than 25 metres wide and no more than 50m long and have a slope no greater than 1 in 3.
- 5.4.2 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.
- 5.4.3 The working face, or faces, shall each day at the end of the day, be covered with suitable material.
- 5.5 Daily and Intermediate Cover
- 5.5.1 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.
- 5.5.2 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.
- 5.6 Landscaping

- 5.6.1 Within three months from the date of grant of this licence, an updated landscaping plan for the facility shall be submitted to the Agency for agreement.
- 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 construction and installation of the final cap, leachate and landfill gas collection systems unless otherwise agreed with 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 Filled cells shall be permanently capped within twelve months of the cells having been filled to the required level.
- 5.7.5 Scavenging shall not be permitted at the facility.
- 5.7.6 Gates shall be locked shut when the facility is unsupervised.
- 5.7.7 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.7.8 Fuels shall be stored only at appropriately banded locations on the facility.
- 5.7.9 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.7.10 No smoking shall be allowed on the facility other than in the facility office.
- 5.8 Waste Handling
- 5.8.1 Sludge
- 5.8.1.1 Industrial and sewage sludge shall be accepted at the facility only between the hours of 8.00am and 2.00pm Monday to Friday inclusive. All sludges shall be covered immediately with other waste.
- 5.8.2 Compost
- 5.8.2.1 In order not to be considered a waste, compost produced by the facility shall comply with the quality standards established in *Schedule F: Standards for Compost Quality*, of this licence. Analysis of the compost shall be in accordance with the requirements of that Schedule.
- 5.8.3 Wood Chippings
- 5.8.3.1 Wood chippings accepted at the facility for use as weekend cover shall be appropriately stored at the facility so as not to cause a nuisance.
- 5.9 Off-site Disposal and Recovery
- 5.9.1 Waste sent off-site for recovery or disposal shall be conveyed by a waste contractor agreed in advance by the Agency only. Any request for such agreement of a waste carrier shall include the following;
- (i) Copies of the waste carrier's permit(s) under the Waste Management (Collection Permit) Regulations 2001; and
- (ii) Details of the waste types it is proposed the carrier will transfer from the facility.
- 5.9.2 All waste transferred from the facility shall be transferred to an appropriate facility agreed by the Agency only. Any request for agreement of such a facility shall be forwarded to the Agency at least one month in advance of its proposed use and shall include the following;

- (i) A copy of the waste permit or waste licence where applicable;
- (ii) The proposed waste types and quantities; and
- (iii) Details of any limitations on waste types and quantities acceptable at the facility.

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 Civic Waste Facility

5.10.1 The Civic Waste Facility shall be used by private vehicles only. The facility shall not be used as a transfer station for disposal of waste by commercial waste disposal contractors or local authority waste collection vehicles.

5.10.2 All waste deposited in the Civic Waste Facility shall be either:-

- a) Into a skip;
- b) Into a receptacle for recovery; or
- c) In the case where inspection is required, into a designated inspection area.

5.10.3 The licensee shall assign and clearly label each container at the Civic Waste Facility to indicate their contents.

5.10.4 Waste to be delivered to the Civic Waste Facility shall be limited to household waste, glass, beverage cans, textiles, paper, cardboard, plastics, timber, metals, fluorescent tubes, waste oils, household hazardous waste, batteries and other waste types subject to the prior written agreement of the Agency.

5.10.5 Household waste delivered to the civic waste facility for disposal shall be deposited at the working face prior to the end of the working day.

5.11 Leachate Management

5.11.1 Leachate levels in the lined cells shall not exceed a level of 1.0m over the top of the liner at the base of the landfill.

5.11.2 The frequency of leachate removal/discharge from the leachate lagoons shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoons at all times.

5.11.3 Unless treated on the facility, leachate or contaminated water shall be disposed of by tankering off-site in fully enclosed road tankers to a Waste Water Treatment Plant to be agreed in advance with the Agency.

5.11.4 Recirculation of leachate or other contaminated water shall not be undertaken without the prior agreement of the Agency and, in any case, shall be undertaken only within cells which have been lined to the satisfaction of the Agency.

5.12 Maintenance

5.12.1 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.

- 5.12.2 All lagoon structures on the facility shall be certified fit for purpose every three years by an independent chartered engineer or equivalent.
- 5.12.3 The licensee shall maintain and clearly label and name all sampling and monitoring locations.
- 5.12.4 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 or to a skip.

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:-
- Methane, greater than or equal to 1.0% v/v; or
 - Carbon dioxide, greater than or equal to 1.5% v/v.
- 6.3.2. 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 :-
- In the case of landfill gas flare:
Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and
 - In the case of landfill gas combustion plant:
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.
- 6.3.3. Emission limits for emissions from landfill gas flare/combustion plant to atmosphere in this licence shall be interpreted in the following way.
- 6.3.3.1. Continuous monitoring
- No 24 hour mean value shall exceed the emission limit value;
 - 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value; and
 - No 30 minute mean value shall exceed twice the emission limit value.
- 6.3.3.2. Non-Continuous Monitoring
- For any parameter where, due to sampling/analytical limitations, a 30 minute sample is inappropriate, a suitable sampling period should be

employed and the value obtained therein shall not exceed the emission limit value;

- b) For all other parameters, no 30 minute mean value shall exceed the emission limit value; and
- c) For flow, no hourly or daily mean value shall exceed the emission limit value.

6.4. Groundwater

6.4.1 Within six months from 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 for groundwater monitoring boreholes Collins well (new), SA1 and GW5.

6.5. Emissions to Surface Water

6.5.1. The licensee shall submit a proposal to the Agency for its agreement on the flow control measures (at the leachate treatment facility and in the receiving water) to be implemented to satisfy the relevant conditions and schedules of this licence. This report shall contain as a minimum: the control measures, a leachate discharge flow control loop, the location and design of any sampling and measuring devices on the leachate discharge line and the White River to ensure accurate readings (including backup equipment i.e. staff gauge). No leachate shall be discharged from the facility until this report has been agreed with the Agency and the relevant infrastructure installed and commissioned.

6.5.2. Treated leachate shall be discharged from the facility only when:

- (a) It meets the emission limit values as outlined in *Schedule C: Emission Limits*, of this licence;
- (b) The flow in the receiving water is greater than 50 litres per second; and
- (c) There are greater than 40 dilutions in the receiving water.

When criteria (a), (b) or (c) are not satisfied any treated effluent shall be returned to the treated leachate storage lagoon.

6.5.3. No untreated leachate shall be discharged to the White River.

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

6.5.5. Within six months from the date of grant of this licence, the licensee shall determine normal levels for ammonia, BOD, conductivity, pH, TOC and temperature and trigger levels for TOC, pH, and conductivity for the water entering the stormwater holding and settling ponds. Within six months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement a proposal outlining the measures to be implemented when such trigger levels are reached. This proposal shall take into account the water quality in the receiving waters upgradient of the landfill. No stormwater shall be discharged to the White River when the quality exceeds these trigger levels.

6.5.6. All flow meters shall be calibrated, operated and maintained as necessary so they will accurately reflect both the effluent discharge and the receiving water flow.

6.5.7 The equipment, including backup equipment, specified in *Table D.6.5: Leachate Treatment Plant Control*, of this licence, shall be provided on-site. All treatment/abatement control and monitoring equipment shall be calibrated and maintained at all times when in use, in accordance with the manufacturer's instructions.

6.6. Trigger Level for PM₁₀

6.6.1. The trigger level for PM₁₀ from the facility measured at any location on the boundary of the facility is:-

- a) PM₁₀ greater than 50µg/m³ for a daily sample.

6.7. Emission limit values for emissions to waters in this licence shall be interpreted in the following way:-

- a) Continuous monitoring.

No flow value shall exceed the specified limit;

- b) Non-Continuous monitoring.

Eight out of ten consecutive results, calculated as daily mean concentration or mass emission values on the basis of flow proportional composite sampling shall not exceed 1.2 times the emission limit value; and

- c) No grab sample shall exceed 1.2 times the emission limit value.

6.8. Disposal of leachate (prior to commissioning of the leachate treatment plant or in the event of a breakdown in the operation of the plant).

6.8.1 Unless otherwise agreed in advance with the Agency, leachate stored in either leachate storage lagoon shall be periodically removed from the facility for treatment at either Castletroy WWTP or Newcastle West WWTP

6.8.2 No substance shall be present in emissions to sewer in such concentrations as would constitute a danger to 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 plant.

6.8.3 No emission to sewer shall take place which gives rise to any reaction within the sewer or to the liberation of by-products which may be of environmental significance. In particular the emission shall not contain any liquid matter (including petroleum spirits or organic solvents) or anything which is or may be liable to set or congeal at average sewer temperature or is capable of giving off any flammable or explosive gas or any acid, alkali or other substance in sufficient concentration to cause corrosion to sewer pipes, penstock and sewer fittings or the general integrity of the sewer.

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

7.3 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay.

7.4 Litter Control

- 7.4.1 Litter fencing shall be provided and maintained around the perimeter of the active tipping area.
- 7.4.2 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting 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 netting shall be undertaken within three working days.
- 7.4.3 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.
- 7.4.4 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.

7.5 Dust Control

- 7.5.1 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.

- 7.6 Prior to exiting the facility, all waste vehicles shall use the wheelwash.

7.7 Bird Control

- 7.7.1 Birds shall be prevented from gathering on and feeding at the facility by the use of birds of prey and/or other bird scaring techniques. The birds of prey and/or other techniques shall maintain their presence every day, from before dawn to after dark, until the waste activities cease and all the waste is capped to the written satisfaction of the Agency. The use of gas operated bird scaring devices is prohibited at the facility.

7.8 Noise/Disturbance

The licensee shall ensure the following:

- 7.8.1 That low sound level plant is used on site.
- 7.8.2 That all heavy machinery and mechanical plant used on site are fitted with acoustic panels and acoustic mufflers (exhaust silencers).

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. Unless otherwise specified by this licence, all environmental monitoring shall commence no later than two months after the date of grant of 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 The licensee shall provide and maintain a permanent gas monitoring system in the site office.
- 8.5.2 All landfill gas monitoring equipment, other than permanent monitoring systems within buildings, shall be certified as being intrinsically safe.
- 8.5.3 Within one month from the date of grant of this licence, the licensee shall submit a proposal to the Agency for agreement to monitor surface methane emissions from capped and uncapped areas. This proposal shall as a minimum contain the methodologies to be used and frequency of monitoring.
- 8.5.4 The licensee shall carry out a quarterly review of landfill gas control measures in place at the facility. This shall include an update on existing landfill gas control infrastructure (including operational status, number of vents connected and not connected to the landfill gas collection system, quantity of gas collected and flared/utilised, and estimated quantity of landfill gas being produced).
- 8.6 Groundwater Monitoring
- 8.6.1 Subject to the agreement of the well owners, all private wells within 500m upgradient and 1km downgradient of the facility shall be included in the monitoring programme set out in *Schedule D: Monitoring*, of this licence.
- 8.6.2 In the event that monitoring of private wells indicate that the facility is affecting the quantity and/or quality of the water supply this shall be treated as an incident. Within six months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement, proposals for the provision of any alternative supply of water to those affected.
- 8.7 Meteorological Monitoring
- 8.7.1 The licensee shall provide and maintain a meteorological station at the facility capable of monitoring the parameters listed in *Schedule D: Monitoring*, of this licence.
- 8.8 Topographical Survey
- 8.8.1 A topographical survey shall be carried out annually. The survey shall include a measurement of the remaining available void space. It shall be repeated annually thereafter. The survey shall be in accordance with any written instructions issued by the Agency.
- 8.9 Stability Assessment
- 8.9.1 A stability assessment of the side slopes of the facility shall be carried out annually.
- 8.10 Nuisance Monitoring
- 8.10.1 The licensee shall, on a daily basis, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours.
- 8.11 Odour monitoring

- 8.11.1 The licensee shall inspect the facility, its environs and odour sensitive locations daily for nuisances caused by odours.
- 8.11.2 As part of the odour control programme in place at the facility, the licensee shall carry out a monthly review of odour control measures in place at the facility. This shall include:
- (i) consideration of odour complaints received (including details and nature of the complaints, times and weather conditions);
 - (ii) details of any monitoring carried out (including to validate complaints and identify the source of the complaint and actions taken, where relevant); and
 - (iii) recommendations to deal with odour problems and implementation of these recommendations.

The licensee shall maintain these reports on site and forward them to the Agency on request.

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

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; and
 - f) Provide a proposal to the Agency for its agreement within one month of the incident occurring to:-
 - a) Identify and put in place measures to avoid reoccurrence of the incident; and
 - b) Identify and put in place any other appropriate remedial action.
- 9.2. 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. This shall include a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities. The Fire Authority shall be consulted by the licensee during this assessment.
- 9.3. The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.
- 9.4. Emergencies
- 9.4.1. 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.

- 9.4.2. 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.
- 9.4.3. 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.
- 9.4.4. 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.

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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; and
- 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, excluding those arriving at the Civic Waste Facility. The licensee shall record the following:-

- a) The date;
- b) The name of the carrier (including if appropriate, the waste carrier registration details);
- 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 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 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;
- 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; and
- f) Maintenance records in accordance with the manufacturer's recommendations for the landfill gas flare and utilisation plant (once installed) at the facility.

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 and/or contaminated stormwater 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/contaminated stormwater from the facility;
 - c) The volume of leachate/contaminated stormwater, 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/contaminated stormwater was transported; and
 - e) Any incidents or spillages of leachate/contaminated stormwater during its removal or transportation.
- 10.6 A written record shall be kept for each load of waste departing from the Civic Waste Facility. The following shall be recorded:-
- a) The name of the carrier;
 - b) The vehicle registration number;
 - c) The destination of the waste (facility name and waste licence/permit number as appropriate);
 - d) A description of the waste (if recovered or rejected waste, the specific nature of the waste);
 - e) The quantity of waste, recorded in tonnes;
 - f) The name of the person checking the load; and
 - g) The time and date of departure.
- 10.7 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 Regional Inspectorate in Cork;
 - 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 hrs 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-e), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident;
- c) In the event of any incident which relates to discharges to surface/sewer water, notify the Shannon Regional Fisheries Board as soon as practicable and in any case not later than 10.00 hrs on the following working day after such an incident; and
- 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 Waste Recovery Reports

Within six months of the date of grant of this licence, a report examining waste recovery options shall be submitted to the Agency for its agreement. 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, going to landfills as specified in the Landfill Directive;
- b) The treatment of waste as required by the Landfill Directive;
- c) The separation of recyclable materials from the waste;
- d) The recovery of Construction and Demolition Waste;
- e) Inert waste to be used for cover/restoration material at the facility; and
- f) Proposals regarding the utilisation of heat/energy from the gas utilisation plant.

11.4 Reports relating to Facility Operations

11.4.1. European Pollution Emission Register (EPER) reporting shall be in accordance with any relevant guidance issued by the Agency.

11.5 Monitoring Locations

11.5.1 Within six months of the date of grant of this licence, the licensee shall submit to the Agency an appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. The drawing(s) shall include the reference code of each monitoring point.

11.6 Annual Environmental Report

- 11.6.1 The licensee shall submit to the Agency for its agreement by January 31st 2004, and within one month of the end of each year thereafter, an Annual Environmental Report (AER).
- 11.6.2 The AER shall include as a minimum the information specified in *Schedule G: Content of Annual Environmental Report* of this licence and shall be prepared in accordance with any relevant written guidance issued by the Agency.

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 €35,681.68 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 2004 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 2003, the licensee shall pay a pro rata amount from the date of this licence to 31st December. 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 Within six months the licensee shall arrange for a risk assessment of the facility to be carried out. The risk assessment shall have particular regard to any accidents, emergencies, or other incidents, which might occur at the facility and their effect on the environment. The risk assessment shall include a comprehensive and fully costed Environmental Liabilities Risk Assessment for the facility including the cost of making such Financial Provision as is required for the purposes of Section 53(1) of the Waste Management Act 1996. The financial provision shall include the costs entered into or incurred in the carrying on of the activities to which this licence relates or will relate including the closure, restoration, remediation and aftercare of the facility.
- 12.2.2 The licensee shall, within nine months establish and maintain a fund, or provide a written guarantee for the costs determined under Condition 12.2.1. The type of fund established and means of its release/recovery shall be agreed by the Agency prior to its establishment.
- 12.2.3 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.
- 12.2.4 The licensee shall provide a statement in writing to the Agency on an annual basis as part of the AER in respect of the determination of charges for the disposal of waste. The statement shall be in accordance with the requirements of S.I. 337 of 2002 European Communities (Amendment of Waste Management (Licensing) Regulations, 2000) Regulation, 2002.

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.

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

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SCHEDULE A : Waste Acceptance

A.1 Waste Acceptance

Table A.1 Waste Categories and Quantities for Disposal/Recovery at the facility.

Waste Type	Maximum (tonnes per annum) ^{Note 1}
Household	72,000
Commercial	39,000
Sewage sludge	4,770
Industrial non-hazardous sludge	1,200
Industrial non-hazardous solids ^{Note 2}	11,000
Water treatment sludge	2,030
TOTAL FOR DISPOSAL	130,000
Green waste for composting	Note 3
Wood chippings	2,000
Automobile shredder residue ^{Note 4}	20,000
Soil/stones ^{Note 5}	50,000
Wastes accepted for storage at the civic waste facility prior to recycling, reuse or reclamation	5,000
TOTAL FOR RECOVERY	57,000

Note 1: The quantities of the individual waste types may be adjusted with the prior agreement of the Agency only subject to the total waste quantity remaining the same.

Note 2: The once-off disposal of 3,000 tonnes of 'calcium phosphate/sand mixture or bonedust' shall be included in this waste type subject to the material being tested and proven to be non-hazardous to the satisfaction of the Agency.

Note 3: Limited to 1000m³ of compost and waste at any one time.

Note 4: This may be used as weekend cover subject to the material being tested and proven to be non-hazardous to the satisfaction of the Agency.

Note 5: These may be accepted for recovery for use as cover in site construction works and landfill restoration.

SCHEDULE B : Specified Engineering Works

Specified Engineering Works

Development of the facility including preparatory works and lining.

Final capping.

Installation of Landfill Gas Management Infrastructure.

Installation of Leachate Management Infrastructure.

Installation of Surface Water Management Infrastructure.

Any other works notified in writing by the Agency.

SCHEDULE C : Emission Limits

C.1 Noise Emissions: (Measured at any noise sensitive location).

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

C.2 Landfill Gas Concentration Limits: (Measured in any building on or adjacent to the facility).

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

C.3 Dust Deposition Limits: (Measured at the monitoring points indicated in *Table D.1.1*).

Level (mg/m^2 /day) ^{Note 1}
350

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

C.4 Surface Water Discharge Limits: Measured at the outlet from the stormwater settling ponds.

Level (Suspended Solids mg/l)
35

C.5 Emission Limit Values for Landfill Flare/Utilisation Plant

Emission Point Reference numbers: Outlet of enclosed flare and of utilisation plant (when installed).

Volume to be emitted: 3000 m^3 /hr

Minimum discharge height: 5m (unless results from modelling suggests otherwise).

Parameter	Flare (enclosed) Emission Limit Value ^{Note 1}	Utilisation Plant Emission Limit Value ^{Note 1}
Nitrogen oxides (NO_x)	150 mg/m^3	500 mg/m^3
CO	50 mg/m^3	1400 mg/m^3
Particulates	Not applicable	130 mg/m^3
Total Volatile Organic Compounds (VOCs) as carbon	10 mg/m^3	1000 mg/m^3
Total non-methane VOCs	Not applicable	75 mg/m^3
Hydrogen Chloride	50 mg/m^3 (at mass flows > 0.3 kg/h)	50 mg/m^3 (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m^3 (at mass flows > 0.05 kg/h)	5 mg/m^3 (at mass flows > 0.05 kg/h)

Note 1: Dry gas referenced to 5% oxygen by volume for utilisation plants and 3% oxygen by volume for flares.

C.6 Emission Limits for Treated Leachate Discharged to Surface Water

Emission Point Reference No.: Treated leachate discharge point
 Volume to be emitted: Maximum in any one day: 120m³/day
 Maximum rate per second: 1.38 l/s
 Time of emission: Minimum river flow in White River of 50 l/s and must be greater than 40 dilutions of effluent at all times.

Parameter	Limit
(all units in mg/l except pH)	
pH	6-8
BOD	25
Suspended Solids	35
Total P (as P)	2
Total Ammonia (as N)	3

C.7 Emission Limits for Leachate Tankered to Wastewater Treatment Plant

Volume to be emitted: Maximum in any one day: 120 m³ /day (This shall be a maximum of 60m³/day to Castletroy WWTP and 60m³/day to Newcastle West WWTP, unless otherwise agreed in advance by both the Sanitary Authority and the Agency).

Parameter	Emission Limit Value
	Grab Sample (mg/l)
pH	6-9
BOD	300
COD	750
Suspended solids	400
Total Ammonia (as N)	100

SCHEDULE D : Monitoring

D.1 Monitoring Locations

Monitoring locations shall be those as set out in Table D.1.1 and as shown in Drawing DG0002 Rev. A02 entitled "Monitoring Points" received 04/02/03 as part of response to the Agency's Article 14 notice.

Table D.1.1 Monitoring Locations

Landfill Gas within Waste and Boundary Locations	Landfill Gas Flare/Utilisation Plant	Dust Deposition /PM ₁₀	Odour	Noise	Surface Water	Ground Water
Stations	Stations	Stations	Stations	Stations	Stations	Stations
1 point per cell.	Inlet/outlet of enclosed flare	D1-D4 (dust deposition)	Four odour sensitive locations to be agreed in advance with the Agency.	M1 – M11	S1, S2, S6, S7, S8, SW1, SW2 and SW3	SA1, SA2, GW5, SA5, BH2, BH10, BH13, Collins Well (new)
Perimeter locations C1-C15	Inlet/outlet of utilisation plant once installed	D1, D2 and D4 (PM ₁₀)	Location adjacent to facility office.		Inlet and Outlet (SW4) of surface water retention pond	Private wells
Site office.					A, B, C, D. ^{Note 1}	
Leachate Monitoring Locations						
Treated Leachate Discharge (see Table D.6.4)		Raw leachate storage lagoon (see Table D.6.1)		Level monitoring only – two locations in each of cells 5 to 13 & three locations within bentonite cut-off wall (cells 1-4).		

Note 1: Annual biological monitoring locations on the White River.

D.2 Landfill Gas

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

Parameter	Monitoring Frequency		Analysis Method ^{Note 1} /Technique ^{Note 2}
	Gas Boreholes/Vents/Wells	Site Office	
Methane (CH ₄) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO ₂) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Oxygen(O ₂) % v/v	Monthly	Weekly	Electrochemical cell
Atmospheric Pressure	Monthly	Weekly	Standard
Temperature	Monthly	Weekly	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/Odour Monitoring

Table D.3.1 Dust Monitoring Frequency and Technique

Parameter (mg/m ² /day)	Monitoring Frequency	Analysis Method/Technique
Dust	Three times a year ^{Note 1}	Standard Method ^{Note 2}
PM ₁₀	Annually	Note 3
Odour/Trace constituents of landfill gas	Quarterly	Note 4.

Note 1: Twice during the period May to September.

Note 2: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). Any modifications to eliminate interference due to algae growth in the gauge should be reported to the Agency.

Note 3: As described in prEN12341 or an equivalent agreed with the Agency.

Note 4: Analysis for organics, mercaptans, organic acids and hydrogen sulphide by standard methods.

D.4 Noise

Table D.4.1 Noise Monitoring Frequency and Technique

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

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

D.5 Meteorological Monitoring

Table D.5.1 Meteorological Monitoring: Data to be obtained from the on-site meteorological station.

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Force and Direction	Daily	Standard
Evaporation	Daily	Standard
Evapotranspiration ^{Note 1}	Daily	Standard
Humidity	Daily	Standard
Atmospheric Pressure ^{Note 1}	Daily	Standard

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

D.6 Surface Water, Groundwater and Leachate

Table D.6.1 Water and Leachate - Parameters / Frequency

Parameter ^{Note 1}	Surface Water ^{Note 2}	Groundwater	Leachate ^{Note 3} (raw leachate lagoon)
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
Visual Inspection/Odour ^{Note 4}	Weekly	Quarterly ^{Note 5}	Quarterly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Weekly
Ammoniacal Nitrogen	Quarterly	Quarterly ^{Note 5}	Annually
BOD	Quarterly	Not Applicable	Annually
COD	Quarterly	Not Applicable	Annually
Chloride	Quarterly	Quarterly ^{Note 5}	Annually
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Quarterly ^{Note 5}	Annually
pH	Quarterly	Quarterly ^{Note 5}	Annually
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	Quarterly ^{Note 5}	Quarterly
Metals / non metals ^{Note 6}	Annually	Annually ^{Note 5}	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
List I/II organic substances ^{Note 7}	Once off ^{Note 8}	Annually ^{Note 8}	Once off ^{Note 8}
Mercury	Annually	Annually	Annually
Sulphate	Annually	Annually	Annually
Total Alkalinity	Annually	Annually	Not applicable
Total P/Orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Annually ^{Note 5}	Annually
Total Organic Carbon	Not Applicable	Quarterly ^{Note 5}	Not Applicable
Residue on evaporation	Not Applicable	Annually ^{Note 5}	Not Applicable
Biological Assessment	Annually ^{Note 9}	Not Applicable	Not Applicable
Total & Faecal Coliforms	Not applicable	Annually ^{Note 5}	Not applicable

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

Note 2: See Tables D.6.2 and D.6.3 for flow measurement of the White River and monitoring of stormwater settling ponds.

Note 3: See Table D.6.4 for monitoring of treated leachate discharge.

Note 4: Where there is evident gross contamination of leachate, additional samples should be analysed.

Note 5: All private wells in accordance with Condition 8.6 to be analysed on an annual basis for these parameters only. Iron and manganese should be included as part of the metal analysis. If there is evidence of bacterial contamination, the analysis at upgradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.

Note 6: 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 7: 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).

Note 8: Annually for groundwater (SA1, GW5 and Collins Well (new)) and treated leachate discharge. Once off for surface water (S1 and S6) and leachate (inlet to raw leachate lagoon).

Note 9: Appropriate biological methods (such as EPA Q-Rating System) to be used for the assessment of rivers and streams.

Table D.6.2 Flow measurements of surface water

Parameter	Location	Monitoring Frequency	Analysis Method/Technique
Flow measurements	Weir installed on White River	Continuous	Standard method ^{Note 1,2}

Note 1: To be agreed in advance with the Agency.

Note 2: Back up equipment to be held on-site e.g. staff gauge.

Table D.6.3 Monitoring of Stormwater settling ponds

Location / Parameter	Monitoring Frequency	Analysis Method/Technique ^{Note 1}
Inlet to Stormwater pond		
Flow	Continuous	Flow meter / recorder
TOC	Continuous	TOC meter / recorder
pH	Continuous	pH meter / recorder
Conductivity	Continuous	Conductivity Meter / recorder
Suspended Solids	Weekly	Gravimetric
Ammonia	Weekly	Standard Methods
SW4 (outlet from stormwater pond)		
Flow	Continuous	Flow meter / recorder
Visual inspection	Daily	Not applicable
Suspended Solids	Weekly	Gravimetric

Note 1: Or an equivalent method acceptable to the Agency.

Table D.6.4 Monitoring of Treated Leachate Discharge - Parameters /Frequency

Parameter	Monitoring Frequency	Analysis Method/Technique ^{Note 1}
Treated Effluent Flow	Continuous	On-line flow meter with recorder
pH	Continuous	pH electrode/meter and recorder
Temperature	Daily	Standard Methods
Chemical Oxygen Demand	Weekly ^{Note 2,3}	Standard Methods
CBOD	Weekly ^{Note 2,3}	Standard Methods ^{Note 4}
Suspended Solids	Weekly ^{Note 2,3}	Standard Methods
Total Ammonia (as N)	Weekly ^{Note 2,3}	Standard Methods
Nitrite /TON (as N)	Monthly ^{Note 2,3}	Standard Methods
Total Phosphorus	Monthly ^{Note 2,3}	Standard Methods
Toxicity ^{Note 5}	Biannual	To be agreed with the Agency
List I/II organic substances	Annually	Note 6

Note 1: Or an equivalent method acceptable to the Agency

Note 2: Samples to be collected on a flow proportional composite sample basis

Note 3: The frequency, methods and scope of monitoring, sampling and analysis may be amended following evaluation of the test results.

Note 4: Analysis for Carbonaceous BOD shall include the addition of a nitrification inhibitor.

Note 5: The toxicity of the undiluted treated leachate to *Daphnia magna* and *Lemna minor* shall be determined unless otherwise agreed with the Agency.

Note 6: 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).

Table D.6.5 Leachate Treatment Plant Control ^{Note 1}

Control parameter	Equipment	Equipment maintenance	Backup Equipment
Extended Aeration Lagoon			
Effluent Transfer	Submersible pumps	Daily visual check	Spares held on site
Dissolved Oxygen	Aerators, sub-surface mixers	Daily visual check	Spares to be held on site
Dissolved Oxygen	DO meter	Daily visual check	Portable DO meter
Clarifier			
Return sludge	Sludge return pumps	Daily visual check	Stand-by pumps
Effluent Transfer	Gravity flow /forward feed pumps	Daily visual check	Spares held on site
Settling Lagoon, Sand Bed Filter & Peat Bed Filter			
Flow	Distribution network	Daily visual check	Spares held on site

Note 1: The parameters and equipment used for the control of the leachate treatment plant may be amended following evaluation of results.

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D.7 Landfill Gas Enclosed Flare/Utilisation Plant

Location: Enclosed flare and utilisation plant (note exact location of utilisation plant to be agreed with the Agency in advance).

Table D.7.1 Landfill Gas Enclosed Flare/Utilisation Plant Parameters and Monitoring Frequency

Parameter	Flare (enclosed)	Utilisation Plant	Analysis Method ^{Note 1} /Technique ^{Note 2}
	Monitoring Frequency	Monitoring Frequency	
Inlet			
Methane (CH ₄) % v/v	Continuous	Weekly	Infrared analyser/flame ionisation detector/thermal conductivity
Carbon dioxide (CO ₂)% v/v	Continuous	Weekly	Infrared analyser/ thermal conductivity
Oxygen (O ₂) % v/v	Continuous	Weekly	Electrochemical/thermal conductivity
Total Sulphur	Annually	Annually	Ion chromatography
Total Chlorine	Annually	Annually	Ion chromatography
Total Fluorine	Annually	Annually	Ion Selective Electrode
Process Parameters			
Combustion Temperature	Continuous	Quarterly	Temperature Probe/datalogger
Outlet			
CO	Continuous	Continuous ^{Note 3}	Flue gas analyser/datalogger
NO _x	Annually	Continuous ^{Note 3}	Flue gas analyser
SO ₂	Annually	Annually	Flue gas analyser
Total VOCs as carbon	Annually	Annually	Flame ionisation
Total non-methane VOCs	Not applicable	Annually	Adsorption-thermal desorption
Particulates	Not applicable	Annually	Isokinetic/Gravimetric
Hydrochloric acid	Annually	Annually	Impinger / Ion Chromatography
Hydrogen fluoride	Annually	Annually	Impinger / Ion Chromatography

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

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

Note 3: Continuous monitoring of carbon monoxide and nitrogen oxides is required. Monitoring of one of these parameters may be reduced to quarterly with the prior agreement of the Agency.

D.8 Ecological Monitoring

Table D.8.1 Ecological Monitoring

Parameter	Monitoring Frequency	Method/
Ecological Monitoring	Annual	Note 1

Note 1: Ecological monitoring of the site and adjoining habitats to be undertaken. This shall pay particular attention to species listed in Volume 3 of

the EIS which are protected under the Wildlife Act 1976, the EU habitats Directive and the EU Birds Directive.

D.9 Monitoring of Composting Process

Table D.9.1 Monitoring of Composting Process

Parameter	Monitoring Frequency ^{Note 1}	Analysis Method/Technique
Moisture Content	Weekly	Standard
Temperature (min/max.)	Daily	Standard
Oxygen	Daily	Standard

Note 1: Unless otherwise agreed with the Agency.

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SCHEDULE E : Recording and Reporting to the Agency

Report	Reporting Frequency <small>Note 1</small>	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 st January 2004 and one month after the end of each year thereafter.
Record of incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	Six months from the date of grant of licence and one month after end of the three year period being reported on.
Specified Engineering Works reports	As they arise	Prior to the works commencing.
Monitoring of landfill gas	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Surface Water Quality/Groundwater/Leachate	Quarterly	Ten days after end of the quarter being reported on.
Meteorological Monitoring	Annually	One month after end of the year being reported on.
Dust Monitoring	Three times a year	Ten days after the period being reported on
PM₁₀ Monitoring	Annually	One month after end of the year being reported on.
Biological Monitoring	Annually	One month after end of the year being reported on.
Ecological Monitoring	Annually	One month after end of the year being reported on.
Noise Monitoring	Annually	One month after end of the year being reported on.
Odour Monitoring	Quarterly	Ten days after end of the quarter being reported on.
Slope stability monitoring	Annually	One month after end of the year being reported on.
Topographical monitoring	Annually	One month after end of the year being reported on.
Any other monitoring	As they occur	Within ten days of obtaining results.

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

SCHEDULE F : Standards for Compost Quality

The following criteria are deemed a quality standard for the use of compost as a soil improver and should not be deemed as criteria for fertiliser. In addition N, P, K, NH₄-N, NO₃-N, pH and dry matter content should also be measured.

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

1. Maturity

Compost shall be deemed to be mature if it meets two of the following requirements:-

- C/N ratio ≤ 25 ;
- Oxygen uptake rate ≤ 150 mg O₂/kg volatile solids per hour;
- Germination of cress (*Lepidium sativum*) seeds and of radish (*Raphanus sativus*) seeds in compost must be greater than 90 percent of the germination rate of the control sample, and the growth rate of plants grown in a mixture of compost and soil must not differ more than 50 percent in comparison with the control sample; and
- Elimination of the following test organisms (used to evaluate composting system efficiency in removing plant pathogens and weed seeds during the composting process): Plasmodiophora brassicae, tobacco-mosaic-virus (TMV) and tomato seeds.

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

2. Foreign Matter

Compost must not contain any sharp foreign matter measuring over a 2 mm dimension that may cause damage or injury to humans, animals and plants during or resulting from its intended use.

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

3. Trace Elements

Maximum Trace Element Concentration Limits for Compost ^{Note 2}

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

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

Note 2: The above alone should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.

4. Pathogens

Pathogenic organism content must not exceed the following limits:-

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

5. Monitoring

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

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SCHEDULE G : 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.

Area occupied by waste.

Methods of deposition of waste.

Summary report on emissions.

Summary of results and interpretation of environmental monitoring.

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.

Meteorological report.

Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year's report.

Schedule of Environmental Objectives and Targets for the forthcoming year.

Full title and a written summary of any procedures developed by the licensee in the year which relates to the facility operation.

Tank, pipeline and bund testing and inspection report.

Reported incidents and Complaints summaries.

Review of Nuisance Controls.

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

Report on training of staff.

Any other items specified by the Agency.

Sealed by the seal of the Agency on this 25th day of September 2003.

PRESENT when the seal of the Agency
was affixed hereto:

Padraic Larkin **Director/Authorised Person**

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B.7 Fees

Provide details of the fee included with the application as per Part I of the Third Schedule of the Waste Management (Licensing) Regulations, S.I. No. 133 of 1997, as amended or Waste Management (Licensing) Regulations (S.I No. 185 of 2000, whichever is relevant.

Fee (in £)	Waste Activity
€16,510 (£13,000)	The disposal of waste at a landfill facility where the annual intake is likely to exceed 100,000 tonnes
€3,810 (£3,000)	The recovery of waste

B.8 Management Plans

B.8.1: Any relevant Air Quality Management Plans, Water Quality Management Plans, Waste Plans, or Hazardous Waste Plans should be referred to and included in **Attachment B.8.1**

Title of Management Plan	Year
Limerick/Clare/Kerry Waste Management Plan	2004

B.8.2: Provide evidence to show that the landfill project is in line with the relevant waste management plan or plans.

Attachment B.8.2

See section 1.5 and 1.6 of Volume 2 of the EIS for details of the Limerick/Clare/Kerry Waste Management Plan and how the landfill is in line with the policy set out therein.

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B.9 Type of Activity

B.9 (a) Specify the relevant activities in the Third Schedule or Fourth Schedule to the Waste Management Act 1996 to which the application relates (check the relevant boxes and mark the principal activity with a 'P'). **Attachment B.9** should identify the principal activity and include a description of each of the other activities specified, as they pertain to the activities applied for in this application.

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TABLE B.9 (a) THIRD AND FOURTH SCHEDULES OF THE WASTE MANAGEMENT ACT 1996

THIRD SCHEDULE Waste Disposal Activities		FOURTH SCHEDULE Waste Recovery Activities	
1. Deposit on, in or under land (including landfill).	X	1. Solvent reclamation or regeneration.	
2. Land treatment, including biodegradation of liquid or sludge discards in soils.		2. Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).	X
3. Deep injection of the soil, including injection of pumpable discards into wells, salt domes or naturally occurring repositories.		3. Recycling or reclamation of metals and metal compounds.	X
4. Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.	X	4. Recycling or reclamation of other inorganic materials.	X
5. Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.	P	5. Regeneration of acids or bases.	
6. Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule.	X	6. Recovery of components used for pollution abatement.	
7. Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule (including evaporation, drying and calcination).	X	7. Recovery of components from catalysts.	
8. Incineration on land or at sea.		8. Oil re-refining or other re-uses of oil.	
9. Permanent storage, including emplacement of containers in a mine.		9. Use of any waste principally as a fuel or other means to generate energy.	X
10. Release of waste into a water body (including a seabed insertion).		10. The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.	X
11. Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.	X	11. Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.	X
12. Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.		12. Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.	X
13. Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.	X	13. Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.	X



Attachment B.9

Class or Classes of Activity

The **principal activity** is Class 5 of the Third Schedule as given below:

Third Schedule (Waste Disposal Activities)

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

This activity is limited to waste disposed off at the landfill prior to 1997 which was placed into unlined cells in the exhausted sand and gravel pit.

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

This activity entails the storage of leachate in the leachate storage lagoon prior to treatment.

Class 5: Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment:

This activity is limited to the disposal of waste and sludge from municipal water treatment and non-hazardous industrial sludge in lined cells.

Class 6: Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule

This activity entails the treatment of leachate at the facility.

Class 7: Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule (including evaporation, drying and calcinations.

This activity involves the treatment of leachate by settlement, filtration or by chemical precipitation or other physico-chemical means at the leachate treatment plant.

Class 11: Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule

This activity involves the mixing of sludge with other wastes during the landfilling process to ensure that the waste body is as homogenous as possible.

Class 13: Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

This activity involves the storage of waste prior to its disposal.

Fourth Schedule (Waste Recovery Activities)

Class 2: Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).

This activity involves the composting of green waste accepted subject to a limit of 1000m³ of compost and waste at any one time at the facility, the storage of waste oils at the civic waste facility and the use of wood chippings as weekend cover only.

Class 3: Recycling or reclamation of metals and metal compounds

This activity involves the storage of metal and metal compounds at the facility.

Class 4: Recycling or reclamation of other inorganic materials

This activity involves the storage of inorganic materials at the facility prior to reuse or recycling on-site or off-site.

Class 9: Use of any waste principally as a fuel or other means to generate energy

This activity involves the provision of a landfill gas recovery and utilisation facility.

Class 10: The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.

This activity entails the use of organic waste which has been fully composted as intermediate cover and in the closure/restoration stage of the landfill.

Class 11: Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule

This activity concerns the use of composted waste as landfill cover material.

Class 12: Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule

This activity involves the possible exchange of waste being delivered to the facility in exchange for processed waste subject to the agreement of the Agency.

Class 13: Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

This activity is limited to the temporary storage of waste prior to inspection, recycling, recovery and/or reuse at the facility or elsewhere.

**Attachment B.9 (A) Quantity and Nature of the Waste**

The waste categories and quantities of waste to be accepted at the Landfill site for disposal/recovery, according to Schedule A of the EPA Waste Licence 17-2 is given in the table below.

Waste Type	Maximum Tonnes Per Annum for Disposal
Household	72,000
Commercial	39,000
Sewage Sludge	4,770
Industrial Non-Hazardous Sludge	1,200
Industrial Non-Hazardous Solids	11,000
Water Treatment Sludge	2,030
Total for Disposal	130,000
Green Waste for Composting ^{Note 1}	
Wood Chippings	2,000
Automobile shredder residue ^{Note 2}	20,000*
Soil and Stones ^{Note 3}	50,000
Wastes accepted for storage at the civic waste facility prior to recycling, reuse or reclamation	5,000
Total for Recovery	57,000

Note 1: Limited to 1000m³ of compost and green waste at any one time.

Note 2: This may be used as weekend cover subject to the material being tested and proven to be non-hazardous to the satisfaction of the Agency.

Note 3: These may be accepted for recovery for use as cover in site construction works and landfill restoration.

B.9 (b) Provide an estimation of the quantity of waste likely to be accepted in relation to each class of activity applied for. This information should be included in Table B.9(b). Any additional information can be included in Attachment B.9 (b).

TABLE B.9 (B) QUANTITIES OF WASTE IN RELATION TO EACH CLASS OF ACTIVITY APPLIED FOR

Waste Management Act, 1996 3 rd Schedule (Disposal) Activities			Waste Management Act, 1996 4th Schedule (Recovery) Activities		
Class of Activity Applied For	Waste Type including EWC code	Quantity (tpa)	Class of Activity Applied For	Waste Type including EWC code	Quantity (tpa)
Class 1	Landfill waste disposed off prior to 1997		Class 2	Wood Chippings	2,000
Class 4	Leachate 19 07 03		Class 3	Automobile shredder residue 16 01 99	20,000* refer to above table
Class 5	Sewage Sludge 19 08 05	4,770	Class 4	Soil / stones 17 05 04	50,000
	Household, Waste 20 03 01	72,000			
	Commercial Waste 20 03 01	39,000	Class 9	Landfill gas recovery and utilisation	
	Industrial Non-Hazardous Solids	11,000			
	Industrial Non-Hazardous Sludge 19 08 12 19 08 14	1,200			
Water Treatment Sludge 19 08 12	2,030	Class 10	Use of composted material		
Class 6	Leachate 19 07 03		Class 11	Composted waste used as landfill cover	
Class 7	Leachate 19 07 03		Class 12	Possibility of exchanging waste	
			Class 13	Waste accepted for storage prior to recycling, reuse or reclamation	5,000
Class 11	Sewage Sludge 19 08 05				
Class 13	Storage of waste prior to disposal.				

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FACILITY DESIGN

Note that plant and infrastructure on site should be capable of dealing with 100% duty and 50% standby capacity of the maximum expected daily tonnage throughput. Maximum tonnage requirements should reflect any daily, weekly and seasonal variation in tonnages. Reference should be made to landfill manual on 'Landfill Site Design' when completing this section.

D.4 Infrastructure

Complete the following table detailing the site infrastructure. Attachment D.1 should contain the appropriate documentation. Information provided should follow the sequence, and use the headings, established in Table D.1. Additional advice on completing this section is provided in the *Guidance Note*.

TABLE D.1. INFRASTRUCTURE

Indicate whether the following infrastructure has been specified and provide the appropriate details in the Comments column.

		y/n	Comments
D.1.a	Site security arrangements including gates and fencing	Y	See attachment D.1.a
D.1.b	Designs for site roads	Y	See attachment D.1.b
D.1.c	Design of hardstanding areas	Y	See attachment D.1.c
D.1.d	Plant	Y	See attachment D.1.d
D.1.e	Wheel-wash	Y	See attachment D.1.e
D.1.f	Laboratory facilities	Y	See attachment D.1.f
D.1.g	Design and location of fuel storage areas	Y	See attachment D.1.g
D.1.h	Waste quarantine areas	Y	See attachment D.1.h
D.1.i	Waste inspection areas	Y	See attachment D.1.i
D.1.j	Traffic control	Y	See attachment D.1.j
D.1.k	Sewerage and surface water drainage infrastructure	Y	See attachment D.1.k
D.1.l	All other services	Y	See attachment D.1.l
D.1.m	Plant sheds, garages and equipment compound	Y	See attachment D.1.m
D.1.n	Site accommodation	Y	See attachment D.1.n
D.1.o	A fire control system, including water supply	Y	See attachment D.1.o
D.1.p	Civic amenity facilities	Y	See attachment D.1.p
D.1.q	Any other waste recovery infrastructure	N	See attachment D.1.q
D.1.r	Composting Infrastructure	Y	See attachment D.1.r
D.1.s	Construction and Demolition waste Infrastructure	N	See attachment D.1.s
D.1.t	Any other infrastructure	N	See attachment D.1.t



TABLE B.10.2 TOTAL QUANTITIES AND NATURE OF WASTE

	Non-hazardous waste (tonnes)	Hazardous waste (tonnes)	Total (tonnes)
Already deposited	821,133.69 (estimate from start of filling in 1990 to end of 2003)		830,000
To be deposited prior to closure	2,010,000		2,110,000

Maximum Annual Tonnage

The maximum annual tonnage of waste to be accepted at the site should be indicated and the year to which the quantity relates indicated.

Maximum Annual Tonnage (tpa)	120,000
Year	2006 - 2010

B.10 Major Industrial Hazard Regulations

State whether the activity consists of, comprises, or is for the purposes of, an industrial activity or isolated storage to which Regulations 12 to 18 of the European Communities (Major Accident Hazards of Certain Industrial Activities) Regulations, 1986 (SI No. 292 of 1986), as amended by the European Communities (Major Accident Hazards of Certain Industrial Activities) (Amendment) Regulations, 1989 (SI No. 194 of 1989) and the European Communities (Major Accident Hazards of Certain Industrial Activities) (Amendment) Regulations, 1992 (SI No. 21 of 1992) apply.

Regulations Apply	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
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If yes, Attachment B.12 should include the relevant details.

B.11 Type of Facility

State which of the following is relevant to the current application.

(a) landfill for hazardous waste	<input type="checkbox"/>
(b) landfill for non-hazardous waste	<input checked="" type="checkbox"/>
(c) landfill for inert waste	<input type="checkbox"/>

C. EXISTING ENVIRONMENT, IMPACTS AND MITIGATION

In the following sections i.e. C.1, C.2 etc. in each case subsection (a) refers to the **existing environment**. Detailed information is required to enable the Agency to assess the current state of the environment.

This section requires the provision of information on the ambient environmental conditions at the site prior to the commencement of waste management activities or prior to an application for a licence being made for existing sites that do not have information on ambient conditions prior to commencement of waste management activities.

Where development is proposed to be carried out, being development which is of a class for the time being specified under article 24 of the Environmental Impact Assessment Regulations, the information on the state of the existing environment should be addressed in the EIS. In such cases, it will suffice for the purposes of this section to provide adequate cross-references to the relevant sections in the EIS.

Investigation, monitoring and testing results should be provided on the Standard Forms presented in Annex 1, where available, and included in the relevant attachments.

In the following sections i.e. C.1, C.2 etc. in each case subsection (b) refers to **emissions** to the environment. All potential emissions, both existing and proposed should be addressed. **Information should also be provided to show that any emissions from the recovery or disposal activity in question will not result in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value.**

In the following section i.e. C.1, C.2 etc. in each case subsection (c) refers to **environmental impacts and mitigation measures**. Information on the potential environmental impacts of the development and the proposed mitigation measures are required. For new developments, predictions need to be made of the potential impacts. For existing landfills, data obtained from investigations and environmental monitoring should be used to assess the current level of emissions from the site and their impacts. Additional advice on completing this section is provided in the *Guidance Note*. Reference should be made to impacts, emissions and mitigation measures associated with construction and development activities.

Where development is proposed to be carried out, being development which is of a class for the time being specified under article 24 of the Environmental Impact Assessment Regulations, the environmental impacts and mitigation measures should be addressed in the EIS. In such cases, it will suffice for the purposes of this section to provide adequate cross-references to the relevant sections in the EIS.

C.1 Location

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment C.1

Gortadroma landfill is located 12km north of Newcastlewest, 9km south of Foynes and 54km from Limerick City. The existing site covers an area of 35 hectares (86 acres) and lies in a rural setting. The proposed extension to the landfill will cover an area of approximately 41 hectares and comprises two distinct areas:

- Buffer Zone consisting of landscape/ spoil areas – 22 hectares and
- Waste disposal area - 19 hectares

Landfill operations were commenced by Limerick County Council at Gortadroma Landfill in September 1990 on a site which had previously been used as a sand and gravel pit. The site is bound to the north, west and east by farmland and to the south by a public road.

A minor tributary of the White River, which was realigned during the construction of cells 11,12,13, runs along the eastern boundary of the site. The landfill lies within the upper catchment of the White River where the source of the river is to the south of the landfill and the mouth is at Loghill on the Shannon estuary.

The settlement pattern of the area takes the form of ribbon development along the roads at a relatively low density with sites averaging between one quarter acre to two acres in size. There is also an array of farmhouses and associated buildings scattered throughout the area.

Drawing 3.1.1 in Volume 2, Section 3 of the EIS details the distances of all the residents who are subsequent noise and visually sensitive receptors in the area and gives the distance from the site boundary.

C.2 Air

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment C.2

An assessment of the air quality in the vicinity of Gortadroma landfill was carried out by Envirocon Ltd. The report describes the existing ambient air quality, emissions from the existing landfill, possible impacts the extension may have on surrounding air quality, and planned mitigation measures to reduce the impact of any such emissions. The report prepared is presented in **Volume 3, Appendix D of the EIS** as attached.

C.3 Surface Water

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment C.3

A baseline aquatic survey was carried out by Conservation Services Ltd. on sections of the White River surrounding the proposed site for the landfill extension. The survey was complete in May 2003. The principal requirements of the survey were to assess the present water quality, the current status of salmonid fish stocks and the potential impact the proposed extension may have on the ecology of the White River. It also details mitigation measures to reduce the risk of pollution of the river during construction and operation of the landfill. This report can be found in **Volume 3, Appendix H of the EIS** as attached.

C.4 Geology & Hydrogeology

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment C.4

A report of the geology and hydrogeology of the site was completed by RPS-MCOS in May 2003. This report gives details on the existing geology and hydrogeology of the area, any existing or potential emissions and environmental impacts expected during the construction or operation of the landfill, and



proposed mitigation measures to deal with such emissions. This report can be found in **Volume 3, Appendix G of the EIS as attached.**

C.5 Human Beings / Human Health

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment C.5

An assessment was undertaken by Patricia Calleary, Chartered Engineer and town planner into the impacts of the proposed extension on the local community and is available in **Volume 3, Appendix A of the EIS** as attached. Another report on the potential impact on human health from the proposed extension of Gortadroma Landfill was compiled by Dieter Schrenk, MD, PhD, Professor of Toxicology. This is also available in **Volume 3, Appendix B of the EIS.**

C.6 Ecology

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment C.6

Roger Goodwillie & Associates undertook the assessment of potential impacts on the terrestrial ecology from the proposed extension of Gortadroma Landfill. The report can be found in **Volume 3, Appendix I of the EIS.** Conservation Services undertook a survey of the aquatic ecology. A report on the survey is available in **Volume 3, Appendix H of the EIS.**

C.7 Landscape/ Cultural Heritage

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment C.7

Nicholas Pearson Associates undertook the landscape and visual assessment of the proposed extension of the Landfill at Gortadroma.

Findings of the assessment have been incorporated into the site layout as part of an interactive process of design evolution, to ensure that landscape considerations are properly accommodated within the final scheme design. The study is presented in **Volume 3, Appendix C of the EIS.**

A report commissioned by RPS-MCOS Ltd. to assess the importance of the receiving archaeological, architectural and cultural heritage environment of an area of land immediately to the east of the existing Gortadroma landfill site was undertaken by Margaret Gowan & Co Ltd. The report sought to identify the impact of the proposal on this environment and to propose measures to investigate any potential impacts. This report can be found in **Volume 3, Appendix K of the EIS.**

C.8 Nuisances

Nuisances may include birds, fire, litter, odour, dirt on roads, traffic, vermin and flies etc. Control measures for all potential environmental nuisances should be submitted.

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment C.8

Bird Control

The most effective measures to ensure bird control is to employ good landfill practice, with prompt disposal in small areas and progressive covering of waste, together with the use of bird scaring techniques. The effectiveness of these techniques will be assessed by regular monitoring.

Good Landfill practice to minimise nuisances from birds:

- The working area is kept as small as possible (< 25 x 50 metres) all other areas are covered with soil.
- The waste is compacted with a steel wheel compactor (layer thickness < 0.5 m and 3-4 passes by compactor).
- The waste is covered at the end of each working day.
- The formation of puddles is minimised.

The effectiveness of scarecrows, birds of prey or mimicking birds of prey, gas guns etc. deteriorates in time and will need to be varied regularly to achieve maximum effect.

These operational practices will continue to be implemented and continually assessed, updated, and improved at the proposed extension site as part of the annual Environmental Management Plan (EMP).

Fire Control

All site operators and staff will be made aware of how to treat fires and the dangers associated with them should such an incident arise. Emergency response procedures have been prepared and submitted to the EPA as part of the Environmental Management Plan which can be found here in **Attachment H.1**

Precautions to be taken in order to ensure fire safety:-

- Fire alarm and defence systems are fitted in the reception area.
- A number of operatives are to attend fire officer training courses.
- A Fire Safety Drill or Code of Practice has been developed by the site management in discussion with the Chief Fire Officer. All staff will be acquainted with this code.
- The fuel storage area is positioned a distance from the reception building within a bunded enclosure.
- The local fire station will be provided with a set of keys for all security gates. They will also be issued emergency call out numbers for the site management team and a full set of plans and drawings of the main infrastructure for the facilities.

The following actions will be taken in the event or suspicion of a fire on site:

- Waste arriving on the site, which is observed to be smoking, will be directed to the emergency storage area. It will then be inspected by the management who will decide whether to extinguish it themselves or alert the fire authorities.
- Contaminated firewater will be directed to the leachate treatment compound.

- Waste freshly deposited in the working area which is observed to be on fire or smoking will be moved by a excavator and dumper to a prepared pad of inert material where it will be extinguished by water or smothering with inert material.
- If a fire is discovered deep seated within the landfill the area will be isolated to stop it spreading and will then be sealed off from all sources of oxygen. This will be affected by blocking vents and covering exposed surfaces, thus eventually extinguishing the fire.

Litter Control

An active litter management programme have been devised and is in practice at the existing landfill area, as part of the Environmental Management Plan as **found in Attachment H.1.**

The following landfill operational procedures are in practice at the existing Gortadroma Landfill and reduce the impact of windblown litter:

- Anti-litter netting which is erected around an active cell and in particular along the north eastern boundary to protect against the prevailing winds.
- The use of Hessian has been approved by the Agency as a daily means of waste cover.
- In the event of excessive high winds, which can be determined by the onsite meteorological station, an inspection will be carried out to check if litter is airborne and acceptance of waste suspended as necessary.
- Litter picking will be employed to retrieve all litter in the event of litter blowing off site or on to fences.
- Each waste load entering the site will be inspected via CCTV for suitable net cover.

The operational practices will continue to be implemented and continually assessed, updated and improved at the proposed extension as part of an annual Environmental Management Programme.

Dust and Odour Control

An assessment of the dust and odour nuisances is included in the air quality report carried out by Envirocon Ltd and Odour Ireland. The report describes the current environment in terms of dust and odour nuisances, emissions from the present landfill site and possible impacts the extension may have on surrounding air quality and proposed mitigation measures to reduce the impacts of the extension. This report can be found in **Volume 3, Appendix D of the EIS.**

Road Cleansing

Control of mud and debris on site and approach roads will be achieved by a number of means. These include ensuring that the main approach, access and haul roads will receive a properly constructed paved surface, all main haul roads and public roads are swept and washed as necessary and a wheel wash facility is situated on the exit road, to be used by all traffic before exiting to the public road network. A dedicated wheelwash for construction traffic is also in place at the site.

Traffic Control

RPS-MCOS Ltd. undertook an assessment of Gortadroma Landfill Site to assess the impact of the operational generated traffic on traffic levels on the surrounding network and to review the suitability of the road network to cater for the vehicles accessing the site over the lifetime of the proposed landfill extension. The report can be found in **Volume 3, Appendix F of the EIS.**

Vermin and Flies Control

Vermin and pests are attracted to waste disposal areas due to the organic components of the waste, which serve as a food source and because poorly compacted waste disposal areas can create shelter and form habitats for a number of species (flies, rats etc.).

Current operational procedures to deal with vermin and flies, implemented in the daily routine at the existing landfill:

- The working area is kept as small as possible. The waste is compacted with a high tonnage steel wheel compactor (layer thickness < 0.5 m and 3-4 passes by compactor)
- The waste is covered at the end of each working day
- Active waste disposal areas are temporarily covered by approximately 0.5 m of soil when there is no disposing of waste taking place for a lengthy period of time.
- Vermin control specialists are employed to advise on and maintain any control systems on an ongoing basis

These operational procedures will continue to be implemented and continually assessed, updated and improved at the proposed extension of the landfill as part of the Environmental Management Plan which can be found in **Attachment H.1**.

C.9 Noise & Vibration

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment C.9

The Environmental Services Section of Enterprise Ireland Ltd assessed noise and vibration aspects for the proposed extension to Gortadroma Landfill Site. This report can be found in **Volume 3, Appendix E of the EIS**.

C.10 Climate

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment C.10

The local climate is an important factor in determining the magnitude and direction of maximum air quality impact due to atmospheric emissions from the operation of the landfill facility at Gortadroma. The wind speed will affect the rate of dilution of emissions from the various emission sources of dust, PM₁₀ and gaseous compounds generated within the landfill. The precipitation pattern of the locality affects the generation of leachate within the landfill and so contributes to the decomposition of waste matter in the cell and is also important in controlling emissions of dust and PM₁₀ from the road surfaces. More detailed information on the current climatic conditions of the area, emissions, potential impacts from the proposed extension and mitigation measures to deal with such emissions can be found in **Volume 2, Section 3.6 of the EIS as attached**.

FACILITY DESIGN

Note that plant and infrastructure on site should be capable of dealing with 100% duty and 50% standby capacity of the maximum expected daily tonnage throughput. Maximum tonnage requirements should reflect any daily, weekly and seasonal variation in tonnages. Reference should be made to landfill manual on 'Landfill Site Design' when completing this section.

D.4 Infrastructure

Complete the following table detailing the site infrastructure. Attachment D.1 should contain the appropriate documentation. Information provided should follow the sequence, and use the headings, established in Table D.1. Additional advice on completing this section is provided in the *Guidance Note*.

TABLE D.1. INFRASTRUCTURE

Indicate whether the following infrastructure has been specified and provide the appropriate details in the Comments column.

		y/n	Comments
D.1.a	Site security arrangements including gates and fencing	Y	See attachment D.1.a
D.1.b	Designs for site roads	Y	See attachment D.1.b
D.1.c	Design of hardstanding areas	Y	See attachment D.1.c
D.1.d	Plant	Y	See attachment D.1.d
D.1.e	Wheel-wash	Y	See attachment D.1.e
D.1.f	Laboratory facilities	Y	See attachment D.1.f
D.1.g	Design and location of fuel storage areas	Y	See attachment D.1.g
D.1.h	Waste quarantine areas	Y	See attachment D.1.h
D.1.i	Waste inspection areas	Y	See attachment D.1.i
D.1.j	Traffic control	Y	See attachment D.1.j
D.1.k	Sewerage and surface water drainage infrastructure	Y	See attachment D.1.k
D.1.l	All other services	Y	See attachment D.1.l
D.1.m	Plant sheds, garages and equipment compound	Y	See attachment D.1.m
D.1.n	Site accommodation	Y	See attachment D.1.n
D.1.o	A fire control system, including water supply	Y	See attachment D.1.o
D.1.p	Civic amenity facilities	Y	See attachment D.1.p
D.1.q	Any other waste recovery infrastructure	N	See attachment D.1.q
D.1.r	Composting Infrastructure	Y	See attachment D.1.r
D.1.s	Construction and Demolition waste Infrastructure	N	See attachment D.1.s
D.1.t	Any other infrastructure	N	See attachment D.1.t

Attachment D.1 Infrastructure

All infrastructure referred to Attachment D.1 is shown on Drawing B.5.

D.1.a Site security arrangements including gates and fencing

The site security arrangements are illustrated on Drawing B.5. There are and will remain two entrances to the site. The main entrance is at the south western corner of the site and is monitored by CCTV and two sets of lockable gates. This entrance leads to the weighbridge area, where access is controlled by a series of barriers which are raised and lowered from the weighbridge office or by a handheld sensor. The weighbridge office is manned continuously during waste acceptance hours. All traffic entering the site through the main entrance must pass the weighbridge office.

Another entrance exists towards the mid south of the site. This entrance has a set of 2.5m chainlink fencing and gates. These gates are only utilised during large scale development contracts when significant construction traffic enters and exits the site. There is a designated wheelwash at this entrance also.

The operational areas will be fenced off using a 2m chainlink fence. Gates will be positioned at strategic locations to allow for monitoring points outside of the operational areas and the proposed landscaping berms to be accessed.

D.1.b Designs for site roads

The layout of access roads is illustrated on Drawing B.5.

The existing access roads around the main site offices and infrastructure will remain in place and will be regularly maintained. New roads will be provided to access the new cells and will be typically 4m wide with 300mm of clause 804 material overlaid with a 24mm double surface dressing of clause 908 material. Other access and haul roads will also be provided but will not require this surface dressing.

D.1.c Design of hardstanding areas

The hardstanding areas within the existing site include:

- Main Entrance road
- Construction entrance road
- Civic amenity area
- Parking behind administration buildings
- Farm plastic storage area
- Compost slabs
- Waste quarantine and inspection areas
- Gas compound
- Fuel bund area
- Turning circle
- The road to the leachate treatment plant

These hardstanding areas are illustrated on drawing B.5. There are no proposals at this stage for additional hardstanding areas.

D.1.d Plant

At present the existing site uses a bulldozer and a compactor to transport material and compact waste at the active tiphead. The compacted waste is covered with a layer of topsoil/daily cover at the end of each working day. The existing machinery has adequate capacity and it is planned to continue to use them for operations at the proposed site extension. An excavator and dump truck are also available as required.

There are two weighbridges in operation at the existing site, the positions of which are shown on drawing B.5. The weighbridges in place at present are Avery weighbridge models no. J102-L200. It consists of a pre-stressed, pre-cast road vehicle weighbridge, linked to the Avery Berkel "Landfill 20002" computerised software system.

The weighbridge platform has a platform size 18m x 3m and a weighing capacity of 60,000kg x 20Kg increments.

The collection, processing and control system is the micro – computer based Avery Weighlink Series No. 03N 003. The system includes computer, VDU, keyboard, card reader, induction loops and barriers for unmanned weighbridge operation.

D.1.e. Wheel wash

Two Wesley Automatic Truck wheel wash systems have been installed at the site, one for refuse vehicles and the second for construction traffic. Their positions are shown on drawing B.5. The wheel washes consist of a raised wheel cleaner with an overflow and a large water tank. Wastewater from the wheel-washing unit is drained to a sump and pumped to the leachate treatment plant.

The wheel washes consists of a wash platform, waste reclamation tank and pumping, header tank and connecting pipework. A powerhouse is included which houses a control system for the operation and pumping system. The settlement tank for this system is above the ground and hence can be emptied by connecting a sludge tanker and releasing a valve. Electrical equipment is installed and wired in accordance with the Mines and Quarries Regulations. A base is provided for hard standing for the powerhouse and water reclamation tank. Water and electricity are supplied. The system is a fixed jet system.

D.1.f. Laboratory facilities

There are no laboratory facilities on the site. Laboratory facilities are available at the LCC laboratory. TMS Environmental provides laboratory services for monitoring requirements.

D.1.g. Fuel storage

The position of the existing fuel bund is shown on drawing B.5. Fuel for the operation of the plant on site is stored in portable tanks, which are held in the bunded area and are capable of holding 110% of the largest tank capacity.

D.1.h Waste quarantine area

The position of the waste quarantine area is shown on drawing B.5 This area was constructed with reinforced concrete walls and floor, minimum thickness of 250mm. Wastewater arising in this area is drained to an adjacent sump and pumped to the leachate treatment plant.

D.1.i Waste inspection area

The position of the existing waste inspection area is shown on drawing B.5. This area was constructed with reinforced concrete walls and floors with a minimum thickness of 250mm. Wastewater arising in this area is drained to an adjacent sump and pumped to the leachate treatment plant.

D.1.j Traffic control

Car parking for site staff and visitors is provided adjacent to the reception building and to the right of the main entrance road as shown on drawing B.5. Refuse vehicles and vehicles requiring access past the reception building are controlled by barrier systems adjacent to the weighbridge office. One barrier allows traffic through the weighbridge and a second barrier access is used for non- refuse vehicles i.e. site staff, service vehicles etc. All site access is monitored electronically through the weighbridge for refuse

vehicles. Access through the second barrier is monitored electronically by use of fob keys for regular service vehicles and staff and by the weighbridge operator for infrequent access.

D.1.k Sewage and surface water drainage system

Sewage from the administration building is diverted for treatment to the leachate treatment plant.

D.1.l Services

The location of site services including ESB, Telecom, water supply and drainage are shown on drawing B.5.

D.1.m. Plant sheds

There is a plant shed located to the south west of the gas compound.

D.1.n Site accommodation

The location of the administration building is shown on drawing B.5. The administration building has been newly renovated and consists of:

- Weighbridge office and reception
- Operations Room
- Ladies and gents toilet and shower facilities
- Engineers office
- Administration office
- Two canteens (one of which can be used as a meeting room).
- Store

D.1.o Fire control

A surface water settlement lagoon is located adjacent to the main entrance and serves as a water supply in case of fire. The fire procedure is given in the Environmental Management Plan and will be constantly updated. There is a fire alarm and fire extinguishers fitted in the administration building. There are 2 fire water tankers maintained at the active area with appropriate fire hoses and pumps and site personnel are familiar with the operation of this equipment. In addition, a number of site operatives will attend fire officer training courses and at least one of these personnel will be on site during operational hours.

D.1.p Civic amenity facilities

There is an existing civic amenity facility on site which is open during normal operating hours for the site. In addition the Civic Amenity is open on Saturdays from 10am to 1pm for a trial three month period. The existing civic amenity provides recycling facilities for newspaper, magazines, cardboard, glass, plastics, and farm plastics, white goods, mixed metals, batteries, fluorescent tubes, cans, and waste oils & oil filters.

The civic amenity facility provides:

- Two paper bins provided by Indaver Ireland
- Three glass banks
- A skip for white goods
- A skip for plastics
- One bank for aluminium drink cans
- One bank for steel food cans
- One skip for mixed metals
- Four bins for cardboard
- A galvanised box for fluorescent tubes

- A plastic sealed box for batteries and 2 crates for batteries
- A bunded tank for waste oils and a bin for waste oil filters.
- Storage area for waste tyres (charge applies)
- Storage area for paint

D.1.q Any other waste recovery infrastructure

There is no other waste recovery infrastructure on site.

D.1.r Composting infrastructure

A composting slab was recently constructed on site, which drains into the leachate management system. The slab is 30m x 45m and is shown on drawing B.5. The slab has an average slope of 1:50 with a drain running in the centre to a pump sump. The walls are 500 mm high with an access platform.

Composting equipment includes:

- A trommel and shredder
- Cover material since high rainfall could lead to problems with moisture content of open windrows.
- Netting systems.
- Monitoring equipment – scales, thermometer, Solivita maturity tests.

Only green waste will be composted which will be shredded and placed in windrows 5m x 2m. The windrows will be turned every two weeks over a 10 week period and then allowed to mature for a further 10 weeks. Finished compost will be tested and then used as a soil improver. The compost product will be used either as part of site restoration and maintenance and/or distributed to the local community.

The volume of compost and waste on site will not exceed 1000m³ at any one time.

D.1.s Construction and demolition waste infrastructure

There is no proposed area for acceptance of construction and demolition waste.

D.1.t Any other infrastructure

Not applicable

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D.2 Preparatory Works

Complete the following table detailing preparatory works and provide the information in **Attachment D.2**. Information provided should follow the sequence, and use the headings, established in Table D.2. Additional advice on completing this section is provided in the *Guidance Note*.

TABLE D.2: PREPARATORY WORKS

State whether details of the following preparatory works have been produced and provide the appropriate details in the Comments column and in additional attachments.

		y/n	Comments
D.2.a	Proposed Construction schedule and sequence	Y	See attachment d.2.a
D.2.b	Method Statement for the construction work	N	See attachment d.2.b
D.2.c	Safety Statement for construction work (including an assessment of the potential for impact upon existing services e.g. gas, power lines etc.)	N	See attachment d.2.c
D.2.d	Calculations for material requirements	N	See attachment d.2.d
D.2.e	Calculations for a material balance	N	See attachment d.2.e
D.2.f	Stability analyses for the a). Foundation soils b). Slopes c). Soil-membrane interface	a. <input checked="" type="checkbox"/> b. <input checked="" type="checkbox"/> c. <input checked="" type="checkbox"/>	See attachment d.2.f
D.2.g	Importation of construction materials	Y	See attachment d.2.g
D.2.h	Removal of materials off-site	Y	See attachment d.2.h
D.2.i	Formation levels for the site	N	See attachment d.2.i
D.2.j	Basal gradients for all cells	N	See attachment d.2.j
D.2.k	Fixed ordnance datum points to Malin Head or Poolbeg	Y	See attachment d.2.k
D.2.l	Designs for all bunds	N	See attachment d.2.l
D.2.m	Total remaining capacity of the landfill	Y	See attachment d.2.m
D.2.n	Plan for lifespan of the facility	Y	See attachment d.2.n

Attachment D.2 Preparatory Works

D.2.a Proposed construction schedule and sequence

The extension to the landfill will consist of two general areas:

- Buffer zone consisting of landscape/ spoil disposal areas – 22 hectares and
- Waste disposal area – 19 hectares.

The proposed development consists of 11 additional cells which will be developed on a phased basis. The cells will have areas ranging from 1.1 – 2.3 hectares approximately and will typically hold 240,000m³ of waste or approximately 180,000 tonnes each. Each cell will therefore have a void space of 1.5-2 years at a maximum filling rate of 130,000 tonnes per year, the filling rates are reliant on the implementation of the Limerick Clare Kerry Waste Management Plan over the next 20 years.

The phasing sequence will allow for the progressive use of the landfill so that construction, operation and restoration can occur simultaneously within the site.

The development of access roads, leachate and gas management systems, surface water control and monitoring infrastructure will be continued for the new phases in accordance with EPA guidelines and approvals.

The BAT and BATNEEC principles will apply during the lifetime of the site and as such any other infrastructural improvements will be made in accordance with these principles.

D.2.b Method statement for the construction work

Detailed designs for any Specified Engineering Works will be forwarded to the EPA for approval before commencement of the works. Any contractor appointed to carry out Specified Engineering Works must supply a Method Statement for the works which is to be agreed with the Engineer before work commences.

D.2.c Safety statement for construction work

Under the Safety Health and Welfare at Work (Construction) Regulations 2001 Limerick County Council are required to appoint Project Supervisors for Design and Construction Stages (PSDS and PSCS) of the project who will take on responsibility for ensuring that the works are designed with safety in mind and executed in a safe manner. A preliminary Health and Safety Plan will be prepared by the PSDS as part of the detailed design and will be sent to the EPA for approval. The PSCS who is likely to be the main contractor for the works must maintain a Safety File which will include a Safety Statement during the construction works. Limerick County Council will fulfil all of their obligations under the Safety Health and Welfare at Work (Construction) Regulations 2001.

D.2.d Material requirements

Specific materials requirements for the proposed extension will be carried out at the detailed design stage. Table D.2. below contains approximate figures for material requirements based on a total cell area of 19 hectares – 19,000m² and a capping area of 20,000m². Both lining and capping systems will be designed in accordance with the EPA Manual, Landfill Site Design (2000).

Table D.2 Material Requirements for proposed Extension

System	Layer	Material Requirements
Cell Lining	Control Drainage layer – Rock (0.5m depth)	9,500m ³
	Compacted clay liner (1m)	190,000m ³
	HDPE	190,000m ²
	Geotextile	190,000m ²
	Leachate Drainage layer (0.5m depth)	9,500m ³
Cell Capping	Geocomposite (Gas)	20,000m ²
	GCL	20,000m ²
	Geocomposite (Drainage)	20,000m ²
	Subsoil between 700mm and 850mm	3,000m ³
	Topsoil 150mm and 300mm	17,000m ³

D.2.e Material balances

Calculations for material balances for the proposed extension will also be carried out at the detailed design stage. As part of the preliminary design an estimate of the amount of soil to be removed as part of the cell construction has been carried out. This figure is estimated at 75,000m³ and it is envisaged that the material will be placed as landscape bunds around the periphery of the landfill area, (as outlined on Drawing G.1). These bunds will be developed on a progressive basis over the lifetime of the site in line with the cell construction phases, with some of the spoil being reused as permanent and temporary capping within the landfill area. The proposed spoil disposal areas are based on a maximum disposal height of 3m and will cover a total area of approximately 11ha.

D.2.f Stability analysis for the Foundation Soils, Slopes, Soil Membrane interface

Stability analysis for the foundation soils, slopes and soil membrane interface for the proposed extension will be carried out at the design stage.

D.2.g Importation of construction materials

Table D.2 above lists the material requirements for the proposed extension. While some of the excavated material recovered from the cell construction may be suitable for the subsoil layer in the capping all other materials will have to be imported to the site. Bills of quantities for each of the phased site extension construction works will be prepared according to the tendering process and the principal quantities of material to be imported over the life of the site will be detailed accordingly. These will be sent to the EPA for approval as Specified Engineering Works.

D.2.h Removal of materials off-site

It is expected that no material will be removed off-site. Any excavated soil not used in the construction phase will be used to construct landscape bunds or temporarily stockpiled for future use in the capping of cells and for daily cover etc. Soils will be stored according to condition 4.5 of the current waste licence (17-2) and any conditions relevant in any future licence.

D.2.i Formation levels for the site

Formation levels for the site will be identified at the detailed design stage.

D.2.j Basal gradients for all cells

Details on basal gradients will be available at the detailed design stage.

D.2.k Location and level of datum points

The levels of all fixed ordnance datum points are to Malin Head OD.

D.2.l Design for all bunds

Cells will be separated by intercell bunds, which will contain leachate within separate cells during operation and prevent surface water, which may be collected in an unused cell, being contaminated. Cells may also be further subdivided by a sacrificial bund during the filling stage to reduce the generation of leachate in larger cells. Detailed specifications for all bunding will be available at the detailed design stage.

D.2.m Total remaining capacity of the landfill

From the beginning of January 2004 there was remaining void space for approximately 210,000 tonnes of waste, within cells 11, 12 and 13. Given that the site is licenced to accept 130,000 tonnes per year and if the licence limit is reached every year then the remaining void space will be exhausted by mid August 2005. More detailed information is given in **Volume 2, Section 1.4 of the attached EIS.**

D.2.n Plan for lifespan of the facility

Depending on the implementation of the Limerick/Clare/Kerry Waste Management Plan the proposed extension could serve the waste disposal needs of Limerick City and County for 15-20 years. Refer to **Volume 2, Section 1.4 of the attached EIS** for further details.

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D.3 Liner System

Complete the following table detailing the liner system and provide the information requested as **Attachment D.3**. Additional information on completing this section is provided in the *Guidance Note*.

TABLE D.3 LINER SYSTEM

Answer the following questions and provide the appropriate details in the Comments column.

		y/n	Comments
D.3.a	Is the landfill a containment facility?	Y	See attachment 3.d.a
D.3.b	Is the type of liner specified?	Y	See attachment 3.d.b
D.3.c	Are specifications included for all liner materials?	Y	See attachment 3.d.c
D.3.d	Has a Method Statement been produced?	N	See attachment 3.d.d
D.3.e	Has a Safety Statement been produced?	N	See attachment 3.d.e
D.3.f	Has a Quality Control Plan been specified?	Y	See attachment 3.d.f
D.3.g	Has a Quality Assurance Plan been specified?	Y	See attachment 3.d.g
D.3.h	Has independent, third-party supervision, testing and controls been specified?	Y	See attachment 3.d.h
D.3.i	Have access ramps to the cells been designed	N	See attachment 3.d.i
D.3.j	Have precommissioning tests been specified?	Y	See attachment 3.d.j
D.3.k	Has a leak detection survey been specified?	Y	See attachment 3.d.k

Attachment D.3 Liner System

D.3.a Is the Landfill a Containment Facility?

Cells 1-4 are surrounded by a 600mm bentonite slurry wall which is keyed into approximately 1m of clay at the base. This wall is up to 8m deep in parts and limits the risk of leachate escaping into the surrounding area. The nine most recent cells, 5-13, are fully lined cells with leachate collection and recirculation systems installed. The lining systems to be installed in the 11 new cells will comply with the BAT principle and at a minimum in accordance with the EPA Landfill Design manual, the existing Waste Licence (17-2) and any future Licence.

D.3.b Is the type of liner specified?

The liner system will consist of the following components, which is as stated in Waste Licence 17-2:

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



The liner detailed design and its construction will be in accordance with the guidelines provided in the Agency's *Landfill Manual, Landfill Site Design* and any further guidelines issued by the EPA.

D.3.c Are specifications included for all liner materials?

All liner specifications will be included in tender documents for construction works at the site and will be forwarded to the EPA as part of the requirement for Specified Engineering Works for approval.

D.3.d Has a method statement been produced?

No Method statement has been produced at this stage for any construction works on site. All method statements will be agreed with Contractors appointed to each Phase of the works before construction commences. All method statements will be in compliance with the specification requirements for each of the lining layers and the CQA plan.

D.3.e Has a safety statement been produced?

Under the Safety Health and Welfare at Work (Construction) Regulations 2001 Limerick County Council are required to appoint Project Supervisors for Design and Construction Stages (PSDS and PSCS) of the project who will take on responsibility for ensuring that the works are designed with safety in mind and executed in a safe manner. A preliminary Health and Safety Plan will be prepared by the PSDS as part of the detailed design and will be sent to the EPA for approval. The PSCS who is likely to be the main contractor for the works must maintain a Safety File which will include a Safety Statement during the construction works. Limerick County Council will fulfil all of their obligations under the Safety Health and Welfare at Work (Construction) Regulations 2001.

D.3.f & g Has a quality control and assurance plan been specified?

A 'Construction Quality Control Plan' for the supply and placement of all lining materials at the site, will be included in the tender documents for the construction works at the site and will be forwarded to the EPA for approval.

D.3.h Have independent, third-party supervision, testing and controls been specified?

The appointment of an independent, third party supervisor for the testing and controlling of the proposed liner systems for the existing and proposed site will be made at the design stage. The details of the company/person including name, experience, qualifications, and details of all testing to be undertaken will be forwarded to the EPA when available.

D.3.i Have Access Ramps to the Cells Been Designed?

The detailed designs of the access ramps have not been completed at this stage, but will be forwarded to the agency when available.

D.3.j Have Pre-commissioning Tests Been Specified?

Pre-commissioning tests including clay layer testing and testing of all seams on the HDPE lining will be carried out by an independent third party supervisor as detailed in Section D.3.h. Results from the testing will be forwarded to the Agency in the form of a CQA Validation Report when available.

D.3.k Has a leak Detection Survey Been Specified?

A leak detection survey is to be carried out on the completed HDPE lining by an independent third party supervisor as detailed in attachment D.3.h. Results from testing will be forwarded to the agency in the form of a CQA Validation Report when available.

D.4 Leachate Management

Complete the following table detailing leachate management arrangements. Further information should be provided as set out in the *Guidance Note* and included in **Attachment D.4**. Leachate monitoring results should be provided on the standard forms presented in Annex 1 and included in the attachment.

TABLE D.4 LEACHATE MANAGEMENT ARRANGEMENTS

Answer the following questions in Table D.4 and provide the appropriate details as listed in the *Guidance Note*.

		y/n	Comments
D.4.a	Is there a Leachate Management Plan?	Y	See attachment D.4.a
D.4.b	Have annual quantities of leachate been calculated?	Y	See attachment D.4.b
D.4.c	Has the total quantity of leachate been calculated?	Y	See attachment D.4.c
D.4.d	Has the composition of the leachate been analysed?	Y	See attachment D.4.d
D.4.e	Has the composition of the leachate been predicted?	Y	See attachment D.4.e
D.4.f	Have water balance calculations been performed on actual and projected intakes?	Y	See attachment D.4.f
D.4.g	Have the size of the cells been specified taking account of the water balance calculations?	Y	See attachment D.4.g
D.4.h	Has a Phasing Plan been developed?	Y	See attachment D.4.h
D.4.i	Has the size of the Working Area been specified?	Y	See attachment D.4.i
D.4.j	Has a leachate collection system been specified?	Y	See attachment D.4.j
D.4.k	Has a leachate storage system been specified?	Y	See attachment D.4.k
D.4.l	Has a system for monitoring the level of leachate in the waste been designed?	Y	See attachment D.4.l
D.4.m	Is leachate recirculation proposed/practised?	Y	See attachment D.4.m
D.4.n	Has leachate removal been specified?	Y	See attachment D.4.n

D.4.a Is There a Leachate Management Plan?

All leachate which is generated within the existing nine fully lined cells and the proposed extension is, and will be, collected and treated on site. There are four abstraction pumps taking leachate from the unlined cells 1-4 which is also treated on site. For the proposed future cells leachate will be collected in a network of slotted pipes laid in the base of each cell and draining to a leachate collection chamber constructed at the lowest point of each cell, from where it will be pumped to the leachate treatment plant.

Leachate is currently re-circulated in cells 5-10 of the existing landfill to aid in the decomposition process of the waste. It is proposed to continue this practice in the extension area which will aid in the management of leachate throughout the whole site. Leachate is pumped to leachate recirculation chambers at the top surface of the waste and is allowed filter down to the waste body through a series of slotted pipes.

D.4.b Have annual quantities of leachate been calculated?

Refer to section Volume 2 Section 2.2.9 of the EIS

D.4.c Total Quantities of Leachate

Refer to section Volume 2 Section 2.2.9 of the EIS.

D.4.d Has the Composition of the leachate been analysed?

Leachate is tested annually for different chemical parameters set out in Table D.6.1 of Schedule D of the current Waste Licence Reg 17-2.

D.4.e Has the Composition of the Leachate Been Predicted?

The waste streams to be accepted at the proposed extension will be non-hazardous and made up primarily of household and commercial waste. The compositional data of the leachate for the proposed extension site is expected to be similar to that measured in the existing landfill.

D.4.f Have Water Balance Calculations Been Performed on Actual and Projected Intakes?

Yes, please refer to **Volume 2, Section 2.2.9** of the EIS.

D.4.g Have the Size of the Cells been Specified Taking Account of the Water Balance Calculations?

A water balance equation was devised for the proposed extension area and included the leachate which will be generated from the existing cells (1-13). The capacity of the existing leachate treatment plant is 120m³/day so the objective of water balance equation and the sizing of the cells is to ensure that the amount of leachate generated at any stage over the lifetime of the site does not excessively exceed the generation of 120m³/day. Recirculation of leachate into fully lined cells has commenced at the site and will supply extra storage capacity for leachate during periods of heavy rainfall. Sacrificial sub-cell bunds may be developed in the new cells once filling commences to reduce the amount of clean rainwater entering the waste and becoming leachate.

D.4.h Has a Phasing Plan Been Developed?

The phasing sequence will allow for the progressive use of the landfill so that construction, operation and restoration can occur simultaneously within the site. The phasing plan will be dependent on the implementation of the Limerick/Clare/Kerry Waste Management Plan. See **Volume 2, Section 2.2.4 of the EIS** for further details.

D.4.i Has the Size of the Working Area Been Specified?

Only one working face shall exist at the existing or proposed extension at any one time for the deposit of waste other than for cover or restoration measures. The working face will be no more than 2.5 metres in height after compaction, no more than 25 metres wide and no more than 50m long, and will have a slope no greater than 1:3, in accordance with the existing waste licence. Some of these measurements may be changed when prior permission has been granted by the Agency.

All waste deposited at the working face will be compacted and covered with suitable material as soon as practicable, prior to the end of the working day. These operational procedures will continue when filling of the new cells commence.

D.4.j Has a Leachate Collection System Been Specified?

The leachate collection system in the existing cells 5-13 consists of 100-200 mm perforated HDPE pipes in a Leachate Collection Layer which consists of a 500mm deep layer of pea gravel on the HDPE and clay lined base of the landfill. The side slopes of the landfill are covered with pea gravel to a depth of 500mm. The leachate collection pipework, in each cell, drains to a central leachate collection sump from where it is pumped on to the leachate holding lagoon and subsequently to the leachate treatment plant. This design will be carried through to the proposed extension cells also and is in accordance with the EPA Landfill Design manuals.

Cells 1-4 are capped with a composite cap incorporating a geosynthetic clay liner (GCL) and an LLDPE layer to minimise water ingress into the waste, there are also four leachate abstraction pumps in place to extract leachate from within the cells. The nine most recent cells, 5-13, are fully lined cells with leachate

collection and recirculation systems installed. This design will be carried forward into the proposed extension.

D.4.k Has A Leachate Storage System Been Specified?

Treated and raw leachate is stored in two HDPE lined holding lagoons. The smaller lagoon is located adjacent to the head of the treatment plant while the second larger lagoon stores treated leachate and has a larger capacity so that during the summer months when the flows in the White River are too low to allow discharge of treated leachate there is extra storage capacity on site.

D.4.l Has A System For Monitoring The Level Of Leachate In The Waste Been Designed?

A SCADA system for monitoring the collection, recirculation and treatment of leachate around the site has recently been installed. Each pump, sump and lagoon is connected to this system and they can be viewed and controlled from the administration system. The system also contains a series of alarms in case of a failure within the system. Leachate will not be allowed to exceed a level of 1m over the top of the liner at the base of any cells within the landfill. Leachate levels are monitored on the existing site at present, with levels being recorded in the monitoring wells installed in the existing waste body.

D.4.m Is Leachate Recirculation Proposed/Practiced?

Leachate is recirculated in cells 5-10 of the existing landfill to aid in the decomposition process of the waste. It is proposed to continue this practice in the extension area which will aid in the management of leachate throughout the whole site. Leachate is pumped to leachate recirculation chambers at the top surface of the waste and is allowed filter down to the waste body through a series of slotted pipes.

D.4.n Has Leachate Removal Been Specified?

Raw leachate is pumped to the raw leachate lagoon from where the leachate is pumped to the head of the treatment plant. At the base of the treatment plant the treated leachate is monitored for temperature, electroconductivity and pH. If the leachate passes the parameters set it is discharged to the White River in a controlled flow. If the leachate does not pass these parameter checks it is diverted to the raw leachate lagoon where it goes through the process again (refer to Volume 2, Section 2.2.10 of the EIS).

The capacity of the existing leachate treatment plant is 120m³/day so the objective of the water balance equation and the sizing of the cells is to ensure that the amount of leachate generated at any stage over the lifetime of the site does not excessively exceed capacity of 120m³/day.

Attachment D.4.1 On-Site Leachate Treatment Systems

A full description of any leachate treatment systems, proposed or existing, with **clearly labelled** process flow diagrams, should be provided as part of **Attachment D.4.1**. A programme for the monitoring of aerosols should be described. Additional advice on completing this section is provided in the *Guidance Note*.

Attachment D.4.1

The leachate treatment plant was established and came into operation in late 1998, the constructed leachate treatment plant is a biological treatment plant including tertiary treatment and consists of the following main units:

- Inlet pumps
- Anoxic Tank
- Aerated activated sludge tank
- Clarifier
- Return sludge pumps
- Surplus sludge pump
- Polishing/settling lagoon

- Biological sand filter
- Intermediate pumps
- Peat filter

The EPA emission limits call for extensive removal of organic matter and suspended solids.

The treatment plant aims at intensive removal of suspended solids (SS) and biodegradable organic matter (BOD₅). Moreover the activated sludge system is designed for nitrification of ammonia to nitrate (e.g.: $\text{NH}_4^+ + 2\text{O}_2 \Rightarrow \text{NO}_3^- + \text{H}_2\text{O} + 2\text{H}^+$)

The original plant as designed was not appropriate to the biological denitrification of nitrate to gaseous nitrogen (e.g. $6\text{NO}_3^- + 5\text{CH}_3\text{OH} \Rightarrow 3\text{N}_2 + 5\text{CO}_2 + 7\text{H}_2\text{O} + 6\text{OH}^-$). However in order to reduce the total oxidised nitrogen (TON) levels an anoxic tank has been constructed at the head of the treatment plant.

The bulk of TON in the river, without the anoxic tank, would have been NO₃ (NO₂ is rarely more than 1-2 % of the TON level). The commissioning of the anoxic tank will help greatly to reduce the amount of nitrate in the effluent and therefore substantially reduce the levels of TON.

The maximum capacity of the treatment plant is 120m³/day or 1.38l/s. Discharges will only be made to the White River when no emission limits for the treated leachate as specified in the waste licence (17-2) have been exceeded and when the minimum river flow is 50l/s and is greater than 40 dilutions of effluent at all times.

The emission limit values for the treated leachate discharging to the White River are:

Parameter	Limit (all units in mg/l except pH)
pH	6-8
BOD	25
Suspended Solids	35
Total P (as P)	2
Total Ammonia (as N)	3

Volume to be emitted: Maximum in any one day: 120m³/day

Maximum rate per second: 1.38 l/s

Time of emission: Minimum river flow in White River of 50 l/s and must be greater than 40 dilutions of effluent at all times.

TABLE D.4.1 ON-SITE LEACHATE TREATMENT SYSTEMS

Treatment System Type: *Aerated Activated Sludge*
(one page per treatment system)

Control ¹ parameter	Equipment ²	Equipment maintenance	Equipment calibration	Equipment back-up
Dissolved oxygen, pH, BOD, Suspended Solids, Ammonia	Aerators, Sub-surface mixers, pumps etc.	All weekly, Visual check daily	As monitoring results dictate	See Note 1

Note 1: If monitoring results detect a fault in the system then leachate is removed and stored in the leachate holding lagoon until the problem is resolved or else it is tankered to one of two nearby treatment plants, Castletroy and Newcastle West

Control ¹ parameter	Monitoring to be carried out ³	Monitoring equipment	Monitoring equipment calibration
Flow	Continuous	Flow meter at head and base of treatment plant. Also on discharge line to River. Weir in River	As necessary
Dissolved Oxygen	Continuous	Dissolved Oxygen probe	As necessary
pH	Continuous	Probe and meter	As necessary
Electroconductivity	Continuous	Laboratory	As necessary
Temperature	Continuous	Probe and meter	As necessary
Suspended Solids	Weekly	Laboratory	As necessary
Ammonia	Continuous	Probe and meter	As necessary

¹ List the operating parameters of the treatment system which control the function of the treatment system.
² List the equipment necessary for the proper function of the treatment system.
³ List the monitoring of the control parameter to be carried out.

D.4.2 Efficiency of On-Site Leachate Treatment Systems

The efficiency of existing on-site leachate treatment systems should be assessed, where appropriate, using the Standard Forms provided in Annex 1. Where a leachate treatment system is proposed, a suitable monitoring regime for assessing its efficiency should be specified. **Attachment D.4.2** should contain the appropriate documentation. Additional advice on completion of this section is provided in the *Guidance Notes*.

Attachment D.4.2

Raw leachate and treated leachate discharge are monitored on a weekly basis in accordance with Schedule D.6 of the current Waste Licence (17-2). Parameters monitored for are in accordance with those specified in table D.6.4 of the Waste Licence.

- BOD
- COD
- Suspended Solids
- Total Ammonia (as N)
- TON (as N)
- Total Phosphorous

Attachment included	yes <input checked="" type="checkbox"/> no <input type="checkbox"/> not applicable <input type="checkbox"/>
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D.4.3 Off-site Leachate Removal

This part should only be completed when leachate is removed off-site to a sewage treatment works or other treatment or disposal system.

TABLE D.4.3 OFF-SITE LEACHATE REMOVAL

Year	Leachate Quantity (m ³)	Carrier	Disposal/Treatment Location
		(Method, Location & Undertaker)	(Method, Location & Undertaker)
1997	20,430	Limerick Co. Co. by articulated tanker	Extended aeration, Newcastle West and Castletroy
1998	~50,000	Limerick Co. Co. by articulated tanker	Extended aeration, Newcastle West and Castletroy
1999	~70,000	Limerick Co. Co. by articulated tanker	Extended aeration, Newcastle West and Castletroy
2000	~82,982	Limerick Co. Co. by articulated tanker	Extended aeration, Newcastle West and Castletroy Note1
2001	~82,982	Limerick Co. Co. by articulated tanker	Extended aeration, Newcastle West and Castletroy Note1
2002	37,167	Limerick Co. Co. by articulated tanker	Extended aeration, Newcastle West and Castletroy Note1
2003	22,984.24	Limerick Co. Co. by articulated tanker	Extended aeration, Newcastle West and Castletroy Note1

Note 1 Leachate has also been sent to Rathkeale Waste Water Treatment Plant by prior agreement with the Agency.

Attachment D.4.3 should contain a **characterisation** of the **leachate** being removed from site. The relevant Standard Forms provided in Annex 1, should be used and included in the attachment.

Attachment D.4.3

The characterisation of the leachate being tankered off-site is given in Table D.4.3 below. The leachate is a mixture of treated leachate and raw leachate. The figures given are an average of results from the period 1st January to the 11th July 2003. Refer to weekly leachate monitoring reports submitted to the Agency for the period 1st January to the 11th July 2003 for raw data.

Table D.4.3 Composition of Leachate removed off-site

Parameters	Characterisation of Leachate to be tankered off-site (mg/l) ¹
BOD	2.7
COD	250.04
Suspended Solids	28.56
Total Ammonia (as N)	14.84
TON (as N)	163.40
Total Phosphorous	0.38

¹ Average of results for the period 1st January to the 11th July 2003.



Attachment included	Yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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D.5 Landfill Gas Management

All landfill sites should have suitable arrangements for the management of landfill gas. **Attachment D.5** should contain the appropriate documentation. Information provided should follow the sequence, and use the headings, established in Table D.5. Additional advice on completing this section is provided in the *Guidance Note*. The following table should be completed.

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TABLE D.5. LANDFILL GAS MANAGEMENT

Answer the questions and provide the appropriate details in the Comments column.

		y/n	Comments
D.5.a	Is there a Landfill Gas Management Plan?	Y	See attachment D.5.a
D.5.b	Is there an active (i.e., pumped) landfill gas extraction system?	Y	See attachment D.5.b
D.5.c	Does the active system cover all of the filled area?	Y	See attachment D.5.b
D.5.d	Is gas flaring undertaken at the site?	Y	See attachment D.5.b
D.5.e	Is there a passive venting system?	N	See attachment D.5.d
D.5.f	Does the passive system cover all of the filled area?	N/A	
D.5.g	Is landfill gas used to generate energy at the site?	Y	See attachment D.5.g
D.5.h	Have emissions from the flarestack and utilisation plant been assessed for source, composition, quantity and level and rate?	Y	See attachment D.5.h
D.5.i	Has a maintenance programme for the control system been specified?	Y	All maintenance is carried out as a result of regular walkover surveys and during gas field balancing
D.5.j	Has a condensate removal system been designed?	Y	Condensate traps exist along the main gas collection main from the wells to the flare. They are emptied by a gravity main to the leachate holding lagoon
D.5.k	Have gas alarm systems been installed in the site buildings?	Y	A crowcon gas analyser is in place in the administration building and is serviced regularly by LSL.
D.5.l	Have measures been installed to prevent landfill gas migration (e.g. barriers)?	Y	A slurry wall exists around cells 1-4 which helps prevent the migration of gas to the north west of the site.
D.5.m	Has a time-scale been proposed for the installation of landfill gas infrastructure?	Y	See attachment D.5.m

D.5.a Is there a landfill gas management plan?

A landfill gas extraction and flaring system exists on site at present and is continually being maintained, improved and extended. As part of Licence 17-2 a gas utilisation plant must be in operation by October 2004. Plans are underway to obtain such a system.

A program to monitor methane emissions is being developed at present and a quarterly review of landfill gas control measures that are in place is to be carried out shortly in compliance with Condition 3.13 of Waste Licence 17-2. See Volume 2, Section 2.2.12 of the EIS for further details.

D.5.b Is there an active (i.e. pumped) landfill extraction system?

A gas management extraction and flaring system has been in operation since March 2002 at the site consisting of 60 wells drilled into the waste and connected to a ring main via manifold/valve system whereby the gas is drawn to a flare which burns the methane to convert it to carbon dioxide. The gas

management system will be extended over the new cells as they are progressively capped and the BAT principle will apply to all future gas extraction and utilisation systems.

D.5.e Is there a passive venting system?

At present there is no passive venting system at the existing site. All fully restored cells (cells 1-10) have an active gas extraction system installed and cell 13 which has a temporary cover in place also has a temporary active gas extraction system. Passive landfill gas venting is avoided if at all possible at Gortadroma.

D.5.g Is landfill gas used to generate energy at the site?

Condition 3.13 of Waste Licence 17-2 lays down the requirements for landfill gas management at the site. There is an enclosed flare on site at present and during 2004 a gas utilisation plant which will generate electric power, will be installed in accordance with the requirements of the Waste Licence 17-2.

GasSim modelling is used to determine the amount of bulk gas generated per year at different collection efficiencies. More detailed information on the amount of electricity expected to be produced can be found in **Volume 2, Section 2.2.12 of the attached EIS.**

D.5.h Have emissions from the flarestack and utilisation plant been assessed for source, composition, quantity and level and rate?

See attached report in italics from the flare suppliers, Biogas, of testing carried out in August 2003.

Flare unit of 1500 Nm³/h capacity at Gortadroma Landfill Site appeared to be a problem with secondary flame front resulting in flame visible on the top of the shroud.

In order to solve the problem, burners with improved design have been installed. Preliminary conclusions demonstrated that the secondary flame front has disappeared and the emissions were still within the prescribed limits.

Actions taken during site visit on the 1st August 2003:

- 1. Flare emissions have been measured using Testo 1000 analyser before any changes were made. The results were as follows (copies of the printouts available on request):*

Date	Species	Units	Value	Value
01/08/2003				
Time			10:14:59	10:15:44
	Ambient temp	°C	22	22
	Stack temp	°C	1049	1082
	Nett temp	°C	1026	1060
	O ₂	% vol.	12.4	9.0
	CO	mg/m ³	9	8
	CO ₂	% vol.	4.8	6.8
	Pressure	mbar	-0.37	-0.43
	NO ₂	mg/m ³	2	2
	REF. % O ₂	%	3.0	3.0

During measurements the instrument displayed request for NOx cell calibration. This was unexpected as the instrument was serviced in July 2003. The manufacturer was consulted and recommendation was



made to return the instrument for check. Therefore the NOx results have to be treated with caution. Other results were not affected.

Very approximate calculation of NOx levels can be made, considering that NO₂ is constituting some 10-15% of overall emissions of NOx. Hence the NOx level could have been in 13 – 20 range.

The full report of the status of the instrument is expected from the manufacturer. Verification of the results is recommended in due course.

2. Burners with improved design were installed on the flare.
3. Series of tests were carried out in a range of flow rates and different burner configurations in order to find out the best flare performance parameters.
4. The flare was re-tested for emissions after best parameters were set. The results were as follows (copies of the printouts available on request):

Date	Species	Units	Value	Value
01/08/2003				
Time			15:55:44	15:56:34
	Ambient temp	°C	24	24
	Stack temp	°C	1032	1052
	Nett temp	°C	1008	1027
	O ₂	% vol.	11.6	10.4
	CO	mg/m ³	3	1
	CO ₂	% vol.	5.3	6.0
	Pressure	mbar	-0.28	-0.33
	NO ₂	mg/m ³	0	2
	REF. % O ₂	%	3.0	3.0

Comparison of the results taken before and after burners change demonstrate that the temperature was left within the same range (just above 1000°C), CO has slightly improved and the NO₂ did not change. Zero reading on the first test could be attributable to levels below the detection limit.

5. At 18:30 the flare was left with optimum setting for given gas quality and no flame was visible of the top of the shroud.

On return to the site at 22:30, the running parameters of the flare were checked. No flame was visible on the top of the shroud and the flare was running satisfactorily.

Another report on flare emissions monitoring was carried out by TMS in November of 2003. The report found that the limit for carbon monoxide emissions was exceeded. The report found that the arrangement of extending a probe over the top of the flare stack was unsatisfactory and may have resulted in oxygen levels which were much higher than those actually present in the emission stream due to dilution by ambient air. A continuous carbon monoxide monitor was installed in May of 2004 in compliance with the Waste Licence 17-2. The TMS report can be found in attachment D5.