



ENVIRONMENTAL IMPACT STATEMENT  
FOR  
INCREASE IN WASTE CAPACITY  
AT  
TED O' DONOGHUE & SONS WASTE DISPOSAL FACILITY  
KNOCKPOGE, WATERFALL,  
CO. CORK

VOLUME 3 OF 3

TECHNICAL  
APPENDICES

## TABLE OF CONTENTS

Appendix 1 Planning Permission

Appendix 2 Letters

Appendix 3 Groundwater Monitoring Results

Appendix 4 Air Quality Report

Appendix 5 Traffic Impact Assessment

Appendix 6 Noise Impact Report

Appendix 7 Ecology

# APPENDIX I

## PLANNING PERMISSION

**CORK COUNTY COUNCIL**  
**PLANNING & DEVELOPMENT ACTS 2000 - 2006**  
**NOTIFICATION OF DECISION TO GRANT PERMISSION**  
(with conditions)

Reference No. in Planning Register  
REG NO. 07/6731

Ted O'Donoghue  
C/o Pat O'Halloran  
Corbally  
Ballinora  
Waterfall, Cork

In pursuance of the powers conferred upon them by the above mentioned Act and for the reason set out in the First Schedule hereto, the Council of the County of Cork has by Order dated  
decided to GRANT PERMISSION for the development of land namely;

Extension to waste and recovery station

**At:** Knockpoge Waterfall


In accordance with the plans and particulars submitted by the applicant

**On:** 30/03/2007

And subject to the conditions (8 No.) set out in Column 1 of the Second Schedule attached hereto. The reasons for the imposition of the said conditions are set out in Column 2 of the schedule.

An appeal against a decision of the Planning Authority may be made to An Bord Pleanála by any authorised person before the EXPIRATION of the period of FOUR WEEKS beginning on the day of the giving (i.e. Date of Order) of the decision of the Planning Authority. (SEE NOTES ATTACHED)

If there is no appeal against the said decision, a grant of **PERMISSION** in accordance with the decision will be issued after the expiration of the period within which an appeal may be made to An Bord Pleanála. It should be noted that until a grant of **PERMISSION** has been issued the development in question is NOT AUTHORISED.

 Signed on behalf of the said Council

Date:

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SEE NOTES ATTACHED

	Condition	Reason
1	The proposed development shall be carried out in accordance with plans and particulars lodged with the Planning Authority on 30/03/07, save where amended by the conditions herein.	To clarify the documents to which this permission relates in the interests of the proper development of the site.
2	Surface water shall be disposed of within the site and shall not be allowed to flow onto public road and roadside drainage shall not be obstructed.	To maintain proper roadside drainage and to prevent the flooding of the public road.
3	The extent of hardstanding area, as well as any vehicle or material storage, waste processing or any activity related to the commercial operation on the site shall not extend into the lands to the east of the eastern side of the storage building to which this application relates.	To maintain the existing extent of commercial activity at the site in order to safeguard the amenities of the area.
4	During construction, all solid wastes arising on the site shall be recycled as far as possible. Materials exported from the site for recovery, recycling or disposal shall be managed at an approved facility and in such a manner as is agreed with the Planning Authority.	To safeguard the amenities of the area.
5	All construction shall be carried out in such a manner as to ensure that no odour or dust nuisance occurs off site.	To safeguard the amenities of the area.
6	Construction activities shall be carried out such that no noise nuisance is caused to adjoining residences.	To safeguard the amenities of the area.
7	No burning shall take place on site.	To safeguard the amenities of the area.
8	At least one month before commencing development, the developer shall pay a contribution of €53,159.60 to Cork County Council in respect of public infrastructure and facilities benefiting development in the area of the Planning Authority. The value of this contribution is calculated in accordance with the Council's Development Contributions Scheme on (01/04/07), and shall be increased monthly at a rate of 8% per annum in the period between the date on which this value was calculated, and the date of payment. No development shall take place until the monies have been paid to the Council.	It is considered appropriate that the developer should contribute towards the cost of public infrastructure and facilities benefiting development in the area of the Planning Authority, as provided for in the Council's Development Contributions Scheme, made in accordance with section 48 of the 2000 Planning and Development Act, and that the level of contribution payable should increase at a rate which allows both for inflation and for phasing in of the target contribution rates, in the manner specified in that Scheme.

## **FIRST SCHEDULE**

**Planning Ref. No. 07/6731**

It is considered that, subject to compliance with the conditions set out in the Second Schedule, the proposed development would not seriously injure the amenities of the area, and would be in accordance with the proper planning and sustainable development of the area.

## **APPENDIX II**

### **LETTERS**

## GLENSIDE ENVIRONMENTAL SERVICES

### Acoustic & Environmental Consultants

24 The Heathers  
Classes Lake  
Ballincollig  
Cork  
Ireland  
T: 021-4875183  
M: 086-3819387  
E: gleenv@eircom.net

The Secretary  
Waste Management Section  
Cork County Council  
County Hall  
Cork  
2<sup>nd</sup> July 2008

**Re: Review of Waste Licence (Ref: 0147-01) for Ted O Donoghue & Sons Ltd.  
Waste Transfer Station at Knockpoge, Waterfall, Co. Cork**

Dear Sir/Madam,

Glenside Environmental Services have been commissioned by Ted O' Donoghue & Sons Ltd., to undertake an Environmental Impact Statement (EIS), as part of an application for a review of their existing waste licence (W0147-01) for their waste transfer facility at Knockpoge, Waterfall, Co. Cork.

It is proposed that the allowable maximum annual intake of waste at the facility will increase from 23,000 tonnes to 60,000 tonnes per annum. This increase in tonnage is requested to allow for the processing of increased waste volumes generated within the catchment area of County Cork and the diversion of wastes to landfill. It is also proposed to apply to the EPA for inclusion of private vehicles to use the facility for recycling purposes.

Waste acceptance and operational procedures at the facility will remain the same as current activities.

Under Part 2 of Schedule 5 of the Planning and Development Regulations, 2001 *'Installation for the disposal of waste with an annual intake greater than 25,000 tonnes...'* requires the completion of an Environmental Impact Statement.

In preparation of the EIS, due regard will be paid to the 'Advice Notes on Current Practice in the preparation of Environmental Impact Statements' and 'Guidelines on the Information to be Contained in Environmental Impact Statements (March 2002)' issued by the Environmental Protection Agency and the requirements of the Planning and Development Regulations, 2001 (S.I. No. 600 of 2001).

Glenside Environmental Services would, therefore, be grateful if you could provide any information relevant to the proposed development that you may hold and/or highlight any issues that you feel should be addressed in the EIS. For your information, it is proposed to submit the completed Environmental Impact Statement to Cork County Council and the EPA in August 2008.

Thanking you in anticipation of your co-operation in this matter.

Yours faithfully,

---

Patrick Power

Environmental Consultant  
For and on behalf of  
Glenside Environmental Services



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### Acoustic & Environmental Consultants

24 The Heathers  
Classes Lake  
Ballincollig  
Cork  
Ireland  
T: 021-4875183  
M: 086-3819387  
E: gleenv@eircom.net

The Secretary  
South Western Regional Fisheries Board  
Sunnyside House  
Macroom  
Co. Cork  
2<sup>nd</sup> July 2008

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Waste acceptance and operational procedures at the facility will remain the same as current activities.

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A land drain carrying surface water run-off flows from the site and enters the Curraheen River approximately 300m south of the site. This run-off is sampled monthly and the Curraheen River is sampled annually upstream and downstream in accordance with the requirements of the existing licence. There have been no exceedances of the licence limits or noted deterioration in water quality in the Curraheen River.

There is no proposal to include added infrastructure in the facility in this application.

Glenside Environmental Services would, therefore, be grateful if you could provide any information relevant to the proposed development that you may hold and/or highlight any issues that you feel should be addressed in the EIS. For your information, it is proposed to submit the completed Environmental Impact Statement to Cork County Council and the EPA in August 2008.

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Patrick Power

Environmental Consultant  
For and on behalf of Glenside Environmental Services

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Classes Lake  
Ballincollig  
Cork  
Ireland  
T: 021-4875183  
M: 086-3819387  
E: gleenv@eircom.net

The Secretary  
Development Applications Unit  
National Parks and Wildlife Service  
7 Ely Place  
Dublin  
2<sup>nd</sup> July 2008

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There is no proposal to include added infrastructure in the facility or extend the existing facility in this application.

Glenside Environmental Services would, therefore, be grateful if you could provide any information relevant to the proposed development that you may hold and/or highlight any issues that you feel should be addressed in the EIS. For your information, it is proposed to submit the completed Environmental Impact Statement to Cork County Council and the EPA in August 2008.

Thanking you in anticipation of your co-operation in this matter.

Yours faithfully,

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Patrick Power  
Environmental Consultant  
For and on behalf of Glenside Environmental Services

## GLENSIDE ENVIRONMENTAL SERVICES

### Acoustic & Environmental Consultants

24 The Heathers  
Classes Lake  
Ballincollig  
Cork  
Ireland  
T: 021-4875183  
M: 086-3819387  
E: gleenv@eircom.net

Mr. Ken O Riordan  
Ballincollig Area Engineer  
Cork County Council  
Innishmore  
Ballincollig  
Cork  
2<sup>nd</sup> July 2008

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There is no proposal to include added infrastructure, construction of buildings in the facility or extend the existing facility in this application.

Glenside Environmental Services would, therefore, be grateful if you could provide any information relevant to the proposed development that you may hold and/or highlight any issues that you feel should be addressed in the EIS. For your information, it is proposed to submit the completed Environmental Impact Statement to Cork County Council and the EPA in August 2008.

Thanking you in anticipation of your co-operation in this matter.

Yours faithfully,

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Patrick Power

Environmental Consultant  
For and on behalf of Glenside Environmental Services

**APPENDIX III**

**GROUNDWATER & SURFACE WATER**

**MONITORING RESULTS**



## CERTIFICATE OF ANALYSIS

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**Client:** Glenside Environmental  
24 The Heathers  
Classes Lake  
Ballincollig  
Co. Cork

**Attention:** Patrick Power

**Date:** 24 April, 2008

**Our Reference:** 08-B02178/01

**Your Reference:** 1 Water Sample

**Location:**

A total of 1 samples was received for analysis on Thursday, 10 April 2008 and authorised on Thursday, 24 April 2008. Accredited laboratory tests are defined in the log sheet, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our final report, it was a pleasure to be of service to you, and we look forward to our continuing association.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Signed

*Lorraine Mc Namara*

**Lorraine McNamara**  
Laboratory Technical Manager

*Cormac Lacey*

**Compiled By**

.....  
*Cormac Lacey*



1291  
GROUP

Printed at 17:11 on 24/04/2008

ALcontrol Geochem Ireland is a trading division of ALcontrol UK Limited.

Registered Office: Templeborough House, Mill Close, Rotherham, S60 1BZ. Registered in England and Wales No. 4057291

# Alcontrol Laboratories Ireland

## Test Schedule

**Ref Number: 08-B02178/01**

**Sample Type: WATER**

Client: Glenside Environmental

Location:

Date of Receipt: 10/04/2008

Client Contact: Patrick Power

Client Ref: 1 Water Sample

UKAS Accredited [Testing Laboratory] No. 1291	Detection Method	Calculation	CV AA	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS
08-B02178-S0002-A01	SW2	UNKNOWN	Plastic Bottle	X	X	X	X	X	X	X	X	X	X	X	X
08-B02178-S0002-A17	SW2	UNKNOWN	Non-Acontrol Plastic Bottle	On Hold											
08-B02178-S0002-A18	SW2	UNKNOWN	Non-Acontrol Plastic Bottle	On Hold											

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

# Alcontrol Laboratories Ireland Test Schedule

**Ref Number: 08-B02178/01**

Client: Glenside Environmental

Date of Receipt: 10/04/2008

**Sample Type: WATER**

Location:

Client Contact: Patrick Power

Client Ref: 1 Water Sample

UKAS Accredited [Testing Laboratory] No. 1291	Detection Method	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP OES	ICP OES	IR	KONE	KONE	KONE	KONE	KONE	METER	METER
		✓	✓	✓	✓	✓	X	X	✓	✓	✓	✓	✓	✓	✓	✓
Alcontrol Reference	Sample Identity															
	Other ID															
	P / V															
08-B02178-S0002-A01	SW2	UNKNOWN	UNKNOWN	Plastic Bottle	Dissolved Phosphorus Low Level	X	On Hold	X	On Hold							
08-B02178-S0002-A17	SW2	UNKNOWN	UNKNOWN	Non-Accreted Plastic Bottle	Dissolved Selenium Low Level	X		X								
08-B02178-S0002-A18	SW2	UNKNOWN	UNKNOWN	Non-Accreted Plastic Bottle	Dissolved Silver Low Level	X		X								
					Dissolved Zinc Low Level	X		X								
					Dissolved Potassium	X		X								
					Dissolved Sodium	X		X								
					Total Organic Carbon	X		X								
					Chloride	X		X								
					Nitrate as NO3	X		X								
					Nitrite as NO2	X		X								
					ortho Phosphate	X		X								
					Sulphate	X		X								
					Electrical Conductivity @ 25C	X		X								
					pH (Liquid)	X		X								

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

# Alcontrol Laboratories Ireland Test Schedule

**Ref Number: 08-B02178/01**

**Sample Type: WATER**

Client: Glenside Environmental

Location:

Date of Receipt: 10/04/2008

Client Contact: Patrick Power

Client Ref: 1 Water Sample

UKAS Accredited [Testing Laboratory] No. 1291				Detection Method		SPECTRO	SPECTRO	TITRATION											
				Ammoniacal Nitrogen	Total Cyanide	Total Alkalinity													
Alcontrol Reference	Sample Identity	Other ID	P / V																
08-B02178-S0002-A01	SW2	UNKNOWN	Plastic Bottle	X	X	X													
08-B02178-S0002-A17	SW2	UNKNOWN	Non-Acrotol Plastic Bottle	On Hold															
08-B02178-S0002-A18	SW2	UNKNOWN	Non-Acrotol Plastic Bottle	On Hold															

**Notes :** NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING



# ALcontrol Laboratories Ireland

## Test Schedule Summary

**Ref Number: 08-B02178/01**  
 Client: Glenside Environmental  
 Date of Receipt: 10/04/2008

**Sample Type: WATER**  
 Location:  
 Client Contact: Patrick Power  
 Client Ref: 1 Water Sample

\* SUBCONTRACTED TO OTHER LABORATORY / \*\* SAMPLES ANALYSED AT THE CHESTER LABORATORY

SCHEDULE	METHOD	TEST NAME	TOTAL
X	Calculation	Total Oxidised Nitrogen	1
X	CV AA	Dissolved Mercury Low Level	1
X	ICP MS	Dissolved Arsenic Low Level	1
X	ICP MS	Dissolved Barium Low Level	1
X	ICP MS	Dissolved Boron Low Level	1
X	ICP MS	Dissolved Cadmium Low Level	1
X	ICP MS	Dissolved Calcium Low Level	1
X	ICP MS	Dissolved Chromium Low Level	1
X	ICP MS	Dissolved Copper Low Level	1
X	ICP MS	Dissolved Iron Low Level	1
X	ICP MS	Dissolved Lead Low Level	1
X	ICP MS	Dissolved Magnesium Low Level	1
X	ICP MS	Dissolved Manganese Low Level	1
X	ICP MS	Dissolved Nickel Low Level	1
X	ICP MS	Dissolved Phosphorus Low Level	1
X	ICP MS	Dissolved Selenium Low Level	1
X	ICP MS	Dissolved Silver Low Level	1
X	ICP MS	Dissolved Zinc Low Level	1
X	ICP OES	Dissolved Potassium	1
X	ICP OES	Dissolved Sodium	1
X	IR	Total Organic Carbon	1
X	KONE	Chloride	1
X	KONE	Nitrate as NO3	1
X	KONE	Nitrite as NO2	1
X	KONE	ortho Phosphate	1
X	KONE	Sulphate	1
X	METER	Electrical Conductivity @ 25C	1
X	METER	pH (Liquid)	1
X	SPECTRO	Ammoniacal Nitrogen	1
X	SPECTRO	Total Cyanide	1
X	TITRATION	Total Alkalinity	1

Interim  
 Validated

# Acontrol Laboratories Ireland Table Of Results

Ref Number: 08-B02178/01

Sample Type: WATER

Client: Glenside Environmental

Location:

Date of Receipt: 10/04/2008

Client Contact: Patrick Power

(of first sample)

Client Ref: 1 Water Sample

UKAS Accredited [Testing Laboratory] No. 1291	Detection Method		Method Detection Limit													
	Calculation	CV/AA	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS
	✓	<0.3mg/l	<1ug/l	<1ug/l	<3ug/l	<0.4ug/l	<120ug/l	<1ug/l	<1ug/l	<2ug/l	<1ug/l	<100ug/l	<1ug/l	<1ug/l	<10ug/l	
Alcontrol Reference																
08-B02178-S0002	SW2	UNKNOWN	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
			20.0	<0.05	<1	5	16	<0.4	18990	1	11	<2	7	10410	81	15

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL. NDP = NO DETERMINATION POSSIBLE

Checked By : Cormac Lacey

Interim  
 Validated

# Alcontrol Laboratories Ireland

## Table Of Results

**Ref Number: 08-B02178/01**

**Sample Type: WATER**

Client: Glenside Environmental

Location:

Date of Receipt: 10/04/2008

Client Contact: Patrick Power

(of first sample)

Client Ref: 1 Water Sample

UKAS Accredited [Testing Laboratory] No. 1291	Detection Method	ICP MS	ICP MS	ICP MS	ICP OES	ICP OES	IR	KONE	KONE	KONE	KONE	KONE	KONE	KONE	KONE	KONE	METER	METER	SPECTRO	SPECTRO	
	Method Detection Limit	<1ug/l	<2ug/l	<1ug/l	<0.2mg/l	<0.2mg/l	<2mg/l	<1mg/l	<3mg/l	<0.03mg/l	<0.3mg/l	<0.05mg/l	<0.014mg/l	naph Units	<0.05mg/l	<0.2mg/l					
08-B02178-S0002	SW2	UNKNOWN	<1	<2	88	0.6	11.1	<2	23	11	<0.03	86.9	<0.05	0.284	6.10	<0.05	<0.2				
	Sample Identity	Other ID	Dissolved Selenium Low Level	Dissolved Silver Low Level	Dissolved Zinc Low Level	Dissolved Potassium	Dissolved Sodium	Total Organic Carbon	Chloride	Sulphate	ortho Phosphate as PO4	Nitrate as NO3	Nitrite as NO2	Electrical Conductivity @ 25C	pH	Total Cyanide	Ammoniacal Nitrogen as N				

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL. NDP = NO DETERMINATION POSSIBLE

Checked By : Cormac Lacey



**APPENDIX**

## APPENDIX

1. Results are expressed as mg/kg dry weight (dried at 30°C) on all soil analyses except for the following: NRA Leach tests, flash point, and ammoniacal N<sub>2</sub> by the BRE method, VOC, PRO, Cyanide, Acid Soluble Sulphide, SVOC, DRO, PAH, PCB, TPH CWG ,TPH by IR, OFGs and SEM.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. A sub sample of all samples received will be retained free of charge for one month for soils and one month for waters (sample size permitting), but may then be discarded unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, an asbestos screen is done in-house on soils and if no fibres are found will be reported as NFD – no fibres detected. If fibres are detected, then identification and quantification is carried out by ALcontrol Technichem or Alcontrol Shutlers in the UK . If a sample is suspected of containing asbestos, then drying and crushing will be suspended on that sample until the asbestos results are known. If asbestos is present, then no analysis requiring dry sample are undertaken.
7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace is present in the volatile sample.
8. NDP – No Determination Possible due to insufficient/unsuitable sample.
9. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.
10. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

Last updated February 2005



## CERTIFICATE OF ANALYSIS

---

**Client:** Glenside Environmental  
24 The Heathers  
Classes Lake  
Ballincollig  
Co. Cork

**Attention:** Patrick Power

**Date:** 24 April, 2008

**Our Reference:** 08-B02178/01

**Your Reference:** 1 Water Sample

**Location:**

A total of 1 samples was received for analysis on Thursday, 10 April 2008 and authorised on Thursday, 24 April 2008. Accredited laboratory tests are defined in the log sheet, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our final report, it was a pleasure to be of service to you, and we look forward to our continuing association.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Signed

*Lorraine Mc Namara*

**Lorraine McNamara**  
Laboratory Technical Manager

*Cormac Lacey*

**Compiled By**

.....  
*Cormac Lacey*



1291  
GROUP

Printed at 17:11 on 24/04/2008

ALcontrol Geochem Ireland is a trading division of ALcontrol UK Limited.

Registered Office: Templeborough House, Mill Close, Rotherham, S60 1BZ. Registered in England and Wales No. 4057291

# Alcontrol Laboratories Ireland

## Test Schedule

**Ref Number: 08-B02178/01**

**Sample Type: WATER**

Client: Glenside Environmental

Location:

Date of Receipt: 10/04/2008

Client Contact: Patrick Power

Client Ref: 1 Water Sample

UKAS Accredited [Testing Laboratory] No. 1291	Detection Method					Calculation	CV AA	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS
	Sample Identity	Other ID	P / V	Total Oxidised Nitrogen	Dissolved Mercury Low Level													
08-B02178-S0002-A01	SW2	UNKNOWN	Plastic Bottle	X		✓												
08-B02178-S0002-A17	SW2	UNKNOWN	Non-Alcohol Plastic Bottle	On Hold	X													
08-B02178-S0002-A18	SW2	UNKNOWN	Non-Alcohol Plastic Bottle	On Hold	X													

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING





# Alcontrol Laboratories Ireland

## Test Schedule

**Ref Number: 08-B02178/01**

**Sample Type: WATER**

Client: Glenside Environmental

Location:

Date of Receipt: 10/04/2008

Client Contact: Patrick Power

Client Ref: 1 Water Sample

UKAS Accredited [Testing Laboratory] No. 1291		Detection Method			SPECTRO	SPECTRO	TITRATION										
Alcontrol Reference	Sample Identity	Other ID	P / V	Ammoniacal Nitrogen	Total Cyanide	Total Alkalinity											
08-B02178-S0002-A01	SW2	UNKNOWN	Plastic Bottle	X	X	X											
08-B02178-S0002-A17	SW2	UNKNOWN	Non-Acrotol Plastic Bottle	On Hold													
08-B02178-S0002-A18	SW2	UNKNOWN	Non-Acrotol Plastic Bottle	On Hold													

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

# ALcontrol Laboratories Ireland

## Test Schedule Summary

**Ref Number: 08-B02178/01**  
 Client: Glenside Environmental  
 Date of Receipt: 10/04/2008

**Sample Type: WATER**  
 Location:  
 Client Contact: Patrick Power  
 Client Ref: 1 Water Sample

\* SUBCONTRACTED TO OTHER LABORATORY / \*\* SAMPLES ANALYSED AT THE CHESTER LABORATORY

SCHEDULE	METHOD	TEST NAME	TOTAL
X	Calculation	Total Oxidised Nitrogen	1
X	CV AA	Dissolved Mercury Low Level	1
X	ICP MS	Dissolved Arsenic Low Level	1
X	ICP MS	Dissolved Barium Low Level	1
X	ICP MS	Dissolved Boron Low Level	1
X	ICP MS	Dissolved Cadmium Low Level	1
X	ICP MS	Dissolved Calcium Low Level	1
X	ICP MS	Dissolved Chromium Low Level	1
X	ICP MS	Dissolved Copper Low Level	1
X	ICP MS	Dissolved Iron Low Level	1
X	ICP MS	Dissolved Lead Low Level	1
X	ICP MS	Dissolved Magnesium Low Level	1
X	ICP MS	Dissolved Manganese Low Level	1
X	ICP MS	Dissolved Nickel Low Level	1
X	ICP MS	Dissolved Phosphorus Low Level	1
X	ICP MS	Dissolved Selenium Low Level	1
X	ICP MS	Dissolved Silver Low Level	1
X	ICP MS	Dissolved Zinc Low Level	1
X	ICP OES	Dissolved Potassium	1
X	ICP OES	Dissolved Sodium	1
X	IR	Total Organic Carbon	1
X	KONE	Chloride	1
X	KONE	Nitrate as NO3	1
X	KONE	Nitrite as NO2	1
X	KONE	ortho Phosphate	1
X	KONE	Sulphate	1
X	METER	Electrical Conductivity @ 25C	1
X	METER	pH (Liquid)	1
X	SPECTRO	Ammoniacal Nitrogen	1
X	SPECTRO	Total Cyanide	1
X	TITRATION	Total Alkalinity	1

# Alcontrol Laboratories Ireland

## Table Of Results

- Interim
- Validated

**Ref Number: 08-B02178/01**

Client: Glenside Environmental

Date of Receipt: 10/04/2008

(of first sample)

**Sample Type: WATER**

Location:

Client Contact: Patrick Power

Client Ref: 1 Water Sample

UKAS Accredited [Testing Laboratory] No. 1291	Detection Method		Method Detection Limit	Calculation	Analysis Results																														
	Sample Identity	Other ID			CV AA	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS																
08-B02178-S0002	SW2	UNKNOWN	<0.3mg/l	✓	Total Oxidised Nitrogen as N	mg/l	20.0	<0.05	ug/l	<1	ug/l	5	ug/l	16	ug/l	<0.4	ug/l	18990	ug/l	1	ug/l	11	ug/l	<2	ug/l	7	ug/l	10410	ug/l	81	ug/l	15	ug/l	13	ug/l

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

NDP = NO DETERMINATION POSSIBLE

Checked By : Cormac Lacey

Interim  
 Validated

# Alcontrol Laboratories Ireland

## Table Of Results

**Ref Number: 08-B02178/01**

Client: Glenside Environmental

Date of Receipt: 10/04/2008

(of first sample)

**Sample Type: WATER**

Location:

Client Contact: Patrick Power

Client Ref: 1 Water Sample

UKAS Accredited [Testing Laboratory] No. 1291	Detection Method	Method Detection Limit		ICP MS	ICP MS	ICP MS	ICP MS	ICP OES	ICP OES	IR	KONE	KONE	KONE	KONE	KONE	KONE	METER	METER	SPECTRO	SPECTRO
		ICP MS	ICP MS																	
08-B02178-S0002	Sample Identity	Other ID	SW2	UNKNOWN	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mS/cm	pH Units	mg/l	mg/l
					Dissolved Selenium Low Level	Dissolved Silver Low Level	Dissolved Zinc Low Level	Dissolved Potassium	Dissolved Sodium	Total Organic Carbon	Chloride	Sulphate	ortho Phosphate as PO4	Nitrate as NO3	Nitrite as NO2	Electrical Conductivity @ 25C	pH	Total Cyanide	Ammoniacal Nitrogen as N	
					<1ug/l	<2ug/l	<1ug/l	<0.2mg/l	<0.2mg/l	<2mg/l	<1mg/l	<3mg/l	<0.03mg/l	<0.3mg/l	<0.05mg/l	<0.014mS/cm	naph Units	<0.05mg/l	<0.2mg/l	
					✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
					<1	<2	88	0.6	11.1	<2	23	11	<0.03	86.9	<0.05	0.284	6.10	<0.05	<0.2	

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL. NDP = NO DETERMINATION POSSIBLE

Checked By : Cormac Lacey



**APPENDIX**

## APPENDIX

1. Results are expressed as mg/kg dry weight (dried at 30°C) on all soil analyses except for the following: NRA Leach tests, flash point, and ammoniacal N<sub>2</sub> by the BRE method, VOC, PRO, Cyanide, Acid Soluble Sulphide, SVOC, DRO, PAH, PCB, TPH CWG ,TPH by IR, OFGs and SEM.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. A sub sample of all samples received will be retained free of charge for one month for soils and one month for waters (sample size permitting), but may then be discarded unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, an asbestos screen is done in-house on soils and if no fibres are found will be reported as NFD – no fibres detected. If fibres are detected, then identification and quantification is carried out by ALcontrol Technichem or Alcontrol Shutlers in the UK . If a sample is suspected of containing asbestos, then drying and crushing will be suspended on that sample until the asbestos results are known. If asbestos is present, then no analysis requiring dry sample are undertaken.
7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace is present in the volatile sample.
8. NDP – No Determination Possible due to insufficient/unsuitable sample.
9. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.
10. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

Last updated February 2005



**APPENDIX IV**  
**AIR QUALITY RESULTS**

(A division of Gradko International Ltd.)

St. Martins House, 77 Wales Street Winchester, Hampshire SO23 0RH  
tel.: 01962 860331 fax: 01962 841339 e-mail:diffusion@gradko.co.uk

## LABORATORY ANALYSIS REPORT

### DETERMINATION OF AMBIENT AIR VOLATILE ORGANIC COMPOUNDS IN DIFFUSION TUBES BY THERMAL DESORPTION / GAS CHROMATOGRAPHY

Report number 28505B

Booking in reference no B 3096

Customer Glenside

Date samples received 27/05/2008

Location	Tube no	Date exposed	Date finished	Exposure hours	Benzene				
					Benzene	Toluene	Ethyl Benzene	mp-Xylene	o-Xylene
Values Reported in $\mu\text{g}/\text{m}^3$ in Air									
AQ1		02/05/2008	16/05/2008	336.00	0.48				
AQ2		02/05/2008	16/05/2008	336.00	0.68				
AQ3		02/05/2008	16/05/2008	336.00	0.72				
AQ4		02/05/2008	16/05/2008	336.00	1.20				

Blank Not provided  
(RESULTS ARE NOT BLANK CORRECTED)

Weeks exposed 2 UPTAKE RATES 1.47  
( $\text{ng} \cdot \text{ppm}^{-1} \cdot \text{min}^{-1}$ )

Overall M.O.U 11.267% +/- Limit of detection 2.496ng

Analyst signature Analyst name K. Jozwik

Date of analysis 05/06/2008 Date of report 06/06/2008

The analysis has been carried out in accordance with in-house method GLM4

Calculations and assessments involving the exposure procedures and periods provided by the client and results which are derived from data outside our calibration range are not within the scope of our Accredited Quality System. Those results obtained using exposure data shall be indicated by an asterisk. Any queries concerning the data in this report should be directed to the Laboratory Manager Gradko International Ltd.  
Form LQF32a Issue 2

REPORT OFFICIALLY CHECKED

Gradko International Ltd  
This signature confirms the authenticity of this document  
Signed.....  
G. Stutchbury, Laboratory Manager

## LABORATORY ANALYSIS REPORT

### DETERMINATION OF ACID GASES IN DIFFUSION TUBES BY ION CHROMATOGRAPHY

**REPORT NUMBER** 28398  
**BOOKING IN REFERENCE NO** B 3097  
**CUSTOMER** Glenside Environmental  
**DATE SAMPLES RECEIVED** 27/05/2008  
**GRADKO LAB REF** GIA 3657-3660

#### NITROGEN DIOXIDE

Tube Identification	Date On	Date Off	Exposure (hrs)	µg NO <sub>2</sub> Total	µgNO <sub>2</sub> - Blank	NO <sub>2</sub> µg/m <sup>3</sup> *	NO <sub>2</sub> ppb*
AQ 1	02/05/2008	16/05/2008	336.00	0.4823	0.4548	18.24	9.49
AQ 2	02/05/2008	16/05/2008	336.00	0.2425	0.2150	8.62	4.48
AQ 3	02/05/2008	16/05/2008	336.00	0.1406	0.1131	4.54	2.36
AQ 4	02/05/2008	16/05/2008	336.00	0.1736	0.1461	5.86	3.05

Lab Blank 0.0275

(RESULTS ARE BLANK CORRECTED)

**OVERALL M.O.U** 12.62+/-  
Analysed on Dionex ICS 3000

**LIMIT OF DETECTION** 0.009µg

**ANALYST SIGNATURE**

**ANALYST NAME** J.Farbiszewska

**DATE OF ANALYSIS** 30/05/2008

**DATE OF REPORT** 02/06/2008

THIS ANALYSIS HAS BEEN CARRIED OUT ON ACCORDANCE WITH IN-HOUSE METHOD GLM3

The Diffusion Tubes have been tested within the scope of Gradko International Ltd. Laboratory Quality Procedures calculations and assessments involving the exposure procedures and periods provided by the client are not within the scope of our UKAS accreditation. Those results obtained using exposure data shall be indicated by an asterisk. Any queries concerning the data in this report should be directed to the Laboratory Manager Gradko International Ltd.

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Page 1 of 2

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Gradko International Ltd  
This signature confirms the authenticity of this document  
Signed.....  
G. Stutchbury, Laboratory Manager

## LABORATORY ANALYSIS REPORT

### DETERMINATION OF ACID GASES IN DIFFUSION TUBES BY ION CHROMATOGRAPHY

Tube Identification	Date On	Date Off	Exposure (hrs)	SULPHUR DIOXIDE			
				µg S Total	µgS - Blank	SO <sub>2</sub> µg/m <sup>3</sup> *	SO <sub>2</sub> ppb*
AQ 1	02/05/2008	16/05/2008	336.00	0.033	0.016	1.78	0.67
AQ 2	02/05/2008	16/05/2008	336.00	0.049	0.032	3.50	1.31
AQ 3	02/05/2008	16/05/2008	336.00	0.042	0.025	2.73	1.02
AQ 4	02/05/2008	16/05/2008	336.00	0.064	0.048	5.17	1.94

Lab Blank 0.016  
(RESULTS ARE BLANK CORRECTED)

OVERALL M.O.U 12.62+/-  
Analysed on Dionex ICS 3000

ANALYST SIGNATURE

DATE OF ANALYSIS

30/05/2008

LIMIT OF  
DETECTION 0.062µg

ANALYST NAME J.Farbiszewska

DATE OF REPORT 02/06/2008

THIS ANALYSIS HAS BEEN CARRIED OUT ON ACCORDANCE WITH IN-HOUSE METHOD GLM3

The Diffusion Tubes have been tested within the scope of Gradko International Ltd. Laboratory Quality Procedures calculations and assessments involving the exposure procedures and periods provided by the client are not within the scope of our UKAS accreditation. Those results obtained using exposure data shall be indicated by an asterisk. Any queries concerning the data in this report should be directed to the Laboratory Manager Gradko International Ltd.

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Page 2 of 2

REPORT OFFICIALLY CHECKED

Gradko International Ltd  
This signature confirms the authenticity of this document  
Signed.....  
G. Stutchbury, Laboratory Manager

**APPENDIX V**  
**TRAFFIC IMPACT ASSESSMENT**

PROPOSED INCREASE IN CAPACITY TO  
WASTE TRANSFER STATION AT  
WATERFALL, CO. CORK

Traffic Impact Assessment

for

**Glenside Environmental**

on behalf of

**Ted O' Donoghue & Sons**

**August 2008**

Prepared by: George Frisby

Approved by: Dermot Donovan

Job No: 08121  
Reference: TIA  
Date created: August 2008

Tel: +353 56 7795800  
Fax: + 353 567792999  
info@roadplan.ie

4 Johns Quay,  
Kilkenny.

**TABLE OF CONTENTS**

- 1 INTRODUCTION .....2**
  - 1.1 INTRODUCTION.....2
  - 1.2 OBJECTIVE .....2
  - 1.3 STUDY METHODOLOGY.....2
  - 1.4 STRUCTURE OF REPORT .....2
  
- 2 PROPOSED DEVELOPMENT .....4**
  - 2.1 EXISTING LAND USE.....4
  - 2.2 SITE LOCATION .....4
  
- 3 EXISTING AND PROPOSED TRAFFIC CONDITIONS.....6**
  - 3.1 EXISTING TRAFFIC FLOWS.....6
  - 3.2 EXISTING ROAD NETWORK.....6
  - 3.3 QUEUE LENGTH SURVEYS.....7
  
- 4 TRIP DISTRIBUTION AND TRAFFIC GENERATION.....9**
  - 4.1 TRAFFIC SURVEYS .....9
  - 4.2 TRIP DISTRIBUTION.....9
  - 4.3 DEVELOPMENT TRIP GENERATION .....10
  - 4.4 FUTURE YEAR TRAFFIC GROWTH.....11
  
- 5 OPERATIONAL ASSESSMENTS .....14**
  - 5.1 INTRODUCTION.....14
  - 5.2 EXISTING LOCAL ROAD / DEVELOPMENT ACCESS PRIORITY JUNCTION .....14
    - 5.2.1 2008 Existing Situation .....14
    - 5.2.2 2013 With Proposed Extension .....14
    - 5.2.3 2023 With Proposed Extension .....14
  - 5.3 CONCLUSIONS .....15
  
- 6 PARKING .....17**
  - 6.1 PARKING PROVISION .....17
  
- 7 ROAD SAFETY, PEDESTRIANS AND INTERNAL LAYOUT .....19**
  - 7.1 ROAD SAFETY .....19
  - 7.2 PEDESTRIANS.....19
  - 7.3 INTERNAL LAYOUT .....19
  
- 8 SUMMARY AND CONCLUSIONS.....21**
  - 8.1 GENERAL .....21
  
- APPENDICES .....22**
  - APPENDIX A – SCOPING REPORT
  - APPENDIX B – DRAWINGS
  - APPENDIX C – TRAFFIC FLOW SHEETS
  - APPENDIX D – TRAFFIC FLOW DIAGRAMS
  - APPENDIX E – TRICS INFORMATION
  - APPENDIX F – PICADY RESULTS

# 1 INTRODUCTION



# 1 Introduction

## 1.1 INTRODUCTION

Roadplan Consulting has been commissioned by Glenside Environmental on behalf of Ted O' Donoghue & Sons to prepare a Traffic Impact Assessment of the proposed extension to the existing waste transfer facility at Waterfall, Co. Cork. In preparing this report, Roadplan Consultancy has made reference to:

- The 'Cork County Development Plan 2003',
- 'The Institute of Highways and Transportation Guidelines on the Preparation of Traffic Impact Assessments',
- NRA "Future Traffic Forecasts 2002 to 2040"
- NRA "Transport Assessment Guidelines".

## 1.2 OBJECTIVE

The objective of this report is to examine the traffic implications associated with the proposed extension to the existing waste transfer facility in terms of how it can integrate with existing traffic in the area. The report will determine and quantify the extent of the additional trips generated by the extension, and the impact on operational performance of such trips on the local road network, in particular the existing development access onto the local road.

## 1.3 STUDY METHODOLOGY

The methodology adopted for this report is summarised as follows:

- A scoping document was provided to the Roads Department of Cork County Council. This is contained in Appendix A.
- Manual Classified Traffic Counts were undertaken on the 5<sup>th</sup> of August 2008, during the a.m. and p.m. peak periods at the existing development access.
- Existing Traffic Assessment – A spreadsheet model was created which contains the base year DO-NOTHING traffic count data described above. The traffic count data was used to develop a PICADY model of the existing access to the waste transfer station.
- Future Year Assessment – The estimated future year traffic volumes on the study area road network, as a result of the increase in background traffic and the additional development related traffic, was used to assess the future operational performance of the junction both at the year of opening of the development, 5 years and 15 years after opening.

## 1.4 STRUCTURE OF REPORT

Following this introduction, the report is set out as follows:

- Chapter 2 describes the details of the proposed extension to the waste transfer station;
- Chapter 3 provides an overview of the existing traffic conditions and the local road network, identifying any existing issues related to traffic flow or road infrastructure;
- Chapters 4 and 5 outline the analysis as described in the Study Methodology above. The analysis examines trip generation, distribution and resulting junction operational performance with the extension in place;
- Chapter 6 establishes the parking requirements of the development and sets out how these needs are provided for;
- Chapter 7 addresses road safety, pedestrian and internal layout issues; and
- Chapter 8 presents the conclusions of the report.

## 2 PROPOSED DEVELOPMENT

## 2 Proposed Development

### 2.1 EXISTING LAND USE

The site is currently a waste transfer station. Waste is taken in by skips from households and the building industry in Cork. The waste is then separated at the development. The recyclable fraction is stored for transfer to other facilities while the rest is transferred in large ejector trailers for further processing or disposal.

The existing waste transfer station is currently licensed to accept 23,000 tonnes of waste per year however last year it accepted 31,000 tonnes of waste.

It is intended to apply for a license to cater for 60,000 tonnes of waste per year. In addition it is proposed to provide a civic amenity facility at the site to cater for private vehicles to dispose of recyclables and general household waste.

Access to the development will be via the existing access to the site. The layout of the development is shown in Appendix B – Site Layout.

### 2.2 SITE LOCATION

The site is located in the townland of Knockpoge approximately 8 km south east of Cork City. It is proposed to access the site via the existing entrance from the local road via a priority T-junction.



Figure 2.1: Site Location Map

### 3 EXISTING AND PROPOSED TRAFFIC CONDITIONS

### 3 Existing and Proposed Traffic Conditions

#### 3.1 EXISTING TRAFFIC FLOWS

As part of the Traffic Impact Assessment, traffic flows have been collected for the base year scenario. Manual Classified Traffic Counts were undertaken in the a.m. and p.m. peak periods on the 5<sup>th</sup> of August 2008 at the existing access to the waste transfer station. The counts show that in the a.m. and p.m. peak the principal turning flows to and from the existing development are to and from Waterfall direction. A summary of the count data is contained in Appendix C – Traffic Flow Sheets.

#### 3.2 EXISTING ROAD NETWORK

The local road at the existing access to the proposed development it is governed by an 80 Kph speed limit. The carriageway at this location has a road width of 4.5m. From the traffic surveys it can be seen that the principal flows to and from the site are from the Waterfall direction. The main routes to the site from Cork, Ballincollig, the N22 and the N28 are shown in red on Fig 3.1 below.

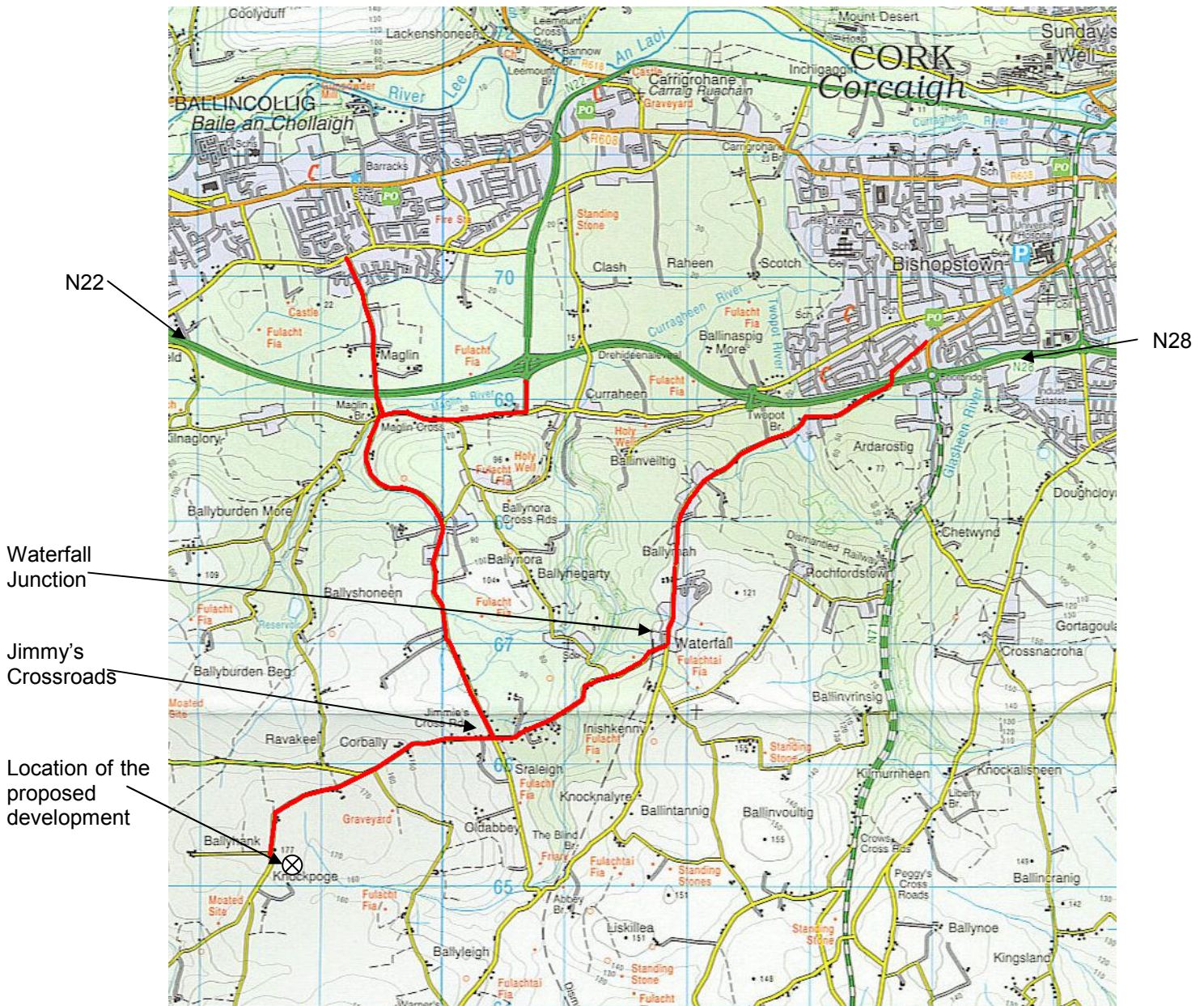


Fig 3.1 Main Access Routes to development

The local road network between the existing site and Cork City / Ballincollig generally consists of a 5.5/6.0m wide carriageway. The junctions at Jimmy's Crossroads and Waterfall have adequate capacity to cater for the level of traffic at these junctions.

### **3.3 QUEUE LENGTH SURVEYS**

As part of the traffic count surveys, queue lengths were noted. No queues were observed during the a.m. and p.m. peak period at the access to the waste transfer station.

## 4 TRIP DISTRIBUTION AND TRAFFIC GENERATION

## 4 Trip Distribution and Traffic Generation

### 4.1 TRAFFIC SURVEYS

Full turning movement traffic surveys were carried out the 5<sup>th</sup> of August 2008 at the existing access to the waste transfer station covering the peak traffic periods (07:30 to 09:30 and 16:30 to 18:30). These flows are summarised for the peak periods in the following tables with the traffic flow diagrams included in Appendix D.

#### 2008 AM Existing

From \ To	Waterfall	Dev. Access	Killeady	Totals
Waterfall	0	6	7	<b>13</b>
Dev. Access	9	0	1	<b>10</b>
Killeady	15	1	0	<b>16</b>
<b>Totals</b>	<b>24</b>	<b>7</b>	<b>8</b>	<b>39</b>

#### 2008 PM Existing

From \ To	Waterfall	Dev. Access	Killeady	Totals
Waterfall	0	6	17	<b>23</b>
Dev. Access	10	0	1	<b>11</b>
Killeady	10	1	0	<b>11</b>
<b>Totals</b>	<b>20</b>	<b>7</b>	<b>18</b>	<b>45</b>

The counts at the existing development access show that the principal flows are towards Waterfall in the a.m. peak and from Waterfall in the p.m. peak. The p.m. peak hour flow is slightly higher than the a.m. peak hour flows. The counts show that in the a.m. and p.m. peak the principal turning flows to and from the existing development are to and from Waterfall. Full details of existing and predicted traffic flows are provided in Appendix C – Traffic Flow Sheets and Appendix D – Traffic Flow Diagrams.

### 4.2 TRIP DISTRIBUTION

It is proposed that the additional generated traffic will distribute in a similar pattern to the exiting flows at the existing access. These distribution percentages are shown in the tables below. These proportions will be used throughout this report for the junction assessment.

#### 2008 AM peak hour - 08:00-09:00 – Trips Distribution

From \ To	Waterfall	Dev. Access	Killeady	Totals
Waterfall	0	85%	0	
Dev. Access	90%	0	10%	<b>100%</b>
Killeady	0	15%	0	
<b>Totals</b>		<b>100%</b>		

#### 2008 PM peak hour - 16:45-17:45 – Trips Distribution

From \ To	Waterfall	Dev. Access	Killeady	Totals
Waterfall	0	85%	0	
Dev. Access	90%	0	10%	<b>100%</b>
Killeady	0	15%	0	
<b>Totals</b>		<b>100%</b>		



### 4.3 DEVELOPMENT TRIP GENERATION

It is intended to apply for a license to cater for 60,000 tonnes of waste per year. In addition it is proposed to provide a civic amenity facility at the site to cater for private vehicles to dispose of recyclables and general household waste.

#### 4.3.1 Waste Facility

At present the site is currently licensed to accept 23,000 tonnes per year. The traffic generated by this amount of waste to/from the facility during the peak hours is shown below at the development access:

##### Existing Trips to the Development

	Left turn from Local Road	Right turn from Local Road	Totals
AM Peak	6	1	7
PM Peak	6	1	7

##### Existing Trips from the Development

	Left turn onto Local Road	Right turn onto Local Road	Totals
AM Peak	1	9	10
PM Peak	1	10	11

Under the new license it is proposed to accept an extra 37,000 tonnes per year which is approximately 1.6 times the existing amount of waste being accepted at the existing facility. The existing traffic at the development access was multiplied by this factor to determine the proposed traffic that would be generated from accepting this additional amount of waste at the facility.

##### Proposed Additional Trips to the Development

	Left turn from Local Road	Right turn from Local Road	Totals
AM Peak	10	2	12
PM Peak	10	2	12

##### Proposed Additional Trips from the Development

	Left turn onto Local Road	Right turn onto Local Road	Totals
AM Peak	2	14	10
PM Peak	2	16	18

In addition the TRICS database has been used to predict the trip generations to and from the proposed civic amenity facility for the AM and PM peak periods. There is limited information available for these types of development but it is considered that the sites used represent the various types of development that make up the proposed site and are appropriate for this particular development as the TRICS Good Practice Guide has been followed.

#### 4.3.2 Civic Amenity Facility

The TRICS database has been used to predict the trip generations to and from the proposed civic amenity facility for the AM and PM peak periods. In accordance with the TRICS 'Good Practice Guide' the sub-categories within the Civic Amenity Sites main category were assessed and category 12/A – Recycling Centre has been interrogated as the most appropriate example for this type of development. The TRICS data show the number of trips in a peak hour period for 5 different sites. The average trip rates of these 5 sites are shown in below based on a one hectare site:

### Civic Amenity Facility

	Trip rate per ha to development	Trip rate per ha from development
AM Peak	577	581
PM Peak	581	577

For the proposed 5 bay civic amenity facility of 0.022 hectares this would give the following additional trips to and from the existing development onto the local road:

### Trip Generation – 0.022 ha

	Trips from Local Road to development	Trips to Local Road from development	Totals
AM Peak	13	13	26
PM Peak	13	13	26

Using the proposed turning distribution previously outlined in section 4.2 gives the following predicted turning movements at the existing access onto the Local Road:

### Trip Generation – 0.022 ha

	Left turn from the Local Road	Right turn from the Local Road	Totals
AM Peak	11	2	13
PM Peak	11	2	13

### Trip Generation – 0.022 ha

	Left turn onto the Local Road	Right turn onto the Local Road	Totals
AM Peak	1	12	13
PM Peak	1	12	13

Full details of the TRICS information used for the assessments are provided in Appendix E – TRICS Information. Diagrams showing the predicted traffic distribution and development flows for the peak-hour periods are shown in Appendix D – Traffic Flow Diagrams.

#### 4.4.3 Total Development Trip Generation Summary

To summarise, the combined trips that are predicted to be generated to and from the proposed development onto the Local Road are shown in the table below:

### Predicted Turning Flows to the Development

	Left turn from Local Road	Right turn from Local Road	Totals
AM Peak	21	4	25
PM Peak	21	4	25

### Predicted Turning Flows from the Development

	Left turn onto Local Road	Right turn onto Local Road	Totals
AM Peak	3	26	29
PM Peak	3	28	31

Full details of the TRICS information used for the assessments are provided in Appendix E - TRICS information. Diagrams showing the predicted distribution and development flows for the peak-hour periods are shown in Appendix D – Traffic Flow Diagrams

#### 4.4 FUTURE YEAR TRAFFIC GROWTH

The latest NRA Future Traffic Forecasts 2002-2040 have been used to apply growth factors to the existing flows for the future year junction assessments. Factors for Non - National Roads were used. The factors applied are as follows:

<b>Road</b>	<b>2008 Existing</b>	<b>2008 to 2013 5 years after dev. extension</b>	<b>2008 to 2023 15 years after dev. extension</b>
Local Road	1.00	+0.07%	+17.7%

Full summary tables and predicted future traffic flows for 2013 and 2023 for the critical peak periods are included in Appendix C – Traffic Flows Sheets.

5 OPERATIONAL ASSESSMENTS

## 5 Operational Assessments

### 5.1 INTRODUCTION

Capacity assessments have been undertaken for the existing priority junction of the Local Road / Development Access in the a.m. and p.m. peak hours using the computer program PICADY. The following tables summarise the impact of the development in 2013 and 2023, five and fifteen years after the extension of the development.

### 5.2 EXISTING LOCAL ROAD / DEVELOPMENT ACCESS PRIORITY JUNCTION

#### 5.2.1 2008 Existing Situation

The following tables show the predicted RFC values, average queue lengths, average vehicle delay and total delays for the existing development access using the existing traffic flows for 2008. Full PICADY printouts are provided in Appendix F – PICADY Results.

##### AM Peak – 2008 Existing

Approach	Predicted RFC value	Average queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh. Hrs)
Waterfall	-	-	-	0.05
Dev. Access	0.04	0	13	
Killeady	0.01	0	11	

##### PM Peak – 2008 Existing

Approach	Predicted RFC value	Average queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh. Hrs)
Waterfall	-	-	-	0.04
Dev. Access	0.03	0	10	
Killeady	0.01	0	11	

The summary predictions shown in the tables above indicate that there are no queues and minimal delays at the existing access during the busiest peak hours.

#### 5.2.2 2013 With Proposed Extension

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing development access using the predicted traffic flows for 2013 with the proposed extension to the development.

##### AM Peak – 2013 with Extension

Approach	Predicted RFC value	Average queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh. Hrs)
Waterfall	-	-	-	0.25
Dev. Access	0.16	0	15	
Killeady	0.02	0	12	

##### PM Peak – 2013 with Extension

Approach	Predicted RFC value	Average queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh. Hrs)
Waterfall	-	-	-	0.16
Dev. Access	0.13	0	10	
Killeady	0.02	0	12	

The summary predictions shown in the tables above indicate that there will be no queues and minimal delays at this junction during the busiest peak hours in 2013 with the proposed extension to the development.

#### 5.2.3 2023 With Proposed Extension

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing development access using the

predicted traffic flows for 2023 with the proposed extension to the development.

**AM Peak – 2023 with Extension**

Approach	Predicted RFC value	Average queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh. Hrs)
Waterfall	-	-	-	0.26
Dev. Access	0.17	0	15	
Killeady	0.02	0	12	

**PM Peak – 2023 with Extension**

Approach	Predicted RFC value	Average queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh. Hrs)
Waterfall	-	-	-	0.20
Dev. Access	0.13	0	10	
Killeady	0.02	0	12	

The summary predictions shown in the tables above indicate that there will be no queues and minimal delays at this junction during the busiest peak hours in 2023 with the proposed extension to the development.

**5.3 CONCLUSIONS**

Junction analyses to assess the effects of traffic generated by the proposed extension to the development have been undertaken for the existing development access. The analyses show that the existing development access will be able to operate with no queues and minimal delays with the proposed extension to the development in 2013 and 2023.

6 PARKING

## 6 Parking

### 6.1 PARKING PROVISION

The Cork County Development Plan 2003 lists the requirement for car parking in relation to the development use. However a specific land use of 'Waste Transfer Station' is not listed and there is no obvious equivalent land use described.

We have been advised that, at present, there are 22 employees working at the existing development with 30 parking spaces provided within the development. The existing number of parking spaces is sufficient to cover the requirement of the existing demand.

When the extension to the existing development is complete we have been advised that there will be approximately 4 additional employees. This will give a total of 26 employees in the industrial facility when it is fully operational. One dedicated car parking space will be provided for each employee within the development.

The existing number of parking spaces covers the requirement for the existing number of employees and the additional employees for the proposed extension to the development.



## 7 ACCESS SIGHTLINES, PEDESTRIANS, AND INTERNAL LAYOUT

## 7 Access Sightlines, Pedestrians and Internal Layout

### 7.1 ACCESS SIGHTLINES

NRA DMRB TD 41/95 'Vehicular Access to All-Purpose Roads' was used as the standard against which access sight distance was assessed. The alignment of the road in the vicinity of the existing access is poor. There is no centreline marking and the road width is narrow. From visual inspection the design speed of the road was assessed to be 60kph and as such the required sight distance is 90m in both directions along the mainline. This sight distance is achievable to the left but not to the right (to the nearside road edge from a 4.5m setback). 70m sightline is achievable to the right from a 2.4m setback from the road edge. In order to provide a 90m sightline the roadside hedge would need to be removed.

### 7.2 PEDESTRIANS

There are no existing footpaths on the local road. Pedestrian to and from the development are unlikely so provision of pedestrian routes external to the site is not recommended.

### 7.3 INTERNAL LAYOUT

A 5.5m wide service road is provided within the existing development.

Truck parking spaces and a turning area is provided within the existing development. 5 no. bays are proposed within the existing development for the civic amenity facility.

## 8 SUMMARY AND CONCLUSIONS

## 8 Summary and Conclusions

### 8.1 GENERAL

The main conclusions of this study are summarised as follows:

- The existing development access will be able to operate with no queues and minimal delays with the proposed extension to the development in 2013 and 2023.
- The development provides at least one car parking space for each employee.
- A sight distance of 160m is achievable to the left from a 4.5m setback while 70m is achievable to the right from a 2.4m setback from the road edge.

## APPENDICES

## Appendix A – Scoping Report

**Roadplan Consulting Limited**  
**Traffic & Transport Assessment - Local Authority Scoping Study**

Development: Proposed Waste Transfer Station at Waterfall, Co. Cork      Client: Ted O' Donoghue & Sons  
Waste Disposal

Local Authority: Cork Co.Co.      L. A. Contact Name: Ken O'Riordan

Prepared By: George Frisby      Planning No:      Date: 30-07-08

Ref.	Item	Requirements
<b>1</b>	<b><u>The Development</u></b>	
1.1	Size and description of proposed development:	The development consists of an existing Waste Transfer Facility and is not being extended. The Waste Transfer Facility is currently licensed to accept 23,000 tonnes of waste, however last year this figure was approx 31,000 tonnes. As the facility has exceeded 25,000 tonnes it now requires a waste licence review and an EIS is required under the Planning & Development Act 2001.
1.2	Description of existing land use:	Existing Waste Transfer Facility
1.3	Will existing land use be relocated within or off site?	No.
1.4	When will the site become fully operational?	The site is fully operational at present
1.5	Are there significant phases to the development?	No
<b>2</b>	<b><u>Traffic</u></b>	
2.1	Traffic Surveys proposed:	Peak hour counts 07.30am -9.30am and 4.30pm – 6.30pm at the access to the existing development
2.2	Proposed traffic generation rates:	No additional traffic will be generated as the facility is already operating at its proposed limits.

Ref.	Item	Requirements
2.3	Modal split of the proposed development?	Existing split to be used
2.4	Traffic distribution and assignment methodology	Existing distribution pattern will be used.
2.5	Extent of pass-by, multi-purpose trips and internal trips	none
2.6	Development peak hours: Background traffic peak hours: Critical time of assessment:	Weekly am and pm peak periods. Weekly am and pm peak periods. Weekly am and pm peak periods.
2.7	Traffic growth factors:	NRA Non-National factors for background traffic growth.
<b>3</b>	<b><u>Assessments</u></b>	
3.1	Link and Junction assessment methods	DMRB for links and TRL programmes for junctions.
3.2	Assessment years	Year of opening (2008), 5 years and 15 years after year of opening.
3.3	Committed developments;	To be advised
3.4	Sensitivity testing of adjacent zoned areas	None.
3.5	What will be the extent of the assessment?	Existing access onto the local road
<b>4</b>	<b><u>Roads and Accesses</u></b>	
4.1	Access proposals	Priority Junction
4.2	Are links or junctions congested?	To be determined from site survey.
4.3	Design Speeds and Visibility standards:	To Posted Speed limits. Visibility standards as set out in DMRB.
4.4	Any proposed roads developments	No.
<b>5</b>	<b><u>Safety</u></b>	
5.1	Is a Safety Audit required	No.
5.2	Is a Construction Traffic Management Plan, a Mobility Management Plan or other required?	No
5.3	Footpath provision	To be determined from site visit



Ref.	Item	Requirements
5.4	Cycle provisions	None.
5.5	Public transport facilities:	None
<b>6</b>	<b><u>Parking</u></b>	
6.1	Parking requirements Disabled parking	As existing
<b>7</b>	<b><u>Other</u></b>	
7.1	Are there any other special circumstances relevant to this proposal?	No

## Appendix B – Site Layout

REFER TO MAIN EIS SECTION INFRASTRUCTURE DRAWING 1.

## Appendix C – Traffic Flow Sheets

## Development Access onto the Local Road - AM Peak

### 2008 AM Existing

From \ To	Waterfall	Dev. Access	Killeady	Totals
Waterfall	0	6	7	13
Dev. Access	9	0	1	10
Killeady	15	1	0	16
<b>Totals</b>	<b>24</b>	<b>7</b>	<b>8</b>	<b>39</b>

### 2013 AM No Development (Growth 7%)

From \ To	Waterfall	Dev. Access	Killeady	Totals
Waterfall	0	6	7	13
Dev. Access	9	0	1	10
Killeady	15	1	0	16
<b>Totals</b>	<b>24</b>	<b>7</b>	<b>8</b>	<b>40</b>

### 2013 AM Development Flows

From \ To	Waterfall	Dev. Access	Killeady	Totals
Waterfall	0	21	0	21
Dev. Access	26	0	3	29
Killeady	0	4	0	4
<b>Totals</b>	<b>26</b>	<b>25</b>	<b>3</b>	<b>54</b>

### 2013 AM With Development

From \ To	Waterfall	Dev. Access	Killeady	Totals
Waterfall	0	27	7	34
Dev. Access	35	0	4	39
Killeady	15	5	0	20
<b>Totals</b>	<b>50</b>	<b>32</b>	<b>11</b>	<b>94</b>

### 2023 AM No Developments (Growth 17.7%)

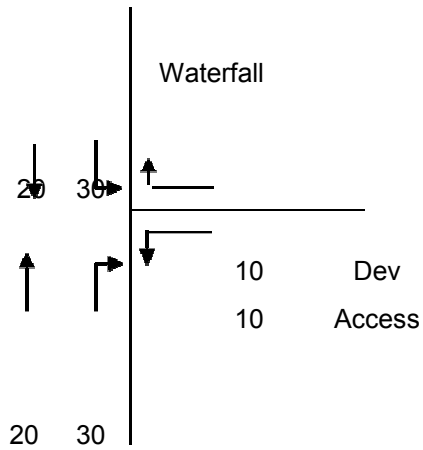
From \ To	Waterfall	Dev. Access	Killeady	Totals
Waterfall	0	7	8	15
Dev. Access	11	0	1	12
Killeady	18	1	0	19
<b>Totals</b>	<b>28</b>	<b>8</b>	<b>9</b>	<b>46</b>

**2023 AM With Development**

From \ To	Waterfall	Dev. Access	Killeady	<b>Totals</b>
Waterfall	0	28	8	<b>36</b>
Dev. Access	37	0	4	<b>41</b>
Killeady	18	5	0	<b>23</b>
<b>Totals</b>	<b>54</b>	<b>33</b>	<b>12</b>	<b>100</b>

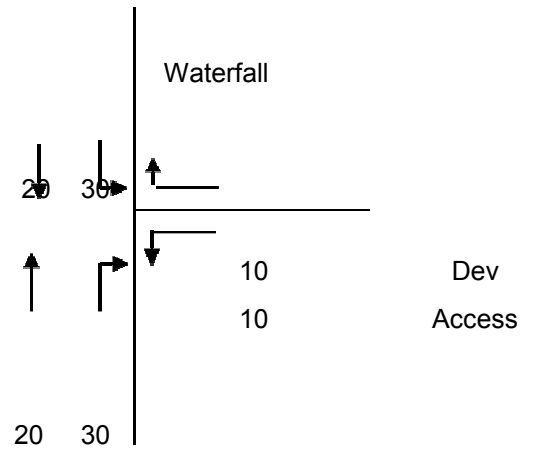
## Appendix D – Traffic Flow Diagrams

2008 Existing AM Peak Flows



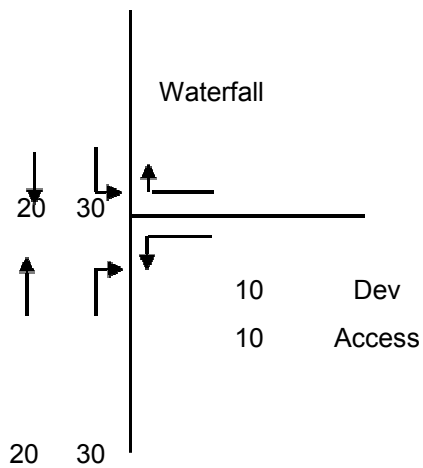
Killeady

2008 Existing PM Peak Flows



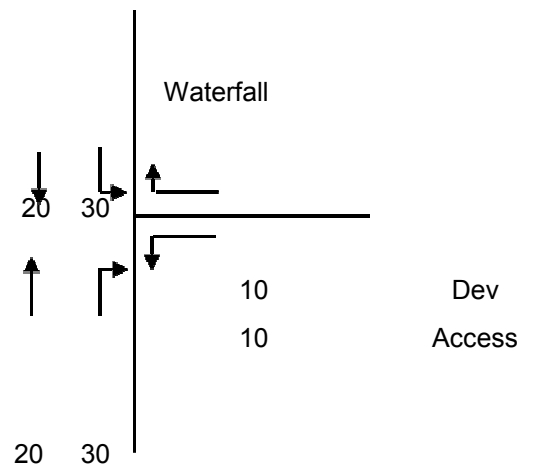
Killeady

Dev Flows AM Peak



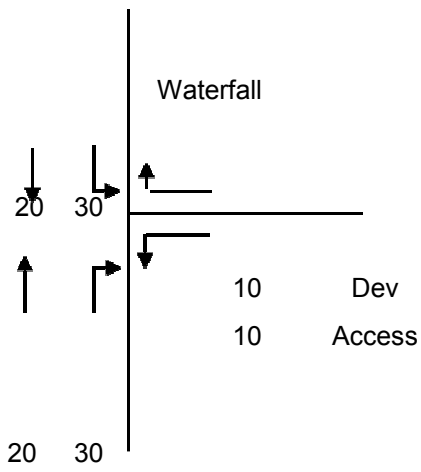
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Dev Flows PM Peak



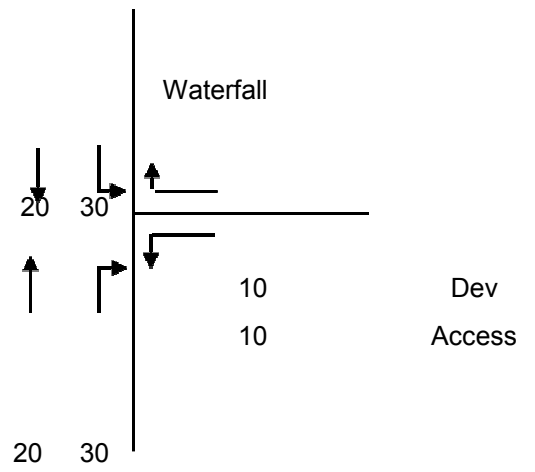
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2013 AM Peak No Dev



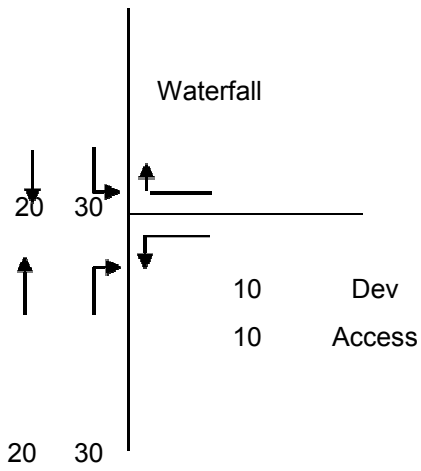
Killeady

2013 PM Peak No Dev



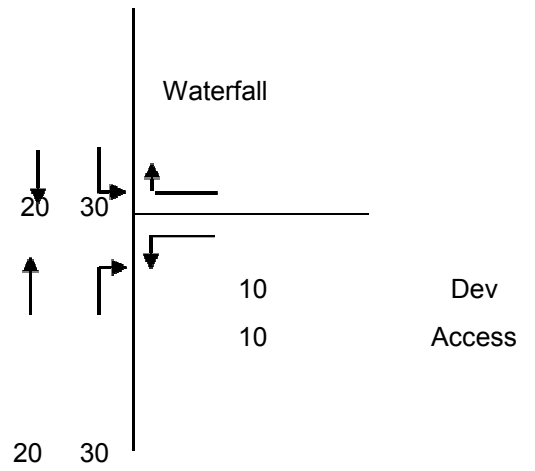
Killeady

2013 AM Peak With Dev



Killeady

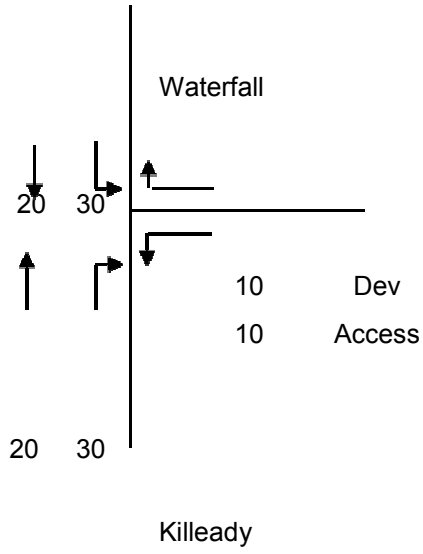
2013 PM Peak With Dev



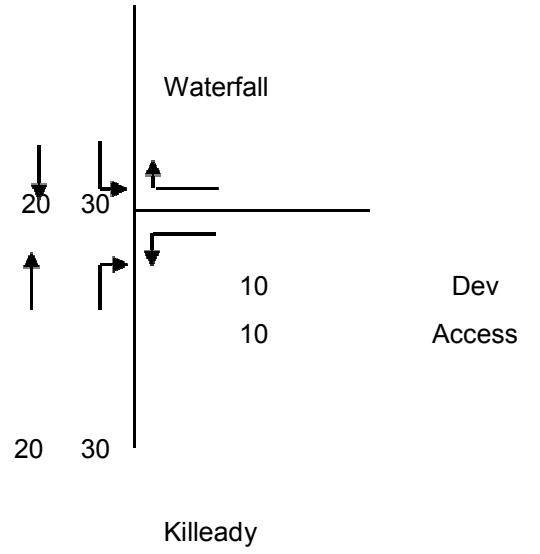
Killeady



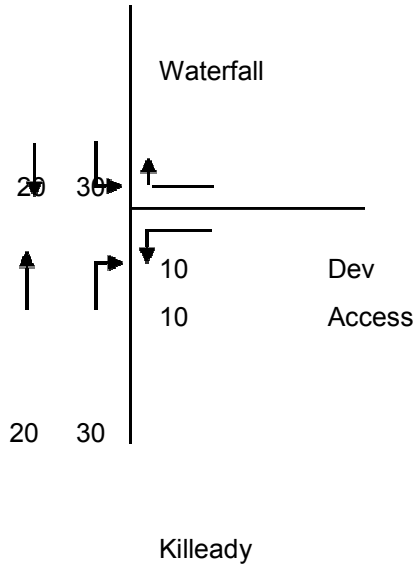
2023 AM Peak No Dev



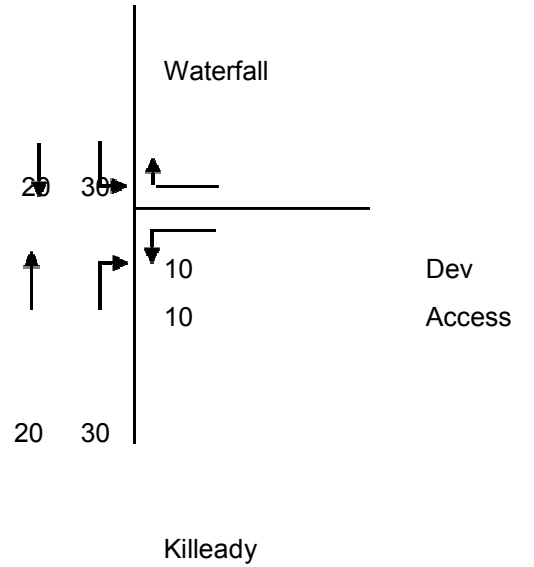
2023 PM Peak No Dev



2023 AM Peak With Dev



2023 PM Peak With Dev



## Appendix E – TRICS Information

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 12 - CIVIC AMENITY SITES  
Category : A - RECYCLING CENTRES

**VEHICLES**

Selected regions and areas:

<b>02</b>	<b>SOUTH EAST</b>	
	HC HAMPSHIRE	3 days
<b>09</b>	<b>NORTH</b>	
	TW TYNE & WEAR	1 days
<b>11</b>	<b>SCOTLAND</b>	
	EB CITY OF EDINBURGH	1 days

**Main parameter selection:**

Parameter: Site area  
Range: 0.10 to 2.60 (units: hect)

Date Range: 01/01/00 to 25/11/07

Selected survey days:

Saturday	2 days
Sunday	3 days

Selected survey types:

Manual count	3 days
Directional ATC Count	2 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	3
Free Standing (PPS6 Out of Town)	1

Selected Location Sub Categories:

Residential Zone	1
Built-Up Zone	1
Out of Town	1
No Sub Category	2

LIST OF SITES relevant to selection parameters

<b>1</b>	<b>EB-12-A-01</b> CRAIGS ROAD TURNHOUSE EDINBURGH Total Site area:	<b>RECYCLING CENTRE, EDINBURGH</b>	<b>CITY OF EDINBURGH</b>
		0.51 hect	
<b>2</b>	<b>HC-12-A-11</b> GRANGE ROAD  GOSPORT Total Site area:	<b>RECYCLING CENTRE, GOSPORT</b>	<b>HAMPSHIRE</b>
		0.90 hect	
<b>3</b>	<b>HC-12-A-12</b> SHAMBLEHURST LANE HEDGE END NEAR SOUTHAMPTON Total Site area:	<b>RECYCLING CEN., NR STHAMPTON</b>	<b>HAMPSHIRE</b>
		0.40 hect	
<b>4</b>	<b>HC-12-A-13</b> GARNIER ROAD ST CROSS WINCHESTER Total Site area:	<b>RECYCLING CEN., WINCHESTER</b>	<b>HAMPSHIRE</b>
		0.70 hect	
<b>5</b>	<b>TW-12-A-01</b> WALKER ROAD BYKER NEWCASTLE Total Site area:	<b>RECYCLING CENTRE, NEWCASTLE</b>	<b>TYNE &amp; WEAR</b>
		0.10 hect	

RANK ORDER for Land Use 12 - CIVIC AMENITY SITES/A - RECYCLING CENTRES

**VEHICLES**

Ranking Type: **TOTALS** Time Range: 10:00-11:00  
 Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

Rank	Site-Ref	Description	Area	AREA	Day	Date	Trip Rate (Sorted by Totals)			Travel Plan
							Arrivals	Departures	Totals	
1	TW-12-A-01	RECYCLING CENTRE, NEWCAS	TYNE & WEAR	0.10	Sun	22/06/03	210.000	210.000	420.000	
2	EB-12-A-01	RECYCLING CENTRE, EDINBU	CITY OF EDINBURGH	0.51	Sat	14/05/05	174.510	184.314	358.824	
3	HC-12-A-12	RECYCLING CEN., NR STHAM	HAMPSHIRE	0.40	Sun	28/07/02	110.000	110.000	220.000	
4	HC-12-A-11	RECYCLING CENTRE, GOSPOR	HAMPSHIRE	0.90	Sun	28/07/02	94.444	95.556	190.000	
5	HC-12-A-13	RECYCLING CEN., WINCHEST	HAMPSHIRE	0.70	Sat	24/05/03	45.714	45.714	91.428	



## **APPENDIX VI**

### **NOISE IMPACT REPORT**

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**REPORT ON ANNUAL NOISE MONITORING  
FOR  
TED O'DONOGHUE AND SONS LTD,  
WATERFALL, CORK**

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**PREPARED FOR COMPLIANCE WITH CONDITION 6.11.1 OF  
EPA WASTE LICENCE REG. NO. W0214-01**

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# CONTENTS

- 1.0 INTRODUCTION
  
- 2.0 SURVEY DETAILS
  - 2.1 Measurements
    - 2.1.1 Equipment
    - 2.1.2 Weather Conditions
  
  - 2.2 Permitted Noise Levels
  - 2.3 Noise Terminology
  - 2.4 Noise Monitoring Locations
  
- 3.0 RESULTS
  - 3.1 Ambient Measurements
  
- 4.0 OBSERVATIONS
  
- 5.0 CONCLUSIONS

APPENDIX I: Noise Monitoring Spectrum

APPENDIX II: Noise Monitoring Location Map

## **1.0 INTRODUCTION**

Glenside Environmental was requested by O'Donoghue and Sons Waste Disposal Ltd to conduct an annual noise survey at their premises at Knockpoge, Waterfall, Co. Cork. This survey was conducted to comply with the requirements of the Condition 6.11.1 Noise of Waste Licence W0214-01 for the facility. This condition states;

*The licensee shall carry out a noise survey of the site operations annually. The survey programme shall be undertaken in accordance with the methodology specified in the 'Environmental Noise Survey Guidance Document' as published by the Agency.*

## **2.0 SURVEY DETAILS**

The following are the details of the survey as carried out at Ted O' Donoghue and Sons Waste Disposal Ltd premises on the 24<sup>th</sup> April 2008.

### **2.1 Measurements**

Patrick Power B.Sc MIOA carried out measurements at two selected locations at the site boundaries. All measurements were carried out in accordance with *ISO 1996: Description and Measurement of Environmental Noise* and *EPA Noise Survey Guidance Document*.

#### **2.1.1 Noise Monitoring Instrumentation**

A Bruel and Kjaer Type 2260 integrating sound level meter was used to measure noise levels at two selected site boundaries. The meter was calibrated before and after the monitoring exercise. The meter was set in fast weighting with A-weighted frequency filter. Noise measurements were recorded in 30 minute periods.

#### **2.1.2 Weather Conditions**

On the 24th April 2008, weather conditions were recorded with a temperature of 16<sup>o</sup>C, and winds at 0.6 m/s from a southerly direction.

## 2.2 Permitted Noise Limits

The waste permit for the facility stipulates that site noise levels should not exceed 55dB(A) at the site boundaries.

## 2.3 Noise Terminology

The noise monitoring results for the noise monitoring locations are provided in Table 3.1.

In order to understand the terms used, some definitions are outlined as follows:

- L<sub>AF10</sub>** Refers to those levels in the Top 10 percentile of the sampling interval; it is the level, which is exceeded for 10% of the measurement period. It is used to determine the intermittent high noise level features of locally generated noise.
- L<sub>AF90</sub>/L<sub>AF95</sub>** Refers to those levels in the lower 90/95 percentile of the sampling interval; it is the level which is exceeded for 90%/95% of the measurement period. It is used to estimate a background level.
- L<sub>Aeq</sub>** The average level recorded over the sampling period. The closer the L<sub>Aeq</sub> value is to either the L<sub>AF10</sub> or L<sub>AF90</sub> value indicates the relative impact of the intermittent sources and their contribution. The relative spread between the values determines the impact of noise on the background.

## 2.4 Noise Monitoring Locations

The following is a description of the noise sensitive locations monitored during the noise survey and the sources of noise in the area at the time.

Monitoring Location	Description
N1	Adjacent O Donoghue family residence
N2	South east corner of site adjacent transfer station and workshop
N3	North west corner of site, close to trailer parking area
N4	North east corner of site, close to timber shredder
N5	At sensitive dwelling, north east of site

### 3.0 RESULTS

#### 3.1 Ambient Measurements

The results of the noise monitoring at locations N1-N5 is presented in Table 3.1.

Table 3.1 Ambient Measurements (Locations N1-N5)

Monitoring Location	Time and Date	L <sub>Aeq</sub> , dB(A)	L <sub>A90</sub> , dB(A)	L <sub>A10</sub> , dB(A)	Main Noise Sources
N1	24/04/08 10:18	55.7	41.4	51.4	Trucks entering facility, local traffic.
N2	24/04/08 11:23	55.2	40.4	49.8	Vehicle movements. Noise from transfer building.
N3	24/04/08 12:25	62.7	50.0	64.0	Noise from transfer building, site truck movements
N4	24/04/08 14:31	61.9	45.4	65.6	Traffic on local road, no site noise
N5	24/04/08 15:35	66.4	49.6	65.2	Traffic on local road, no site noise

Measurements at location N1 were recorded adjacent to the O' Donoghue family residence adjacent to the entrance to the facility. Intermittent traffic noise from the adjacent public road contributed to the ambient levels. Two trucks entered the facility during the 30-minute monitoring period. Noise from the workshop was audible at this monitoring location. The L<sub>Aeq</sub> average noise level was recorded at 57.7dB(A).

Noise measurements at N2 and N3 were recorded at the north-western and north-eastern corners of the site respectively. Site vehicle movements and the mechanical grab within the transfer station building contributed to the annual were the main noise sources. The average noise levels were recorded at N2 and N3 were 55.2dB(A) and 62.7dB(A) respectively. The level at N3 was influenced by a truck idling close to the monitoring position.

- The earthen mound at the north-western boundary provides significant landscape and acoustic screening of the activities in the facility. Tree cover along the eastern boundary also alleviates the noise impact to the west.

- The noise from the facility was not considered a major source at locations N4 and N5. Intermittent traffic movements were the main noise source. There was no activity audible from the waste facility at locations N4 and N5.

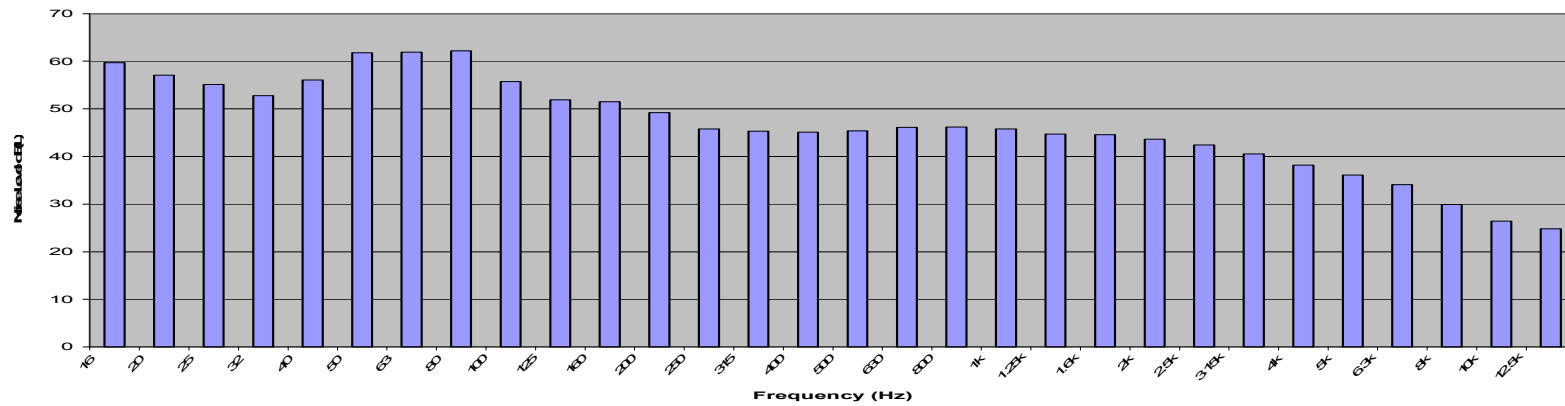
From the above it can be concluded that the O' Donoghue waste transfer facility is in compliance with the requirements of the waste permit for the facility. The facility is not a source of nuisance to surrounding sensitive areas. All waste segregation activity takes place within the waste transfer building. Truck movements are the main noise associated with the operation of the business. At local dwellings (N1, N4 and N5) there is minimal noise contribution from the facility.

#### **4.0 CONCLUSIONS**

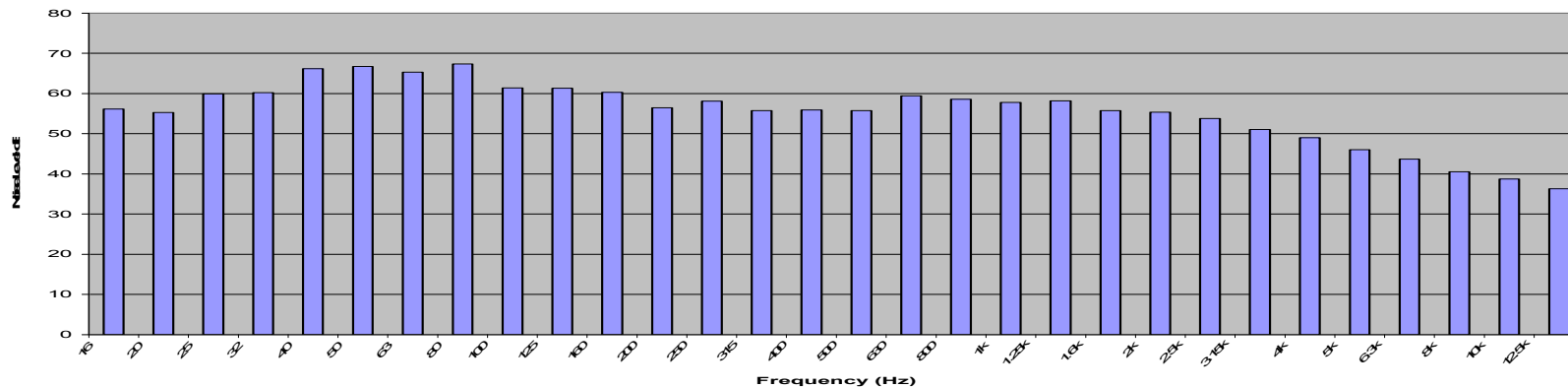
From the above it can be concluded that the O' Donoghue waste transfer facility is in compliance with the requirements of the waste permit for the facility. The facility is not a source of nuisance to surrounding sensitive areas. All waste segregation activity takes place within the waste transfer building. Truck movements are the main noise associated with the operation of the business.

**APPENDIX 1**  
**NOISE MONITORING SPECTRUM**

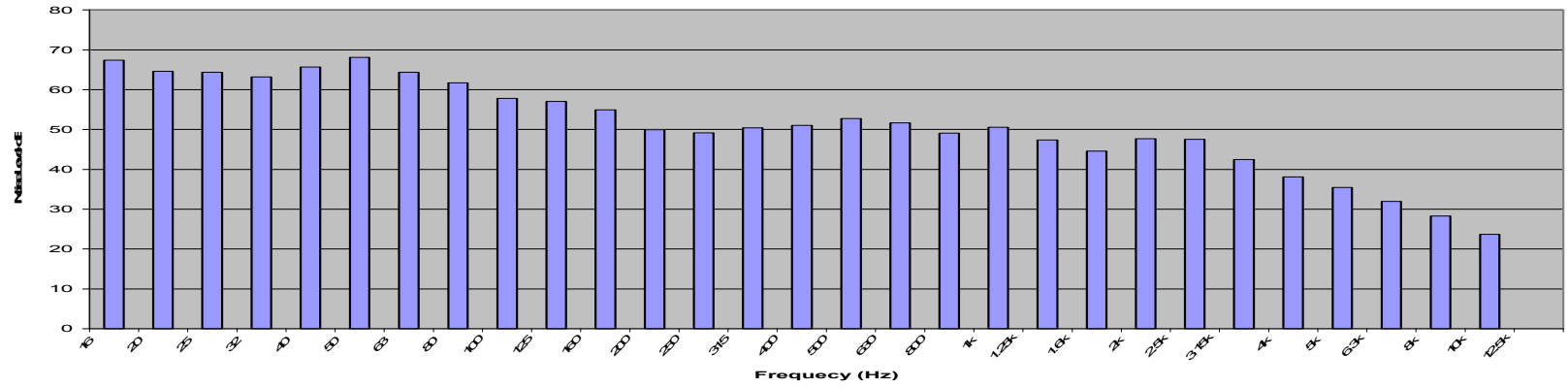
**N1 Daytime Noise Spectrum**



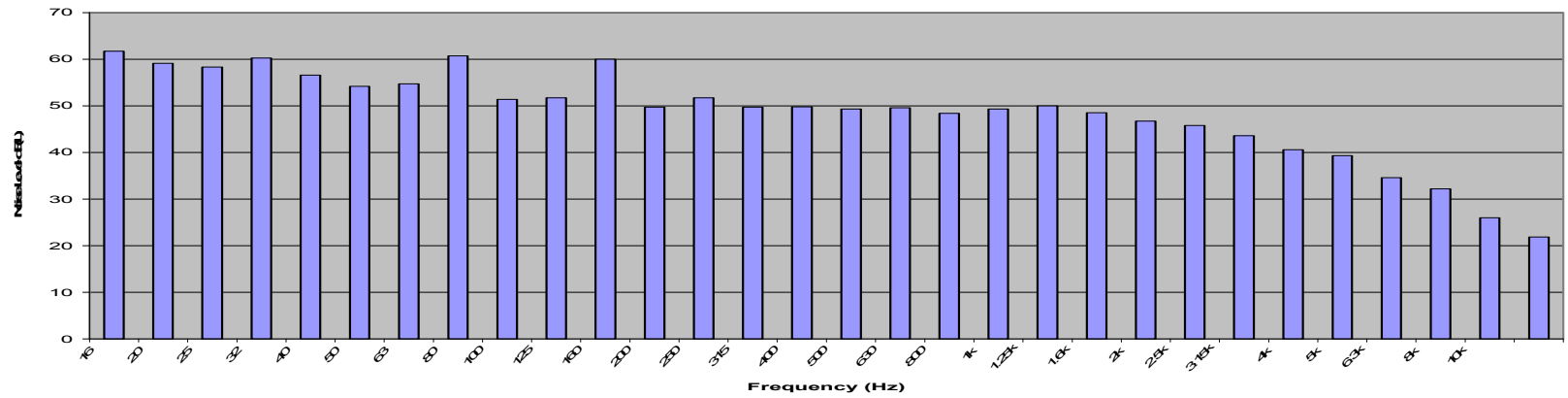
**N2 Daytime Noise Spectrum**



**N3 Daytime Noise Spectrum**

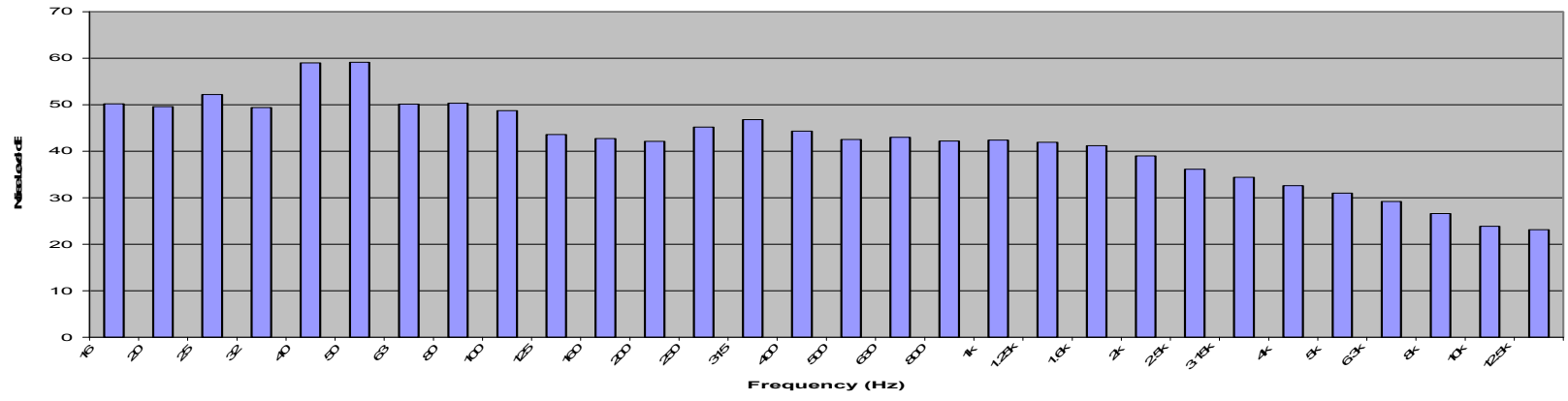


**N4 Daytime Noise Spectrum**





N8 Daytime Noise Spectrum



**APPENDIX II:  
NOISE MONITORING LOCATION MAP**

**APPENDIX VII**  
**ECOLOGY**

## EVALUATION OF ECOLOGICAL IMPORTANCE AND ASSESSMENT OF IMPACT SIGNIFICANCE

### Introduction

While the EPA *Guidelines* (EPA, 1995) provide a defined terminology for describing impact significance, for ecological assessments, this terminology has not proved to have been of much use in practise: a review of 28 recent Environmental Impact Statements found that only one of these used this terminology (Gittings, 1998). In fact, a terminology specifically defined with reference to ecology is required for description of ecological impact significance. The following terminology has been developed on this basis and is used to describe impact significance in this EIS.

The impact significance is a combined function of the value of the affected feature (its ecological importance), the type of impact and the magnitude of the impact.

### Evaluation of Ecological Importance

Table 1: Criteria for assessing ecological importance

Importance	Criteria
International	Sites which qualify for designation as SACs or SPAs
National <sup>1</sup>	Sites which qualify for designation as NHAs Sites which hold Red Data Book (Curtis and McGough, 1988) plant species Sites which hold nationally rare invertebrate species, subject to an evaluation as to whether their known status may be largely due to under-recording Sites which hold nationally rare vertebrate species (as defined by Whilde, 1993) Sites which hold nationally important bird populations (defined as 1% of the national population <sup>2</sup> ; Sheppard, 1993)
County	Sites which hold nationally scarce plant species (recorded from less than 65 10 km squares <sup>2</sup> ), unless they are locally abundant Sites which hold nationally scarce invertebrate species (recorded from less than 65 10 km squares <sup>2</sup> ), unless they are locally abundant and subject to an evaluation as to whether their known status may be largely due to under-recording Sites which hold regionally scarce vertebrate species Sites which hold semi-natural habitats likely to be of rare occurrence within the county Sites which hold the best examples of a semi-natural habitat type within the county
High Local Importance	Sites which hold semi-natural habitats and/or species likely to be of rare occurrence within the local area Sites which hold the best examples of a high quality semi-natural habitat type within the local area
Local Importance	Sites which hold high quality semi-natural habitats
Local Value	Any semi-natural habitat

<sup>1</sup> the island of Ireland.

<sup>2</sup> based pro-rata on the British criteria of 100 10 km squares (JNCC, 1995).

There is no systematic evaluation of ecological importance below a national scale in Ireland. Even for sites of national importance (i.e. pNHAs), there are no formal criteria available for their evaluation. The criteria shown are based on an international-national-county-local scale. The local scale is approximately equivalent to one 10 km square but can be operationally defined to reflect the character of the area of

interest. For example, for riparian features it could be a section of a river catchment. Because most sites will fall within the local scale, this is sub-divided into high local importance, local importance and local value.

### Assessment of Impact Type and Magnitude

Criteria for assessing impact type and magnitude are presented in Table AB.2 and AB.3 respectively.

Table AB.2: Criteria for assessing impact type

Impact type	Criteria
Positive impact:	A change to the ecology of the affected feature which improves its conservation status.
Negative impact:	A change to the ecology of the affected feature which reduces its conservation status.

Table AB.3: Criteria for assessing impact magnitude

Impact magnitude	Definition
No change:	No discernible change in the ecology of the affected feature.
Imperceptible Impact:	A change in the ecology of the affected site, the consequences of which are strictly limited to within the development boundaries.
Slight Impact:	A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary, but these consequences are not considered to significantly affect the distribution and/or abundance of species or habitats of conservation importance <sup>1</sup> .
Moderate Impact:	A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary. These consequences are considered to significantly affect the distribution and/or abundance of species or habitats of conservation importance.
Substantial Impact:	A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary. These consequences are considered to significantly affect species or habitats of high conservation importance and to potentially affect the overall viability of those species or habitats in the wider area <sup>2</sup> .
Profound Impact:	A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary. These consequences are considered to be such that the overall viability of species or habitats of high conservation importance in the wider area <sup>2</sup> is under a very high degree of threat (negative impact) or is likely to increase markedly (positive impact).

<sup>1</sup> it is not possible to define specific numerical thresholds, as different species/habitat have varying degrees of resilience to ecological perturbation.

<sup>2</sup> i.e., the area relevant to the assessed importance of the feature