



ANNUAL ENVIRONMENTAL REPORT

For

**BALBANE LANDFILL SITE
Co. Donegal**

Waste Licence Reference: W0090-1

By

Donegal County Council

For

Environmental Protection Agency

Reporting Period:

January to December 2012

April 2013

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1 INTRODUCTION

- 1.1 This Annual Environmental Report (AER) has been prepared to meet the requirements of Condition 11.5 of Waste Licence 90-1 for Balbane Landfill Site, and includes the information listed in Schedule F of the Licence.
- 1.2 Balbane Landfill Site is located approximately 6.5 km north of Killybegs, in the townland of Balbane, County Donegal. The landfill covers an area of approximately 2.9 hectares. The landfill site was developed to operate on the dilute and disperse principle whereby leachate generated by rainfall was allowed to disperse into the surrounding environment.
- 1.3 Donegal County Council submitted an application to the Environmental Protection Agency for the continued operation of the landfill site, as required by the Waste Management (Licensing) Regulations 1997. On the 13th of November 2001 the Environmental Protection Agency granted the Council a Waste Licence (registration number 90-1) for the facility, in accordance with the Third Schedule of the Waste Management Act, 1996.

2 REPORT PERIOD

- 2.1 The report period for this Annual Environmental Report (AER) is from January to December 2012. The site closed in January 2004.

3 WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

- 3.1 In accordance with Condition 1 of the waste licence only those waste types and quantities of waste listed in Schedule A shall be disposed of at the facility unless the prior agreement of the Agency has been obtained. The maximum annual tonnage of individual waste types for disposal is listed in Schedule A of the Waste Licence at 7,500 tonnes from the date of grant of licence for municipal waste and 70,000 tonnes of inert material of the purpose of restoration.
- 3.2 The licensed waste disposal activities in accordance with the Third Schedule of the waste Management Act, 1996 are restricted to those listed as follows:
- **Class 1:** Deposit on, in or under land (including landfill).
This activity is limited to deposition of municipal and inert waste.
 - **Class 4:** Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons. This activity is limited to leachate collection and treatment.
 - **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 leachate collection and storage prior to treatment.
- 3.3 When operational, access to site was controlled by the Site Manager. All persons availing of the site had to report to the site office at the time of entering and leaving the landfill site. Access was restricted to those times when staff were on duty and the site is now secured to prevent unauthorised entry.

4 QUANTITY AND COMPOSITION OF WASTE RECEIVED AND DISPOSED OF DURING THE REPORTING PERIOD AND EACH PREVIOUS YEAR.

4.1 A temporary computerised weighbridge was installed at the site in 2002 and this was used to record waste data figures until the facility closed in January 2004. No waste has been received at the site since closure. Annual figures for the period 1998-2012 are shown in Table 4.1.

Table 4.1 Waste Quantities Accepted (tonnes)

Waste Types	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Municipal Waste (20 03 01)	3228	3716	4721	4107	5069	2790	187	0	0	0
Street Cleanings (20 03 03)						57	3	0	0	0
	2008	2009	2010	2011	2012					
Municipal Waste (20 03 01)	0	0	0	0	0					
Street Cleanings (20 03 03)	0	0	0	0	0					

5 SUMMARY REPORT ON EMISSIONS, RESULTS AND INTERPRETATION OF ENVIRONMENTAL MONITORING

5.1 ENVIRONMENTAL MONITORING REQUIREMENTS

The locations, frequencies and parameters which are required to be monitored at Balbane Landfill Site are specified in Schedule F of the Waste Licence. Details of these are shown on Drawing Nos 5234.40 /107 and 5234.40/06 and are given in Appendix A.

5.2 MONITORING RESULTS

Results of monitoring for the period for surface water, groundwater, leachate and gas are contained in tabular and graphical format in Appendix B.

5.3 GROUNDWATER

5.3.1 Results are assessed against the Maximum Admissible Concentrations (MAC's) set out in the EC Quality of Water for Human Consumption Regulations 1988, the EC Drinking Water Regulations 2000 and the EPA Interim Report, Towards Setting Guideline Values for the Protection of Groundwater in Ireland. Groundwater locally flows in a south-easterly direction and GW1 reflects baseline conditions upstream of the site. GW4 & GW2 are downstream but in / adjacent to waste. It should be noted that BH2 is also located within waste and is considered to be a leachate well.

5.3.2 Results from this period indicate that leachate continues to be released from the waste body into the local groundwater environment although the close proximity of the downstream wells to waste should be taken into account. Levels are comparable to those detected in the last reporting period.

5.4 SURFACE WATER

5.4.1 Surface water results are assessed against the Surface Water Quality Standards (SWQS) as laid out in the EC Quality of Surface Water Intended for the Abstraction of Drinking Water Regulations 1989. S1 is upstream of the site, whilst S4 – S7 inclusive are downstream. S2 and S3 were relocated and relabelled at the request of the EPA.

5.4.2 Surface water results indicate that leachate continues to be released into the environment at levels comparable to those detected during the last period. There is also evidence of upstream contamination in August. Surface water levels improve rapidly downstream and appear to be dependent upon rainfall conditions (probably reflective of the size of the baseflow in the watercourse).

5.5 LEACHATE

5.5.1 Leachate quality varies during the lifetime of a landfill depending on the stage of decomposition of waste. Results from BH2, the leachate well are presented in Appendix B. Some characteristic parameters have been compared with those of 'typical' raw leachate in Table 5.1 below.

Table 5.1 Raw Leachate Concentrations 2012

PARAMETER	Balbane Landfill Site		From 30 samples from UK/Irish landfills accepting domestic waste Results in mg/l		
	Min.Conc	Max.Conc	Min.Conc	Max.Conc	Mean
Ammonia (mg/N)	0.15	12.0	<0.2	1700	491
BOD	0.3	1.3	4.5	>4800	>834
COD	20	48	<10	33,700	3078
Chloride (mg/l)	225	246	27	3410	1256
Iron (mg/l)	n/a	n/a	0.4	664	54.4
Potassium (mg/l)	n/a	n/a	2.7	1480	491
Sodium (mg/l)	n/a	n/a	12	3000	904
TON (mg/l N)	<0.01	<0.01	/	/	/
Conductivity (µS/cm)	1014	1410	503	19,200	7789
pH (pH units)	6.1	6.4	6.4	8.0	7.2

5.5.2 Table 5.1 compares raw leachate concentrations detected at Balbane with 'typical leachate composition from 30 samples from UK/Irish Landfills accepting mainly domestic waste' (taken from EPA Manual for Landfill Operational Practices). Parameters measured all compare well with typical leachate ranges shown and with the results issued last period.

5.6 PERIMETER GAS MONITORING

The gas monitoring peizometers on the site at Balbane are located within waste, and are not perimeter wells. The results (as contained in Apendix B) are indicative of methanogenic gas processes that would be occurring under anaerobic conditions.

5.7 DUST MONITORING

As previously agreed with the Agency, monitoring of dust ceased when the site closed. When any activity commences, such as restoration works for example, a dust-monitoring programme will be resumed.

5.8 METEOROLOGICAL MONITORING

Meteorological data is contained in Appendix C.

6 VOLUME OF LEACHATE PRODUCED AND VOLUME OF LEACHATE TRANSPORTED DISCHARGED OFF SITE

- 6.1 A water balance calculation has been undertaken and is presented in Appendix C. It estimates that 8472m³ of leachate will have been generated from this waste body during the period. Due to a lack of collection infrastructure there is no leachate transported off site. Correspondingly it is assumed that all leachate generated disperses into the surrounding environment.

7 REPORT ON DEVELOPMENT WORK UNDERTAKEN DURING THE REPORTING PERIOD, AND A TIME SCALE FOR THOSE PROPOSED DURING THE COMING YEAR.

- 7.1 The restoration of this landfill has been delayed due to lack of funds available to Donegal County Council as a result of the removal of grant funding for such projects. The Council met with the Agency in November 2009 and discussed this issue. The Agency requested that the Council investigate the viability of carrying out some focused works to address leachate emissions, this being the significant environmental risk from the site. This was carried out and a proposal for leachate treatment submitted to the Agency for consideration in 1st June 2010. The Council received a response from the Agency in May 2011 citing Condition 6.4.1 of the Licence and requesting a demonstration that leachate discharges will have no significant impact on receiving waters. This remains under consideration due to the complexities associated with fulfilling this request. Since this time the Council has been investigating the viability of bio-technologies as engineering techniques to remediate landfills. A counter proposal was outlined to the Agency on 6th November 2012 proposing recirculation of leachate through willow planted over the waste body. The Agency has requested that an SEW be prepared and submitted. Work on this is currently being finalised.

8 REPORT ON RESTORATION OF COMPLETED CELLS / PHASES

- 8.1 The Restoration and Aftercare Plan was submitted to the Agency in October 2004 and approved in November 2004.
- 8.2 Of Donegal County Council's five closed landfill sites Balbane was scheduled for restoration fourth and next. See also comments in Section 7 above.

9 SITE SURVEY SHOWING EXISTING LEVELS OF THE FACILITY AT THE END OF THE REPORTING PERIOD

- 9.1 A topographical survey of the site was last carried out in December 2002. This was included in the 2002 AER.

10 ANNUAL WATER BALANCE CALCULATION AND INTERPRETATION

A water balance calculation has been undertaken and is presented in Appendix C. The calculation for monthly water balance is as follows

$$L_o = [ER (A) + LW + IRCA + ER (I)] - [aW]$$

Where

L_o = leachate produced (m^3)

ER = effective rainfall

A = area of cell (m^2)

LW = liquid waste

IRCA = infiltration through restored areas and capped areas (m)

a = absorptive capacity of waste (m^3/t)

W = weight of waste deposited

I = surface area of lagoons (m^2)

11 REPORTED INCIDENTS AND COMPLAINTS SUMMARIES.

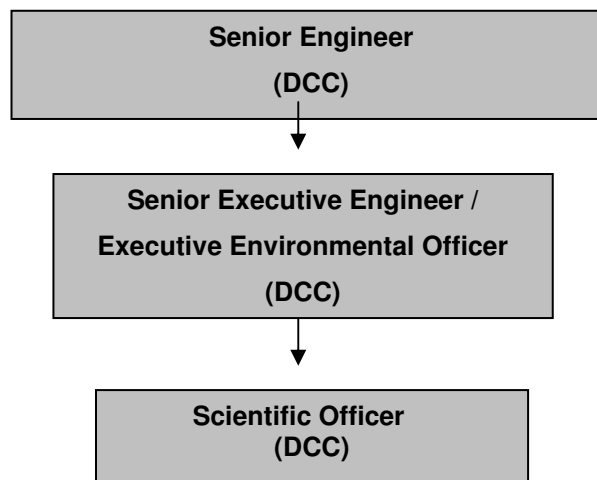
- 11.1 Other than the reporting of on-going emissions exceedances detected in the routine monitoring programme, no incidents occurred during the monitoring period and no complaints were received.

12 REVIEW OF NUISANCE CONTROLS

- 12.1 As the facility is no longer operational, all areas formerly used for the placement of municipal waste have been covered by clay and topsoil. There has been a reduction in the incidence of nuisances resulting from this. However, precautionary measures are employed to ensure the detection and appropriate management of any nuisances that may arise. As part of the Environmental Management System for the site a procedure has been developed to provide for regular inspections of the site as part of the quarterly monitoring programme. Should this inspection reveal the incidence of any type of nuisance (vermin, litter, dust, birds or odours) then appropriate action is initiated.

13 REPORT ON FINANCIAL PROVISIONS MADE UNDER THIS LICENSE, MANAGEMENT AND STAFFING STRUCTURE OF THE FACILITY AND A PROGRAMME FOR PUBLIC INFORMATION

- 13.1 Donegal County Council being a local authority is able to provide the necessary finances to ensure the proper management, development and restoration of Balbane Landfill Site.
- 13.2 Overall responsibility for the ongoing operations and development of the landfill site is held by the Senior Engineer. The Senior Engineer is assisted by a Senior Executive Engineer and an Executive Environmental Officer assigned to the Environment Section of Donegal County Council.
- 13.3 As part of the Environmental Management System (EMS) for the site, a communication programme (in accordance with Condition 2.8 of waste licence) is provided in Section 2 of the EMS to ensure that members of the public can obtain information concerning the environmental performance of the facility at all reasonable times.
- 13.4 The Management Structure at Balbane Landfill site is set out below.

**14 REPORT ON STAFF TRAINING**

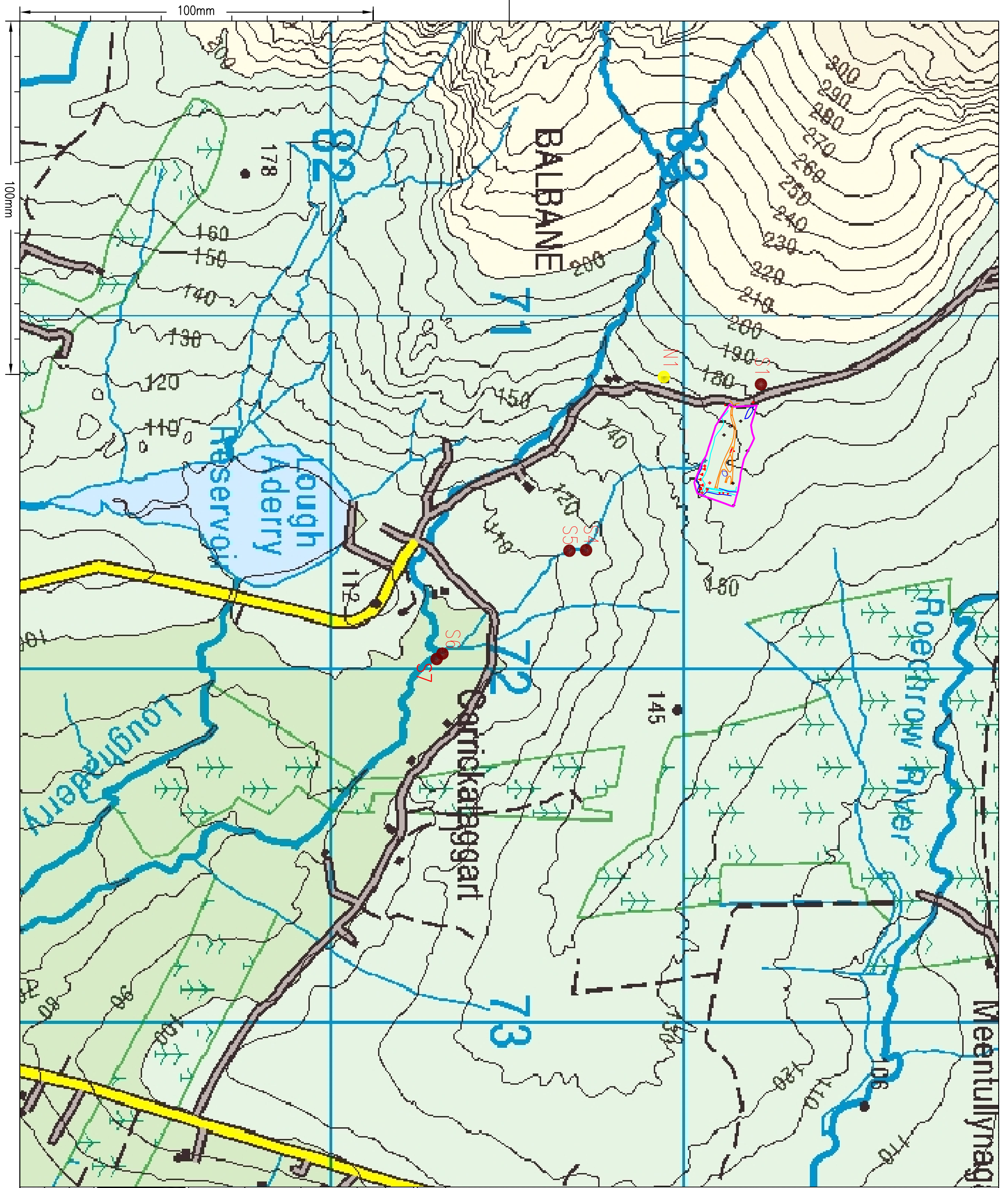
- 14.1 No training has been undertaken as the facility is now closed and there are no operational personnel on the site.

15 RESOURCES AND ENERGY CONSUMPTION SUMMARY

15.1 No energy was consumed on the site during the reporting period.

16 REPORT ON ENVIRONMENTAL MANAGEMENT PROGRAMME

16.1 An Environmental Management Programme (EMP) was revised in 2004 to take into consideration the closure of the site and was submitted in to the Agency in December 2004 for its agreement. A public communication programme has been initiated in accordance with Condition 2 of the Waste Licence to ensure that information concerning the environmental performance is available at reasonable times. The public may view environmental records at the Donegal County Council headquarters. Details regarding this are contained in Section 2 of the Environmental Management System Manual.



NOTES

- SITE BOUNDARY
- S1 ● SURFACE WATER MONITORING POINT
- N1 ● NOISE MONITORING POINT

MONITORING TYPE	REF NO	GRID REFERENCE	
SURFACE WATER	SW1	171187 363215	
	SW4	171657 382720	
	SW5	171658 382673	
	SW6	171949 382314	
	SW7	171965 382297	
	NOISE	N1	171166 382940

REV	DESCRIPTION	BY	CHECK	DATE
A	UPDATED GRID COORDINATES	JD	AMCG	JULY 05/JULY 05

DRAWN BY AMCG CHECK BY AMCG APPROVED DD
 DATE SEPT 2004 DATE SEPT 2004 DATE SEPT 2004
 PLOT SCALE 1:10,000 SCHEDULES SHEET SIZE A3

CLIENT
 DONEGAL COUNTY COUNCIL

PROJECT
 BALBANE LANDFILL SITE

TITLE
 SURFACE WATER MANAGEMENT

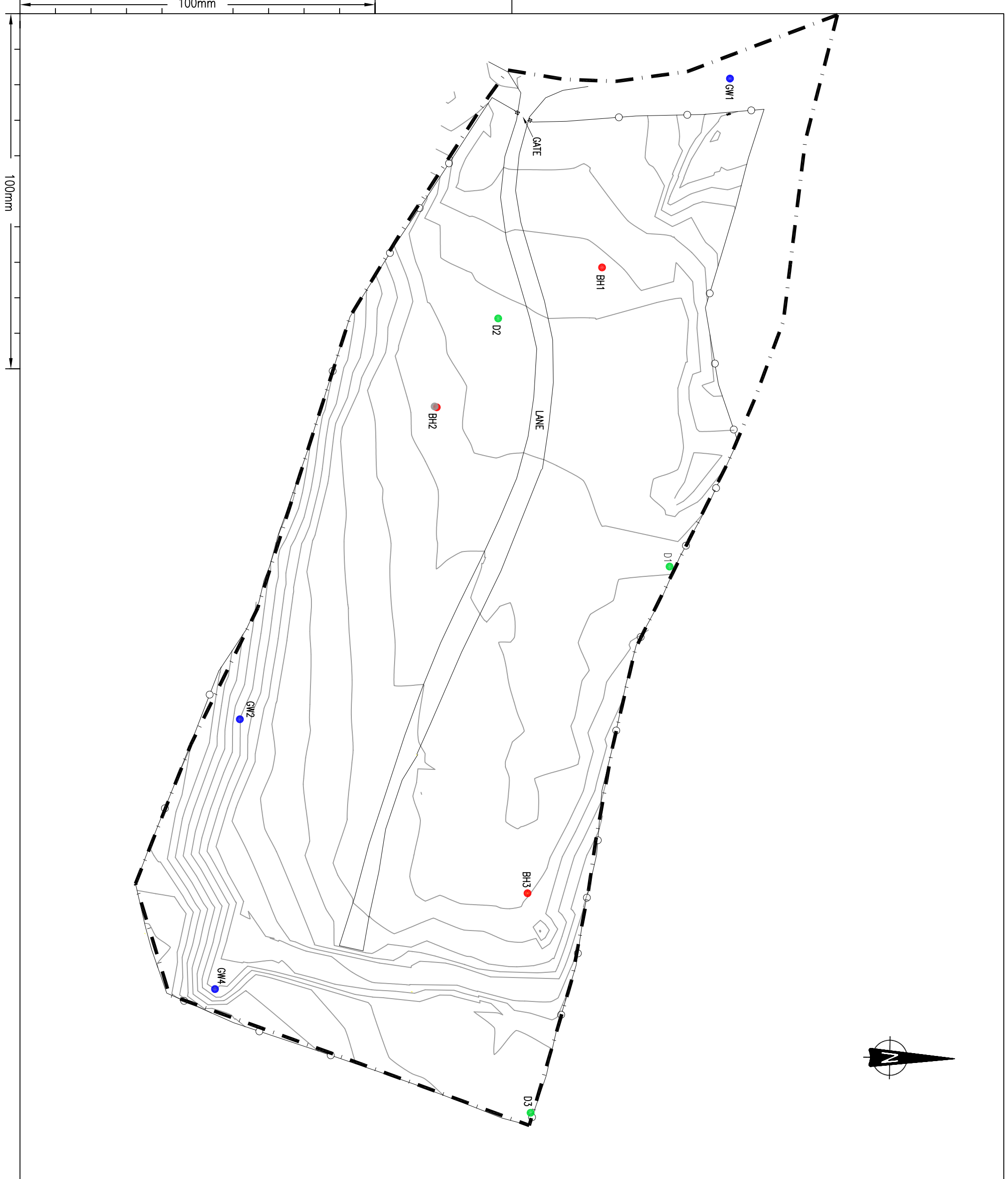
RPS Kirk McClure Morton
 CONSULTING ENGINEERS

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 THE ENTERPRISE ROAD BUSINESS CENTRE BALBANE LETTERKENNY CO.DONEGAL

ARCHITECT	DWG. STATUS
DRAWING No. 5234.40/107	PRELIM. ●
REVISION A	TENDER
	CONST.
	RECORD

100mm

100mm



NOTES

- KEY
- SITE BOUNDARY
 - GW GROUNDWATER MONITORING POINT
 - BH LEACHATE MONITORING POINT
 - D DUST MONITORING POINT
 - BH LANDFILL GAS MONITORING POINT

MONITORING TYPE	REF NO	GRID REFERENCE
LEACHATE & GAS	BH1	171300 383157
	BH2	171339 383110
	BH3	171476 383136
GROUNDWATER	GW1	171246 383193
	GW2	171427 383055
	GW4	171503 383048
DUST	D1	171384 383176
	D2	171314 383128
	D3	171538 383137

GRID COORDINATES DETERMINED FROM SITE SURVEY

REV	DESCRIPTION	JD DATE	AMcG DATE
A	UPDATED GRID COORDINATES	JULY 05	JULY 05
	SITE BOUNDARY ADDED		

DRAWN BY	JD	CHECK BY	KAD	APPROVED	DD
DATE	AUG 2003	DATE	AUG 2003	DATE	AUG 2003

PLOT SCALE 1:1000 SCHEDULES SHEET SIZE A3

CLIENT
DONEGAL COUNTY COUNCIL

PROJECT
BALBANE LANDFILL SITE

TITLE
MONITORING LOCATIONS

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THE ENTERPRISE FUND BUSINESS CENTRE BALLYRANE LITERRKENNY CO.DUBLIN 14

ARCHITECT	DWG. STATUS
PRELIM.	●
TENDER	
CONST.	
RECORD	

DRAWING No.	5234.40/06
REVISION	A

APPENDIX A

**MONITORING LOCATIONS, FREQUENCIES AND
PARAMETERS**

Table A1 Grid References of Monitoring Points

Monitoring Points	Easting	Northing
Boreholes		
GW1	171246.5649	383193.1516
GW2	171427.2239	383055.9240
GW4 Note 1	171503.0898	383048.6637
Surface Water Monitoring		
S1	171187	363215
S4	171657	382720
S5	171658	382673
S6 Note 2	171949	382314
S7 Note 2	171965	382297
Gas Piezometers		
BH1	171300.3033	383157.7656
BH2	171339.4609	383110.6149
BH3	171475.8577	383135.7863
Dust		
D1	171384.5481	383176.7779
D2	171314.6629	383128.5125
D3	171538.3837	383137.6433
Leachate		
BH2	171339.4609	383110.6149

NOTE 1 – GW3 WAS REPLACED BY GW4 WHEN THE LANDFILL MASS EXTENDED PAST THE LOCATION OF GW3

NOTE 2 – SW2 AND SW3 WERE REPLACED BY SW6 AND SW7

Table A2 Groundwater Parameters and Monitoring Frequencies

Quarterly		Annually	
Temperature	Chloride	Boron	Magnesium
Groundwater Level	Dissolved Oxygen	Cadmium	Manganese
	Sodium	Calcium	Mercury
	TON	Chromium	Orthophosphate
	TOC	Copper	Zinc
	Phenols	Cyanide	
	Ammoniacal Nitrogen	Fluoride	
	Electrical Conductivity	Lead	
	pH	List I/II substances	
	Iron	Sulphate	
	Potassium		

Table A3 Surface Water Parameters Monitoring Frequencies

Quarterly		Annually	
Temperature	Chloride	Iron	Magnesium
pH	Dissolved Oxygen	Cadmium	Manganese
Ammoniacal Nitrogen	COD	Calcium	Mercury
BOD		Chromium	Orthophosphate
Electrical Conductivity		Copper	Zinc
TSS		Sodium	Potassium
		Fluoride	TON
		Lead	Sulphate
		List I/II substances	

APPENDIX B

RESULTS OF MONITORING

Location		Balbane, Killybegs, Co. Donegal											
Sample Type		surface water											
Site No		SW1											
Date of Sample		Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sept 12	Oct 12	Nov 12	Dec 12
Lab No		1226	1453	1733	2271	2670	3071	6	4088	0	5016	5848	0
pH		6.7	6.6	6.3	7.3	6.7	6.5	7.3	6.6	0.0	6.8	6.7	0.0
Temp	C	7.70	7.80	9	8.00	19.4	13.1	15.50	14.3	0.0	8.9	4.1	0.0
Electrical Conductivity	uS/cm	87	49	45	55	95	87	68	70	0	39	45	0
Ammonical Nitrogen	mg/l	0.09	0.08	<0.01	0.05	0.17	0.15	0.01	3.34	0.00	0.11	0.11	0.00
COD	mg/l	40	20	15	9	13	13	18	10	0	15	20	0
BOD	mg/l	0.3	0.3	1.0	0.9	0.3	1.7	3.4	0.7	0.0	1.1	1.1	0.0
Dissolved Oxygen	mg/l	11.47	11.78	11.06	9.47	8.20	8.96	8.67	8.75	0.00	10.90	12.01	0.00
SS	mg/l	<1	1.0	1.0	1.0	7.0	5.0	2.0	1.0	0.0	2.0	1.0	0.0
Residue on Evaporator	mg/l	0	0	0	0	0	0	0	0	0	0	0	0
Calcium	ug/l	0	0	0	0	0	0	0	0		0	0	0
Cadmium	ug/l	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000
Chromium	ug/l	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000
Chloride	mg/l	26	21	18	15	14	15	14	14	0	15	17	0
Chlorine	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Copper	ug/l	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Cyanide	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	ug/l	0.00	0	0.00	0.00	0.00	0	0.00	0.00		0.00	0.00	0.00
Lead	ug/l	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000
Magnesium	ug/l	0.0000	0.0	0.0000	0.0000	0.0000	0	0.0000	0.0000		0.0000	0.0000	0.0000
Manganese	ug/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000		0.0000	0.0000	0.0000
Mercury	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000
Nickel	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Potassium	mg/l	0.0000	0.0	0.0000	0.0000	0.0000	0.0	0.0000	0.0000		0.0000	0.0000	0.0000
Sodium	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000		0.0000	0.0000	0.0000
Sulphate	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000		0.0000	0.0000	0.0000
Zinc	ug/l	0.00	0.0	0.00	0.00	0.00	0	0.00	0.00		0.00	0.00	0.00
Total Alkalinity as CaCO3	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Organic Carbon	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Oxidised Nitrogen	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.010				0	0
Arsenic	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Barium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Boron	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Flouride	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Phenols	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphorous	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Selenium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Silver	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mircrotox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrite	mg/l	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.000	0.000	0.000	0.000
Nitrate	mg/l	0.00	0.00	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.00	0.0000	0.0000
Phosphate - ORTHO	mg/l	0.0000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Phosphate - TOTAL	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Facel Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Depth	m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*** Insufficient Sample / No Access

--- Not Applicable

Location		Balbane, Killybegs, Co. Donegal											
Sample Type		surface water											
Site No		SW4											
Date of Sample		Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sept 12	Oct 12	Nov 12	Dec 12
Lab No		1227	1454	1734	2272	2671	3072	7	4089	0	5017	5849	0
pH		6.5	6.5	6.6	6.9	7.1	7.1	17	6.9	0.0	7.6	7.7	0.0
Temp	C	8.10	8.80	9.60	8.2	21.1	14.8	16.50	15.20	0.00	10.00	4.1	0.0
Electrical Conductivity	uS/cm	163	157	106	151	307	472	295	269	0	151	220	0
Ammonical Nitrogen	mg/l	0.78	0.94	0.86	0.97	0.42	6.24	2.26	17.50	0.00	2.09	5.54	0.00
COD	mg/l	40	34	26	6	18	18	10	13	0	18	30	0
BOD	mg/l	0.4	0.8	1.3	1.3	0.5	6.0	1.5	1.0	0.0	1.2	1.5	0.0
Dissolved Oxygen	mg/l	11.7	12.1	11.5	9.7	8.9	9.7	9.4	9.7	0.0	12.2	13.1	0.0
SS	mg/l	1.0	1.0	1.0	1.0	7.0	3.0	1.0	1.0	0.0	2.0	3.0	0.0
Residue on Evaporator	mg/l	0	0	0	0	0	0	0	0	0	0	0	0
Calcium	ug/l	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	ug/l	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chromium	ug/l	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chloride	mg/l	33	25	20	22	35	46	34	35	0	22	31	0
Chlorine	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Copper	ug/l	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	ug/l	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Lead	ug/l	0.000	0	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000
Magnesium	ug/l	0.0000	0.00	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Manganese	ug/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mercury	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nickel	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Potassium	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sodium	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sulphate	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Zinc	ug/l	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Total Alkalinity as CaCO3	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Organic Carbon	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Oxidised Nitrogen	mg/l	0.48	0.73	0.42	1.02	1.87	2.49	2.82	0.08	0.0	0.00	0.00	0.00
Arsenic	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Barium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Boron	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Flouride	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Phenols	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphorous	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Selenium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Silver	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mircrotox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mircrotox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrite	mg/l	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000
Nitrate	mg/l	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0
Phosphate - ORTHO	mg/l	0.00	0.00	0.000	0.00	0.04	0.000	0.000	0.000	0.00	0.00	0.00	0.00
Phosphate - TOTAL	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Facel Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Depth	m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*** Insufficient Sampl / No Access

--- Not Applicable

Location		<i>Balbane, Killybegs, Co. Donegal</i>											
Sample Type		surface water											
Site No		SW5											
Date of Sample		Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sept 12	Oct 12	Nov 12	Dec 12
Lab No		1228	1455	1735	2273	2672	3073	7	4090	0	5018	5850	0
pH		6.6	6.7	6.6	6.9	7.0	7.4	16	7.2	0.0	7.7	7.8	0.0
Temp	C	8.20	8.90	9.70	8.20	21.0	14.9	16.40	15.40	0.00	10.10	4.1	0.0
Electrical Conductivity	uS/cm	161	150	106	148	303	461	289	256	0	143	212	0
Ammonical Nitrogen	mg/l	0.88	0.91	0.55	1.11	0.44	6.26	1.89	1.38	0.00	1.65	5.00	0.00
COD	mg/l	41	37	19	7	17	21	18	19	0	19	24	0
BOD	mg/l	0.3	0.8	1.2	1.5	0.5	4.8	1.1	0.9	0.0	0.9	1.5	0.0
Dissolved Oxygen	mg/l	11.6	12.1	11.5	9.5	9.5	10.0	9.6	10.0	0.0	12.2	13.3	0.0
SS	mg/l	2.0	6.0	2.0	6.0	4.0	3.0	2.0	2.0	0.0	5.0	4.0	0.0
Residue on Evaporator	mg/l	0	0	0	0	0	0	0	0	0	0	0	0
Calcium	ug/l	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	ug/l	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chromium	ug/l	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chloride	mg/l	32	24	19	21	35	48	36	34	0	22	30	0
Chlorine	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Copper	ug/l	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	ug/l	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Lead	ug/l	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Magnesium	ug/l	0.0000	0.00	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Manganese	ug/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mercury	ug/l	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nickel	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Potassium	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sodium	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sulphate	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Zinc	ug/l	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Total Alkalinity as CaCO3	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Organic Carbon	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Oxidised Nitrogen	mg/l	0.41	0.70	0.5	1.06	2.02	2.51	2.73	2.10	0.00	0.00	0.00	0.00
Arsenic	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Barium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Boron	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Flouride	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Phenols	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphorous	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Selenium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Silver	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mircrotox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Micrtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrite	mg/l	0.000	0.000	0.000	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000
Nitrate	mg/l	0.0	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0000	0.0	0.0
Phosphate - ORTHO	mg/l	0.00	0.00	0.000	0.00	0.02	0.000	0.000	0.000	0.0	0.00	0.00	0.00
Phosphate - TOTAL	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Facel Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Depth	m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*** Insufficient Sample / No Access

--- Not Applicable

Location		<i>Balbane, Killybegs, Co. Donegal</i>											
Sample Type		surface water											
Site No		SW6											
Date of Sample		Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sept 12	Oct 12	Nov 12	Dec 12
Lab No		1229	1456	1736	2274	2673	3074	7	4091	0	5019	5851	0
pH		6.61	6.66	6.52	7.03	6.65	7.40	16	7.13	0.00	7.37	7.71	0.00
Temp	C	8.50	8.70	9.80	8.30	20.0	14.1	16.0	14.90	0.00	9.90	3.8	0.0
Electrical Conductivity	uS/cm	141	133	79	114	182	331	199	169	0	91	139	0
Ammonical Nitrogen	mg/l	0.31	0.50	0.40	0.61	0.18	2.60	0.7	<0.01	0.00	0.40	2.75	0.0
COD	mg/l	43	35	21	6	19	21	23	27	0	26	23	0
BOD	mg/l	0.08	0.61	9.96	0.88	0.51	2.85	1.07	0.95	0.00	0.78	1.63	0.00
Dissolved Oxygen	mg/l	11.53	11.96	11.52	9.67	9.8	10.20	10.06	10.25	0.00	12.04	13.01	0.00
SS	mg/l	<1	1.0	1.0	1.00	2.0	1.0	1.0	1	0.0	2.00	1.0	0.0
Residue on Evaporator	mg/l	0	0	0	0	0	0	0	0	0	0	0	0
Calcium	ug/l	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	ug/l	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chromium	ug/l	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chloride	mg/l	32	25	19	18	28	47	28	24	0	18	25	0
Chlorine	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Copper	ug/l	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	ug/l	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Lead	ug/l	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Magnesium	ug/l	0.0000	0.00	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Manganese	ug/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mercury	ug/l	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nickel	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Potassium	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sodium	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sulphate	mg/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Zinc	ug/l	0.00	0.0	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Total Alkalinity as CaCO3	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Organic Carbon	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Oxidised Nitrogen	mg/l	0.26	0.62	0.24	0.68	0.97	1.97	2.04	1.00	0.0	0.00	0.00	0.00
Arsenic	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Barium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Boron	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Flouride	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Phenols	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphorous	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Selenium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Silver	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrite	mg/l	0.00	0.00	0	0	0.000	0.0	0.00	0.000	0.000	0.000	0.000	0.000
Nitrate	mg/l	0.0	0.00	0.0	0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate - ORTHO	mg/l	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate - TOTAL	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Facel Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Depth	m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*** Insufficient Sample / No Access

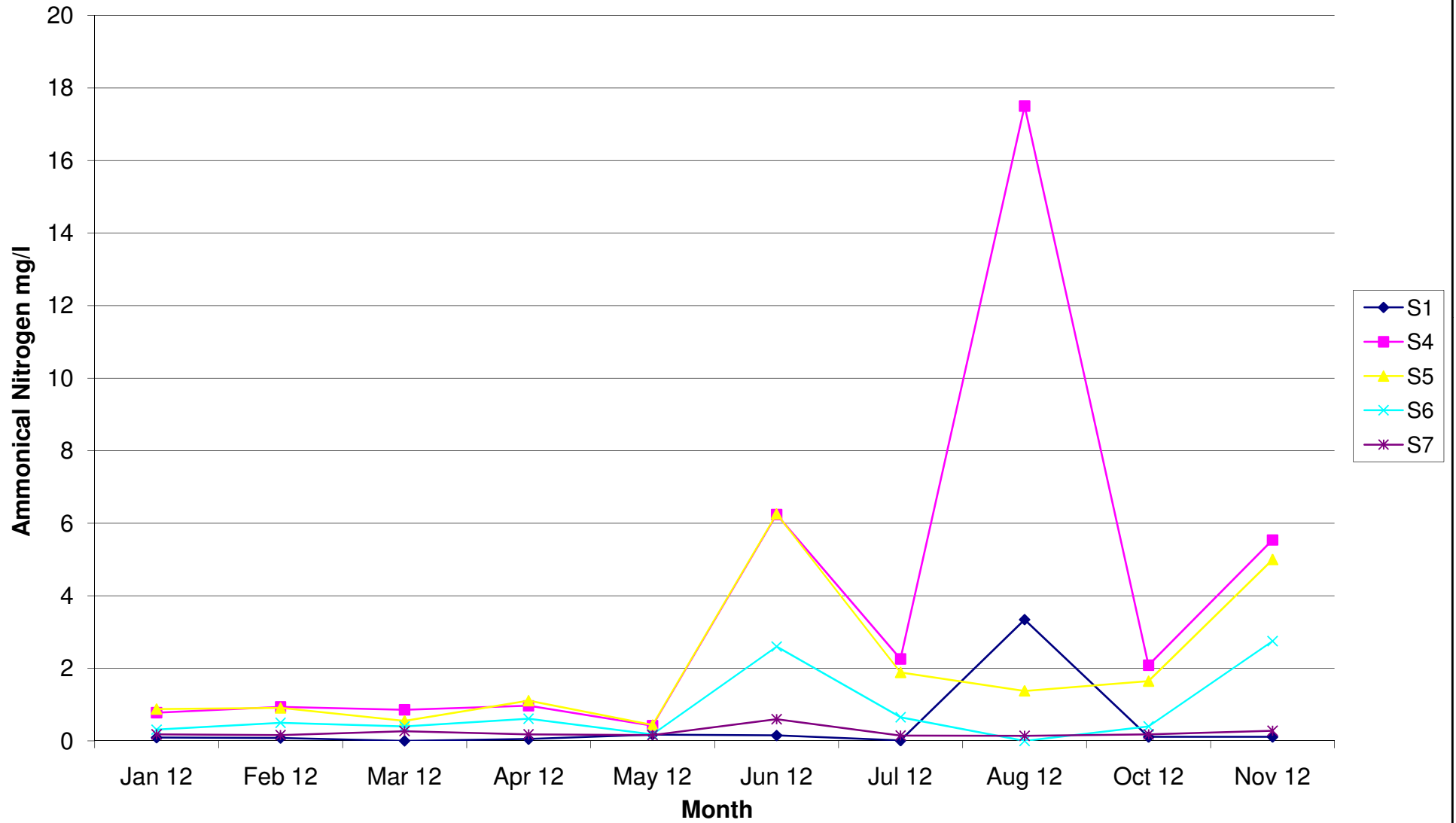
--- Not Applicable

Location		Balbane, Killybegs, Co. Donegal											
Sample Type		surface water											
Site No		SW7											
Date of Sample		Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sept 12	Oct 12	Nov 12	Dec 12
Lab No		1230	1457	1737	2275	2674	3075	7	4092	0	5020	5852	0
pH		6.68	6.7	6.5	7.1	6.7	7.3	16	7.1	0.0	7	7.6	0.0
Temp	C	9.00	8.70	9.80	8.20	19.9	14	16	15.10	0.00	9.90	3.7	0.0
Electrical Conductivity	uS/cm	115	88	67	74	113	144	95	95	0	58	69	0
Ammonical Nitrogen	mg/l	0.18	0.16	0.27	0.180	0.16	0.60	0	0.1	0.0	0.18	0.28	0.00
COD	mg/l	39	33	17	5	16	11	16	17	0	17	20	0
BOD	mg/l	0.30	0.25	1.00	0.59	0.33	1.81	0.6	0.84	0.00	0.71	1.29	0.0
Dissolved Oxygen	mg/l	11.63	11.96	11.62	9.69	9.63	10.37	10.0	10.15	0.00	12.42	13.63	0.00
SS	mg/l	<1	1.0	1.0	1.0	1.0	1.0	1.0	3.0	0.0	2.0	1.0	0.0
Residue on Evaporator	mg/l	0	0	0	0	0	0	0	0	0	0	0	0
Calcium	ug/l	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	ug/l	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chromium	ug/l	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chloride	mg/l	30	20	18	16	17	22	15	29	0	14	18	0
Chlorine	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Copper	ug/l	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	ug/l	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Lead	ug/l	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Magnesium	ug/l	0.0000	0.00	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Manganese	ug/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mercury	ug/l	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nickel	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Potassium	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sodium	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sulphate	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Zinc	ug/l	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Total Alkalinity as CaCO3	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Organic Carbon	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Oxidised Nitrogen	mg/l	0.09	0.14	0.08	0.09	0.20	0.45	0.38	0.37	0.00	0.00	0.00	0.00
Arsenic	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Barium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Boron	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Flouride	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Phenols	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphorous	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Selenium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Silver	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrite	mg/l	0.000	0.000	0	0	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000
Nitrate	mg/l	0.00	0.00	0.0	0	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.0
Phosphate - ORTHO	mg/l	0.0000	0.00	0.0000	0.00	0.02	0.0000	0.0000	0.0000	0.00	0.0000	0.0000	0.0000
Phosphate - TOTAL	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Facel Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Depth	m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

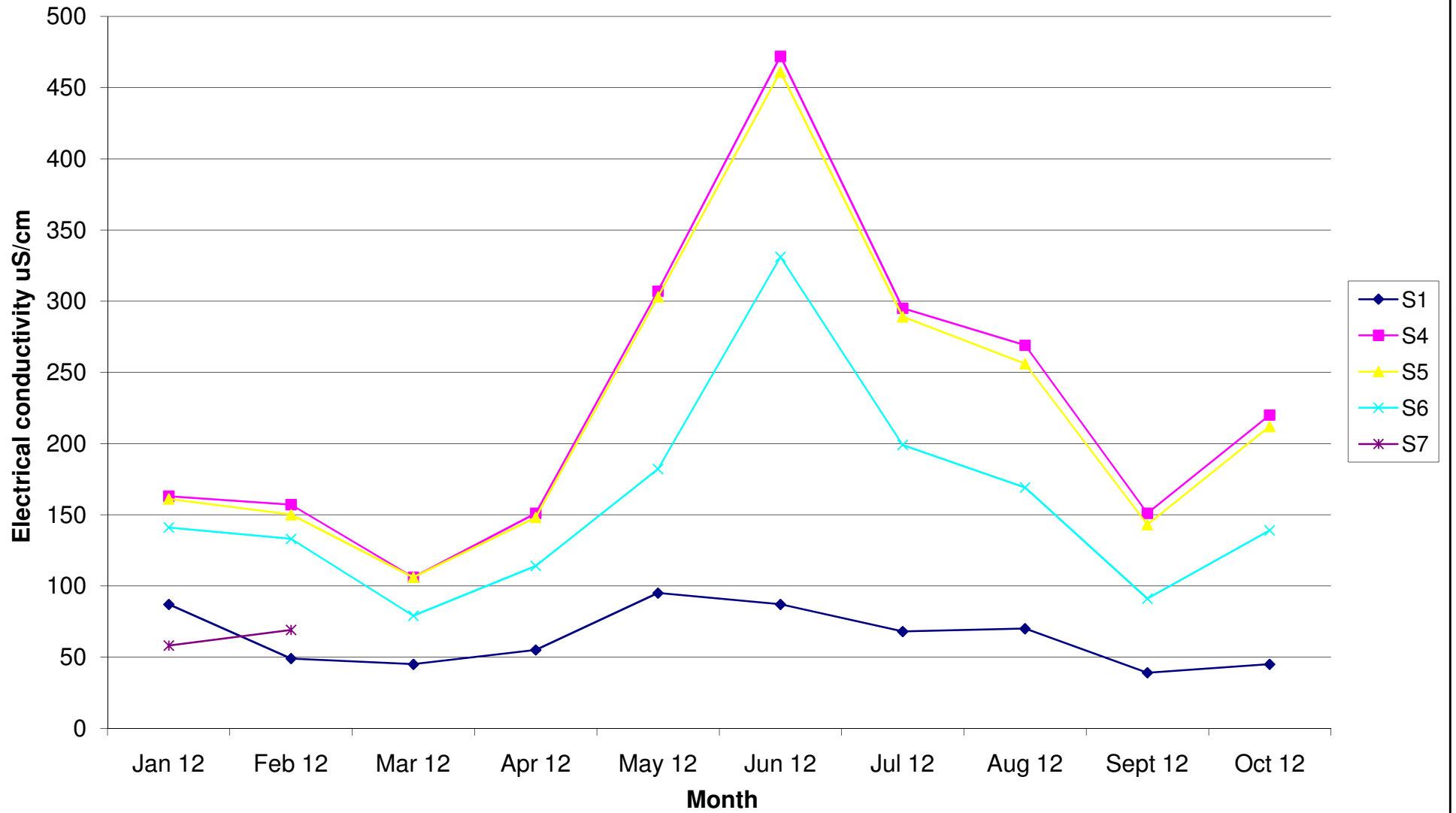
*** Insufficient Sample / No Access

--- Not Applicable

Surfacewater Ammonical Nitrogen



Surfacewater Electrical Conductivity



Location		Balbane, Killybegs, Co. Donegal											
Sample Type		groundwater											
Site No		GW1											
Date of Sample		Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sept 12	Oct 12	Nov 12	Dec 12
Lab No		0	0	1574	0	2544	3198	0	0	4653	0	0	0
pH		0.00	0.00	6.38	0.00	6.47	6.40	0.00	0.00	6.77	0.00	0.00	0.00
Temp	C	0.00	0.00	9.20	0.00	10.10	10.2	0.00	0.00	12.7	0.00	0.00	0.00
Electrical Conductivity	uS/cm	0	0	456	0	516	460	0	0	462	0	0	0
Ammonical Nitrogen	mg/l	0.00	0.00	0.24	0.00	0.27	<0.01	0.00	0.00	0.10	0.00	0.00	0.00
COD	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BOD	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Dissolved Oxygen	mg/l	0.00	0.00	5.29	0.00	5.13	5.11	0.00	0.00	0.00	0.00	0.00	0.00
SS	mg/l	0.00	0.00	0	0.00	0.00	0.0	0.00	0.00	0	0.00	0.00	0.00
Residue on Evaporator	mg/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Calcium	ug/l	0.0000	0.00	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cadmium	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Chromium	ug/l	0	0	0	0	0	0	0	0	0	0	0	0
Chloride	mg/l	0	0	19	0	14	20	0	0	19	0	0	0
Chlorine	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Copper	ug/l	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	ug/l	0	0.00	0.03	0.00	<0.019	0	0.00	0.00	<0.019	0.00	0.00	0.00
Lead	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Magnesium	ug/l	0.0000	0.00	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Manganese	ug/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mercury	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nickel	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Potassium	mg/l	0.0	0.0	<2.34	0.0000	<2.34	0.0	0.0000	0.0000	3	0.0000	0.0000	0.0000
Sodium	mg/l	0.0	0.0	20.8000	0.0000	46.2000	0.0	0.0000	0.0000	36.4	0.0000	0.0000	0.0000
Sulphate	mg/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Zinc	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Alkalinity as CaCO3	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Organic Carbon	mg/l	0	0.0	7.1	0.0000	7.9900	0.0	0.0000	0.0000	9	0.00	0.0000	0.0000
Total Oxidised Nitrogen	mg/l	0.00	0	0.18	0.0000	0.0100	0.06	0.0000	0.0000	0	0.0000	0.0000	0.0000
Arsenic	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Barium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Boron	ug/l	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Flouride	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Phenols	mg/l	0.0000	0.0000	<0.025	0.0000	<0.025	0.00	0.0000	0.0000	<0.016	0.0000	0.0000	0.0000
Phosphorous	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Selenium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Silver	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrite	mg/l	0.0000	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrate	mg/l	0.0000	0.0	0.0	0.0	0.0000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Phosphate - ORTHO	mg/l	0.0000	0.0000	0.0000	0.0000	0.0100	0.0000	0.0000	0	0.0	0.0000	0.0000	0.0000
Phosphate - TOTAL	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Facel Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Depth	m	0.0	0.0	0.4	0.0	0.4	0.4	0.0	0.0	0.6	0.0	0.0	0.0

*** Insufficient Sample / No Access

--- Not Applicable

Location		Balbane, Killybegs, Co. Donegal											
Sample Type		groundwater											
Site No		GW2											
Date of Sample		Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sept 12	Oct 12	Nov 12	Dec 12
Lab No		0	0	1575	0	2545	3199	0	0	4654	0	0	0
pH		0.00	0.00	6.16	0.00	6.21	6.18	0.00	0.00	6.37	0.00	0.00	0.00
Temp	C	0.00	0.00	9.8	0.00	10.50	10.7	0.00	0.00	13.10	0.00	0.00	0.00
Electrical Conductivity	uS/cm	0	0	99	0	87	102	0	0	133	0	0	0
Ammonical Nitrogen	mg/l	0.00	0.00	0	0.00	0.16	<0.01	0.00	0.00	0.09	0.00	0.00	0.00
COD	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BOD	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Dissolved Oxygen	mg/l	0.0000	0.0000	2.33	0.0000	6.1600	3.12	0.0000	0.0000	0.0	0.0000	0.0000	0.0000
SS	mg/l	0.0000	0.0000	0	0.0000	0.0000	0.0	0.0000	0.0000	0	0.0000	0.0000	0.0000
Residue on Evaporator	mg/l	0.0000	0.0000	0.000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Calcium	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cadmium	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Chromium	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Chloride	mg/l	0.0000	0.0000	19	0.0000	17.0000	21	0.0000	0.0000	10	0	0.0000	0.0000
Chlorine	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Copper	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cyanide	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Iron	ug/l	0.0000	0.0000	<0.019	0.0000	<0.019	0	0.0000	0.0000	<0.019	0.0000	0.0000	0.0000
Lead	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Magnesium	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Manganese	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mercury	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nickel	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Potassium	mg/l	0.0000	0.0000	<2.34	0.0000	<2.34	0.0	0.0000	0.0000	<2.34	0.0000	0.0000	0.0000
Sodium	mg/l	0.0000	0.0000	12.0000	0.0000	11.7000	0.0	0.0000	0.0000	6.5	0.0000	0.0000	0.0000
Sulphate	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	0.0000	0.0000	0.0000
Zinc	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Alkalinity as CaCO3	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Organic Carbon	mg/l	0.0000	0.0000	<3	0.0000	<3	0.0	0.0000	0.0000	<3	0	0.0000	0.0000
Total Oxidised Nitrogen	mg/l	0.0000	0.0000	<0.01	0.0000	<0.01	0.0100	0.0000	0.0000	0.00	0.0000	0.0000	0.0000
Arsenic	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Barium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Boron	ug/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Flouride	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Phenols	mg/l	0.0000	0.0000	<0.025	0.0000	<0.025	0.0000	0.0000	0.0000	<0.016	0.0000	0.0000	0.0000
Phosphorous	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Selenium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Silver	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrite	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000	0.0000	0.0000
Nitrate	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000	0.0000	0.0000
Phosphate - ORTHO	mg/l	0.0000	0.0000	0.00	0.0000	0.0100	0.00	0.0000	0.0000	0.00	0.0000	0.0000	0.0000
Phosphate - TOTAL	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Facel Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Depth	m	0.0	0.0	3.3	0.0	3.0	2.8	0.0	0.0	3	0.0	0.0	0.0

*** Insufficient Sample / No Access

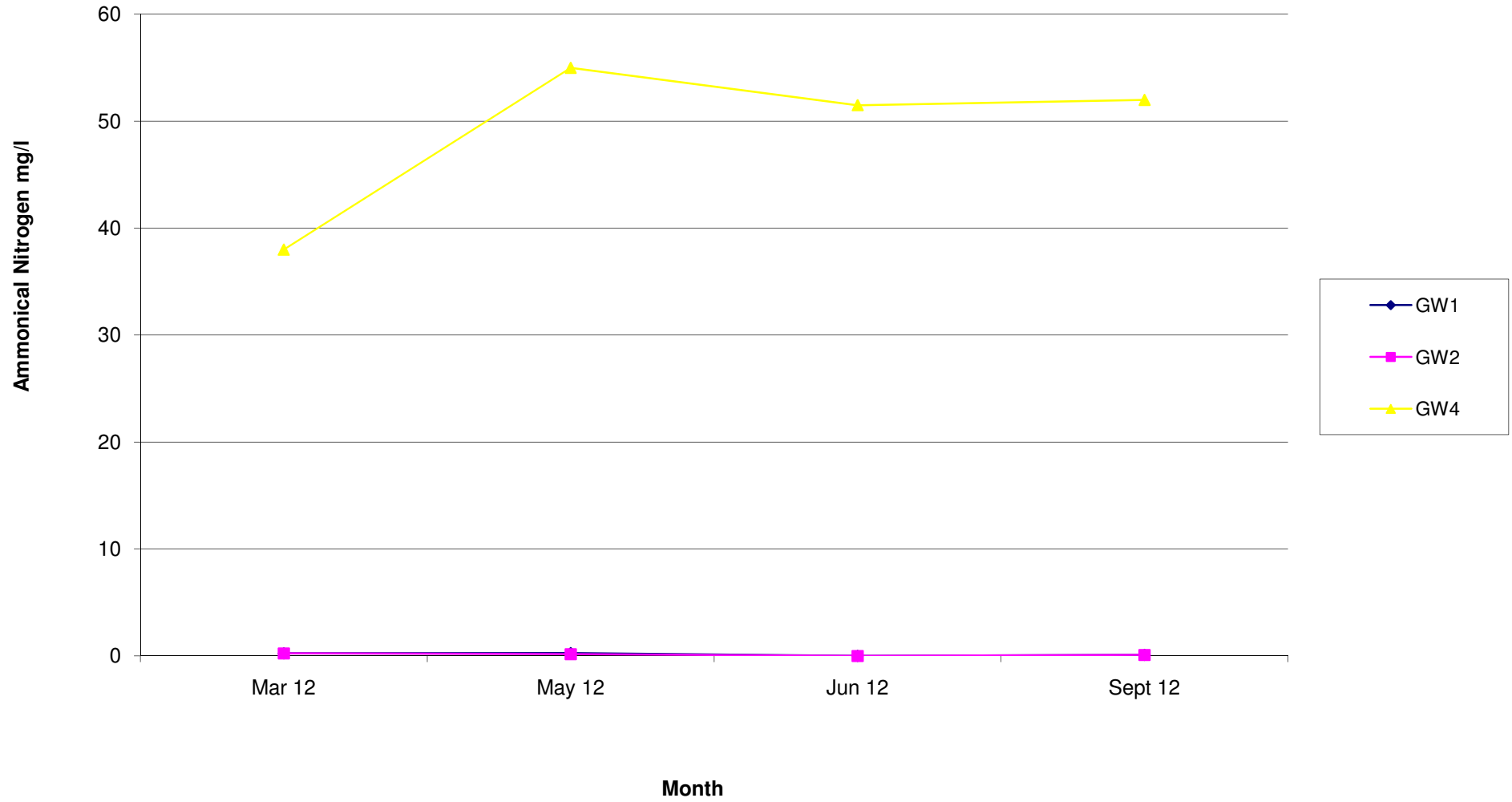
--- Not Applicable

Location		<i>Balbane, Killybegs, Co. Donegal</i>											
Sample Type		groundwater											
Site No		GW4											
Date of Sample		Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sept 12	Oct 12	Nov 12	Dec 12
Lab No		0	0	1576	0	2546	3200	0	0	4655	0	0	0
pH		0.00	0.00	6.39	0.00	6.47	6.50	0.00	0.00	6.72	0.00	0.00	0.00
Temp	C	0.00	0.00	9.4	0.00	10.30	10.9	0.00	0.00	14.00	0.00	0.00	0.00
Electrical Conductivity	uS/cm	0	0	2420	0	1916	1990	0	0	1480	0	0	0
Ammonical Nitrogen	mg/l	0.00	0.00	38.0	0.00	55.00	51.50	0.00	0.00	52.00	0.00	0.00	0.00
COD	mg/l	0	0	0	0	0	0	0	0	0	0	0	0
BOD	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Dissolved Oxygen	mg/l	0.00	0.00	2.47	0.00	5.30	3.17	0.00	0.00	0.0	0.00	0.00	0.00
SS	mg/l	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00
Residue on Evaporator	mg/l	0	0	0	0	0	0	0	0	0	0	0	0
Calcium	ug/l	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	ug/l	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chromium	ug/l	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chloride	mg/l	0	0	344	0	271	350	0	0	270	0	0	0
Chlorine	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Copper	ug/l	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	ug/l	0	0	0.93	0.00	<0.019	0	0.00	0.00	<0.019	0.00	0.00	0.00
Lead	ug/l	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Magnesium	ug/l	0.0000	0.00	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Manganese	ug/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mercury	ug/l	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nickel	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Potassium	mg/l	0.0	0.00	22.1	0.0000	24	0.0	0.0000	0.0000	25.2	0.0000	0.0000	0.0000
Sodium	mg/l	0	0.00	142	0.0000	151	0	0.0000	0.0000	126	0.0000	0.0000	0.0000
Sulphate	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Zinc	ug/l	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Total Alkalinity as CaCO3	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Organic Carbon	mg/l	0	0.00	19	0.0000	12.9000	0.0	0.0000	0.0000	21	0	0.0000	0.0000
Total Oxidised Nitrogen	mg/l	0	0	<0.01	0.00	0	2.64	0.00	0	0.00	0.00	0.00	0.00
Arsenic	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Barium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Boron	ug/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Flouride	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Phenols	mg/l	0.00	0.00	<0.025	0.00	<0.025	0.00	0.00	0.00	<0.016	0.00	0.00	0.00
Phosphorous	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Selenium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Silver	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mircrotox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrite	mg/l	0.000	0.000	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nitrate	mg/l	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000
Phosphate - ORTHO	mg/l	0.000	0.000	0.00	0.000	0.040	0.00	0.000	0.0	0.00	0.000	0.000	0.000
Phosphate - TOTAL	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Facel Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Depth	m	0.0	0.0	2.8	0.0	3.0	2.9	0.0	0.0	3.4	0.0	0.0	0.0

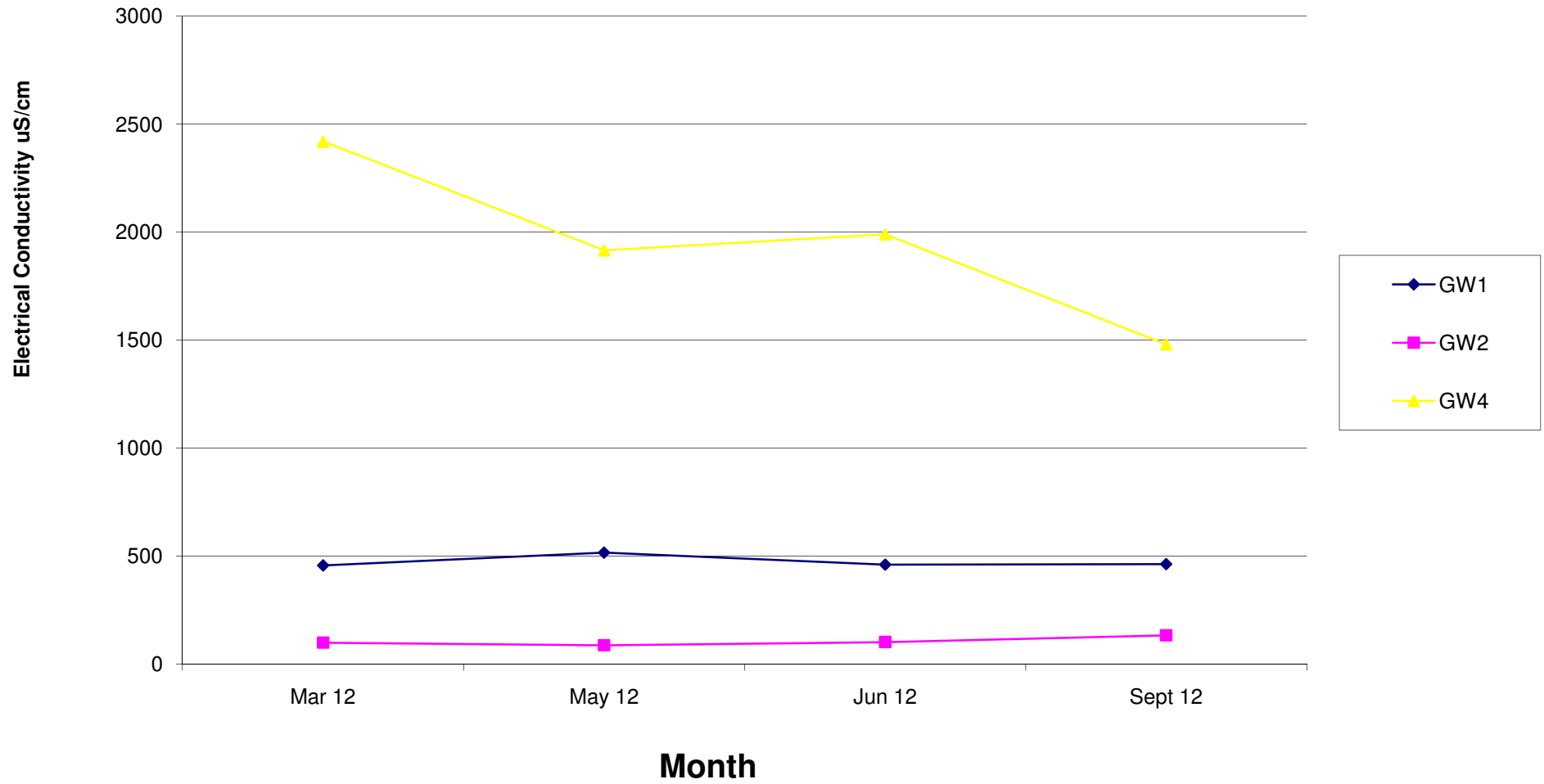
*** Insufficient Sample / No Access

--- Not Applicable

Groundwater Ammonical Nitrogen



Groundwater Electrical Conductivity



Location		<i>Balbane, Killybegs, Co. Donegal</i>											
Sample Type		leachate											
Site No		BH2											
Date of Sample		Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sept 12	Oct 12	Nov 12	Dec 12
Lab No		0	0	1577	0	2547	3201	0	0	4656	0	0	0
pH		0.0	0.0	6.1	0.0	6.2	6.2	0.0	0.0	6.4	0.0	0.0	0.00
Temp	C	0.00	0.00	9.8	0.00	10.20	10.7	0.00	0.00	12.10	0.00	0.00	0.00
Electrical Conductivity	uS/cm	0	0	1410	0	1151	1420	0	0	1014	0	0	0
Ammonical Nitrogen	mg/l	0.00	0.00	0.15	0.00	11.80	12.00	0.00	0.00	10.10	0.00	0.00	0.00
COD	mg/l	0	0	36	0	30	48	0	0	20	0	0	0
BOD	mg/l	0	0.0	0.7	0.0	0.3	1.3	0.0	0.0	0.4	0.0	0.0	0.0000
Dissolved Oxygen	mg/l	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SS	mg/l	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0000
Residue on Evaporator	mg/l	0	0	0	0	0	0	0	0	0	0	0	0
Calcium	ug/l	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	ug/l	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chromium	ug/l	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chloride	mg/l	0	0	234	0	241	246	0	0	225	0	0	0
Chlorine	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Copper	ug/l	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	ug/l	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Lead	ug/l	0.000	0	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000
Magnesium	ug/l	0.0000	0.00	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Manganese	ug/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mercury	ug/l	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nickel	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Potassium	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sodium	mg/l	0.0000	0.0	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sulphate	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Zinc	ug/l	0.00	0.0	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Total Alkalinity as CaCO3	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Organic Carbon	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Oxidised Nitrogen	mg/l	0.00	0.00	<0.01	0.00	<0.01	<0.01	0.00	0.00	0.00	0.00	0.00	0.00
Arsenic	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Barium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Boron	ug/l	0.0000	0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Flouride	mg/l	0.0000	0.00	0.0000	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Phenols	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphorous	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Selenium	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Silver	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mircrotox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Microtox	Toxic Units	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nitrite	mg/l	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nitrate	mg/l	0.0000	0.0000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000	0.0000	0.0000
Phosphate - ORTHO	mg/l	0.000	0.000	0.0	0.000	0.040	0.00	0.000	0.000	0.00	0.000	0.000	0.000
Phosphate - TOTAL	mg/l	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Facel Coliforms		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Depth	m	0.0	0.0	4.3	0.0	4.6	4.1	0.0	0.0	4.7	0.0	0.0	0.0

*** Insufficient Sample / No Access

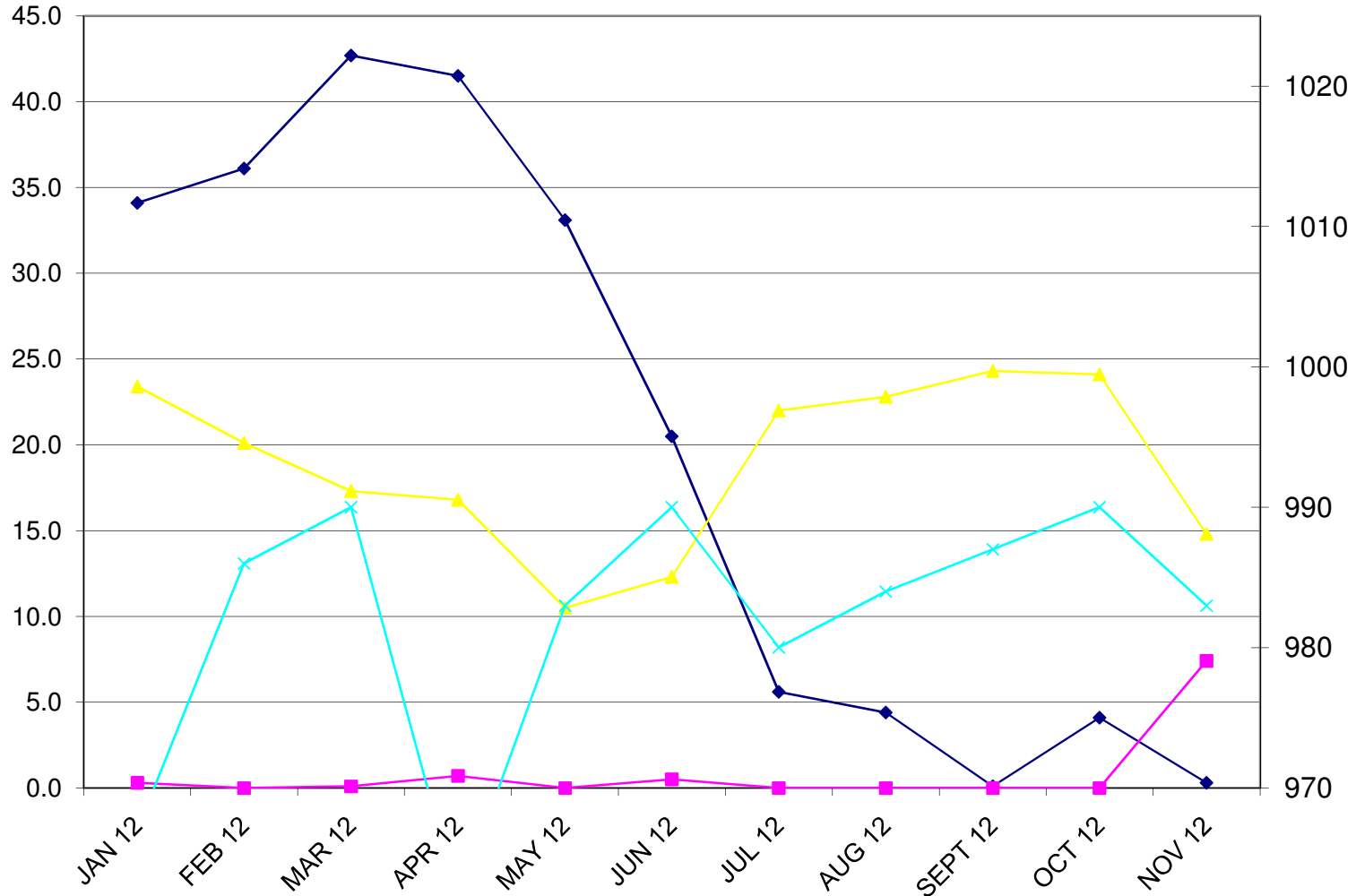
--- Not Applicable

		<i>Balbane Landfill Site, Killybegs, Co Donegal</i>											
		Gas Levels											
		BH1											
PARAMETERS	UNITS	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		JAN 12	FEB 12	MAR 12	APR 12	MAY 12	JUN 12	JUL 12	AUG 12	SEPT 12	OCT 12	NOV 12	DEC 12
Methane	%	34.1	36.1	42.7	41.5	33.1	20.5	5.6	4.4	0.1	4.1	0.3	0.0
Carbon Dioxide	%	8.8	8.8	9.2	10.8	10.1	10.2	10.3	8.7	2.8	5.3	6.1	0.0
Oxygen	%	4.0	3.1	3.1	3.5	5.0	7.9	8.0	12.1	19.1	23.9	16.7	0.0
Atm. Pressure	mBar	967	986	990	962	983	990	980	984	987	990	983	0

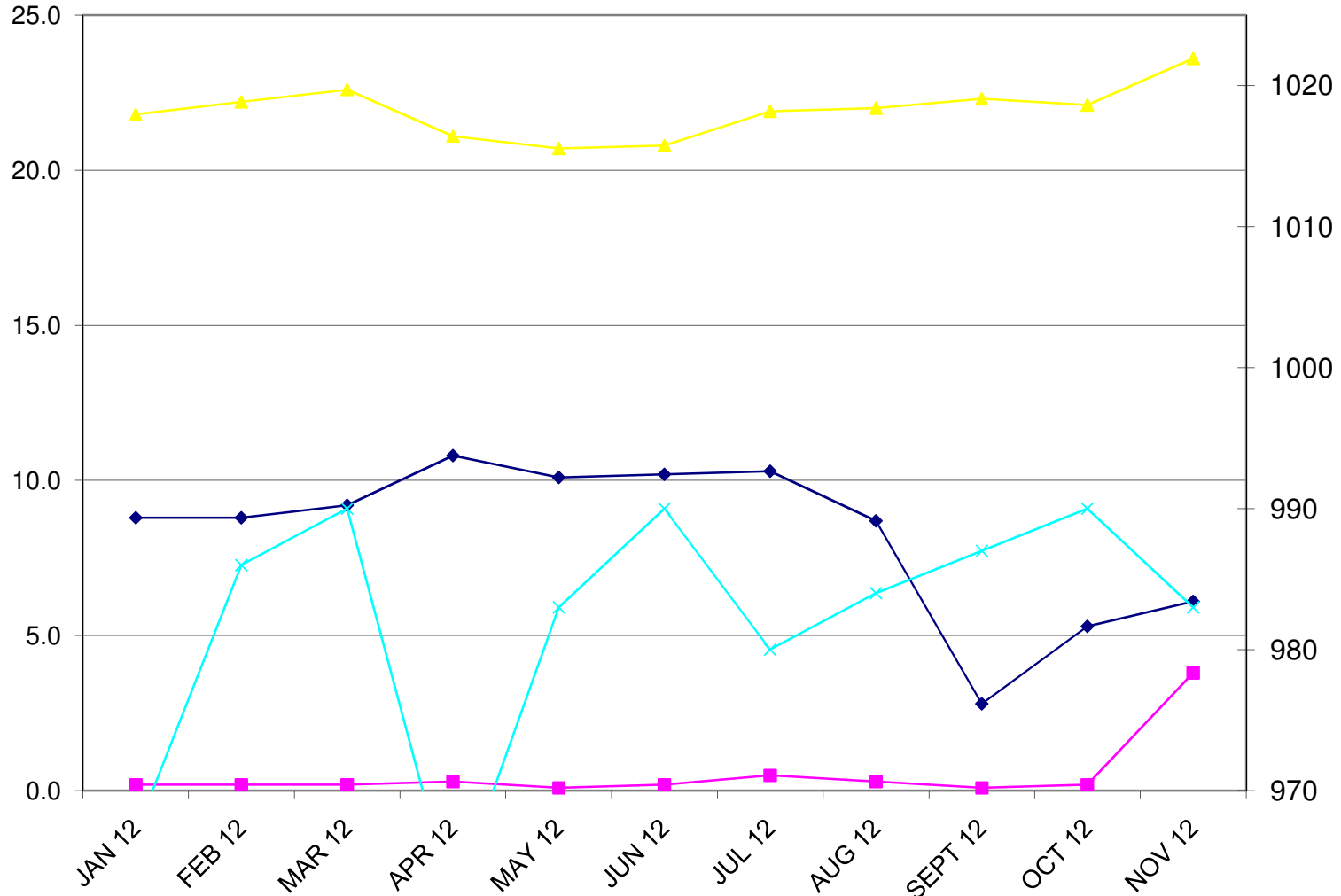
		<i>Balbane Landfill Site, Killybegs, Co Donegal</i>											
		Gas Levels											
		BH2											
PARAMETERS	UNITS	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		JAN 12	FEB 12	MAR 12	APR 12	MAY 12	JUN 12	JUL 12	AUG 12	SEPT 12	OCT 12	NOV 12	DEC 12
Methane	%	0.3	0	0.1	0.7	0	0.5	0	0	0.0	0.0	7.4	0.0
Carbon Dioxide	%	0.2	0.2	0.2	0.3	0.1	0.2	0.5	0.3	0.1	0.2	3.8	0.0
Oxygen	%	19.9	20.7	20.8	20.7	20.8	20.6	20.4	20.5	20.7	20.6	17.4	0.0
Atm. Pressure	mBar	967	986	990	962	983	990	980	984	987	990	983	0

		<i>Balbane Landfill Site, Killybegs, Co Donegal</i>												
		Gas Levels												
		BH3												
PARAMETERS	UNITS	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		JAN 12	FEB 12	MAR 12	APR 12	MAY 12	JUN 12	JUL 12	AUG 12	SEPT 12	OCT 12	NOV 12	DEC 12	
Methane	%	23.4	20.1	17.3	16.8	10.5	12.3	22	22.8	24.3	24.1	14.8	0.0	
Carbon Dioxide	%	21.8	22.2	22.6	21.1	20.7	20.8	21.9	22	22.3	22.1	23.6	0.0	
Oxygen	%	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.6	0.0	
Atm. Pressure	mBar	967	986	990	962	983	990	980	984	987	990	983	0	

Methane



Carbon Dioxide



APPENDIX C

**WATER BALANCE CALCULATION
AND METEOROLOGICAL DATA**

BALBANE WATER BALANCE CALCULATION

Year	Status	Rainfall (mm)	Restored area	Temp Restored area RCA(m ²)	Temp Restored area infiltration IRCA(m ³)	Total Water	Leachate produced Lo(m ³)
2012	Closed	1,149	0	29,500	8,472	8,472	8,472
Total							8,472

Assumptions

IRCA=	Temp restored area infiltration of rainfall estimated % (25-30% of annual rainfall, EPA Manual)	30%	%
Temporary restored area	Area of landfill site temporary restored, site closed in Jan 2004	29,500	m ²
Rainfall Data	Data taken from Ballynacarrick Weather Station. Evaporation los	1,149	mm

APPENDIX D
E-PRTR Return
(AER Electronic Reporting System)



[Guidance to completing the PRTR workbook](#)

AER Returns Workbook

Version 1.1.16

REFERENCE YEAR	2012
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1. FACILITY IDENTIFICATION

Parent Company Name	Donegal County Council
Facility Name	Balbane Landfill Site
PRTR Identification Number	W0090
Licence Number	W0090-01

Waste or IPPC Classes of Activity

No.	class name
3.1	Deposit on, in or under land (including landfill).
3.13	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.
3.4	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
Address 1	Balbane
Address 2	Killybegs
Address 3	Co Donegal
Address 4	
	Donegal
Country	Ireland
Coordinates of Location	-8.44483 54.6955
River Basin District	GBNIENW
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Don Smith
AER Returns Contact Email Address	don.smith@donegalcoco.ie
AER Returns Contact Position	Environmental Technician
AER Returns Contact Telephone Number	0749122787
AER Returns Contact Mobile Phone Number	0876860295
AER Returns Contact Fax Number	0749161304
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	1
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(d)	Landfills
5(c)	Installations for the disposal of non-hazardous waste

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

[Guidance on waste imported/accepted onto site](#)

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	
--	--

This question is only applicable if you are an IPPC or Quarry site

4.1 RELEASES TO AIR

[Link to previous years emissions data](#)

| PRTR# : W0090 | Facility Name : Balbane Landfill Site | Filename : W0090_2012(1).xls | Return Year : 2012 |

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASERS TO AIR		Please enter all quantities in this section in KGs						
No. Annex II	POLLUTANT Name	M/C/E	METHOD		QUANTITY			
			Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
01	Methane (CH4)	C	OTH	Landgem-v302	0.0	171700.0	0.0	171700.0
03	Carbon dioxide (CO2)	C	OTH	Landgem-v302	0.0	471200.0	0.0	471200.0
02	Carbon monoxide (CO)	C	OTH	Landgem-v302	0.0	83.98	0.0	83.98
07	Non-methane volatile organic compounds (NMVOC)	C	OTH	Landgem-v302	0.0	1107.0	0.0	1107.0
21	Mercury and compounds (as Hg)	C	OTH	Landgem-v302	0.0	0.00124	0.0	0.00124
55	1,1,1-trichloroethane	C	OTH	Landgem-v302	0.0	1.371	0.0	1.371

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASERS TO AIR		Please enter all quantities in this section in KGs						
No. Annex II	POLLUTANT Name	M/C/E	METHOD		QUANTITY			
			Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
34	1,2-dichloroethane (EDC)	C	OTH	Landgem-v302	0.0	0.8689	0.0	0.8689
35	Dichloromethane (DCM)	C	OTH	Landgem-v302	0.0	25.47	0.0	25.47
56	1,1,2,2-tetrachloroethane	C	OTH	Landgem-v302	0.0	3.954	0.0	3.954
57	Trichloroethylene	C	OTH	Landgem-v302	0.0	7.879	0.0	7.879
60	Vinyl chloride	C	OTH	Landgem-v302	0.0	9.77	0.0	9.77
62	Benzene	C	OTH	Landgem-v302	0.0	3.178	0.0	3.178
65	Ethyl benzene	C	OTH	Landgem-v302	0.0	10.46	0.0	10.46
73	Toluene	C	OTH	Landgem-v302	0.0	76.94	0.0	76.94
78	Xylenes	C	OTH	Landgem-v302	0.0	27.28	0.0	27.28

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASERS TO AIR		Please enter all quantities in this section in KGs						
Pollutant No.	POLLUTANT Name	M/C/E	METHOD		QUANTITY			
			Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill:	Balbane Landfill Site					
Please enter summary data on the quantities of methane flared and / or utilised	T (Total) kg/Year	M/C/E	Method Used		Facility Total Capacity m3 per hour	
			Method Code	Designation or Description		
	Total estimated methane generation (as per site model)	171700.0	C	OTH	Landgem-v302	N/A
	Methane flared	0.0				0.0 (Total Flaring Capacity)
	Methane utilised in engine/s	0.0				0.0 (Total Utilising Capacity)
Net methane emission (as reported in Section A above)	171700.0	C	OTH	Landgem-v302	N/A	

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

| PRTR# : W0090 | Facility Name : Balbane Landfill Site | Filename : W0090_2012(1).xls | Return Year : 2012 |

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only co

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		M/C/E	Method Used		QUANTITY			
No. Annex II	Name		Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		M/C/E	Method Used		QUANTITY			
No. Annex II	Name		Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		M/C/E	Method Used		QUANTITY			
Pollutant No.	Name		Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

| PRTR# : W0090 | Facility Name : Balbane Landfill Site | Filename : W0090_2012(1).xls | Return Ye

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SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.4 RELEASES TO LAND

[Link to previous years emissions data](#)

| PRTR# : W0090 | Facility Name : Balbane Landfill Site | Filename : W0090_2012(1).xls | Return Year : 2012 |

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SECTION A : PRTR POLLUTANTS

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : W0090 | Facility Name : Balbane Landfill Site | Filename : W0090_2012(1).xls | Return Year : 2012 |

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Please enter all quantities on this sheet in Tonnes

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Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non-Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					

* Select a row by double-clicking the Description of Waste then click the delete button

[Link to previous years waste data](#)

[Link to previous years waste summary data & percentage change](#)