



## **Annual Environmental Report**

### **DRUMABODEN LANDFILL SITE** **(Waste Licence Ref. W0063-1)**

By  
**Donegal County Council**  
For  
**Environmental Protection Agency**

**Reporting Period: January 2011 to December 2011**

**March 2012**

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## 1. INTRODUCTION

1.1 This Annual Environmental Report (AER) has been prepared to meet the requirements of Condition 2.4 of Waste Licence W0063-1 for Drumabodan Landfill and includes the information listed in Schedule A of the Waste Licence. This report provides an environmental review of the site from January 2011 to December 2011.

### 1.2 Waste Licence Requirements

Donegal County Council ceased operational activity at Drumabodan in April 1999. On the 29<sup>th</sup> of June 2001 the Environmental Protection Agency granted the Council a Waste Licence (registration number W0063-1) for the orderly closure, capping and restoration of the landfill facility, in accordance with the Third Schedule of the Waste Management Act, 1996. Donegal County Council was only permitted to accept inert waste at the facility for the purpose of restoration and aftercare of the site. The quantity of inert waste to be accepted was limited to 40,000 tonnes. The Licence requires the Council to manage the facility to ensure that activities do not cause environmental pollution and carry out regular environmental monitoring and submit all monitoring results and reports.

During 2011 the Agency required that the Licence for this site be reviewed under the Environmental Objectives (Surface Water) Regulations 2009 SI No 272. An application for the review of this Licence was submitted to the Agency in September 2011.

### 1.3 Nature of the Facility

Drumabodan Landfill is an unlined landfill, historically operated on the 'dilute and disperse' principle, whereby leachate generated by rainfall infiltration and the decomposition of the landfilled wastes is allowed to disperse into the surrounding environment. The landfill is situated on blanket bog and is bounded to the north by the River Leannon and to the south by the R249 (see site layout plan 5234.60/06). A peripheral leachate cut-off drain has been provided to intercept seepage of leachate from the landfill mass. The leachate is then pumped from the cut-off drain into a leachate treatment system (puraflo). The facility was fully restored during 2007.

## 2. WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

### 2.1 Type of Waste

The licensed 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 the disposal of inert waste only and leachate treatment at the facility.
- **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. QUANTITIES AND COMPOSITION OF WASTE

### 3.1 Quantities of Waste for Restoration

In accordance with Condition 1 of the waste licence only inert waste shall be accepted for the purposes of remediation, rehabilitation, enhancement and restoration of the facility. The maximum total of inert waste to be disposed of at the site is 40,000 tonnes. The quantities of waste received during previous years at the facility are presented in Table 3.1.

3.2 The total capacity of Drumabodan landfill is 128,000 tonnes and this amount of waste has already been landfilled. The site is closed and no more waste will be accepted.

3.3 Restoration of the landfill was carried out during 2007 and the quantity of inert material imported that year is shown in the following table. No waste has been accepted at the facility since closure in 1999.

**Table 3.1 Waste quantities accepted (tonnes)**

	1998	1999	2000	2001	2002	2003	2004	2005
<b>Total (tonnes)</b>	5596	1515	0	0	0	0	0	0
	2006	2007	2008	2009	2010	2011		
<b>Total (tonnes)</b>	0	85,716*	0	0	0	0		

\* = inert material imported for restoration.

## **4. SUMMARY REPORT OF EMISSIONS**

### **4.1 Introduction**

The following is a general description of the results of monitoring for each media type with regard to the extent of emissions. Detailed results of monitoring are presented in Appendix A.

### **4.2 Groundwater**

The two upstream wells are GW1 & GW5. GW1 again shows signs of contamination whereas GW5 is virtually clear of contamination. Downstream, GW6 is almost clear of contamination and GW7 show signs of low-level contamination. Overall levels are similar those reported during the last period. It should be noted that all groundwater wells are located close to the edge of the waste body.

### **4.3 Surface Water**

There are no instances of surface water quality above MAC. The River Leannon has good assimilative capacity and this combined with the Puraflo system treating leachate on the site suggests that the landfill is not having a negative impact on the surface water environment in terms of leachate emissions.

### **4.4 Leachate**

Leachate is collected via a cut-off channel and pumped into a Puraflo treatment system. The Puraflo system (which is marketed in Ireland by Bord na Mona) is a package system containing peat fibre media that filters the leachate. Leachate is monitored at the intake and discharge points and the results are contained in Tables 5.1 & 5.2, & Appendix A. The results show that the discharge effluent exceeded parameter limits for ammonia during the period (ELV as stated in the Waste Licence). The system had been achieving improved reductions in ammonia levels by the end of 2010, however given the persistent exceedance of the ELV a major overhaul of the system was carried out early in 2012 even though ammonia levels being discharged are not impacting on the local surface water environment.

### **4.5 Landfill Gas**

Passive gas vents allow landfill gas to disperse to the atmosphere at Drumaboden. In addition to the vents, gas monitoring wells have been installed both within waste in the body of the landfill (LG1,2,3&5), and as peripheral wells on the road verge outside the landfill (LG6,7&8). The wells within waste show levels of methane from 0% to 10.6%; and CO<sub>2</sub> from 0% to 2.4%. The peripheral wells showed no exceedances for methane but exceedances in LG7 for CO<sub>2</sub>.

### **4.6 Dust**

Dust monitoring was not undertaken at the site prior to restoration due to the absence of operational activity. Monitoring plans were in place as required during the restoration contract. Contingency arrangements were not deployed during the project. Since restoration dust

levels are inspected during monitoring and a management system can be deployed if required.

## **5. RESULTS & INTERPRETATIONS OF MONITORING INCLUDING PLANS & UPDATES OF MONITORING LOCATIONS.**

### **5.1 Monitoring Locations, Parameters and Frequencies**

Monitoring locations are shown on drawing numbers 5234.60/103 & /06. Also contained on these drawings are the location coordinates for each monitoring point (where available). The required parameters to be monitored and frequencies are listed in Schedule D5 of the Waste Licence. All results from the monitoring programme are contained in Appendix A together with graphical representations of key parameters.

### **5.2. Groundwater**

Groundwater is monitored at locations GW1, GW5, GW6, GW7 (refer to drg. no. 5234.60/06). GW1 and GW5 are representative of groundwater upstream of the landfill and GW6 and GW7 are representative of downstream conditions, although all wells are close to the waste body. Wells labelled GW2, GW3 and GW4 are located within waste and are only used to monitor groundwater / leachate levels.

Results from monitoring of these wells are contained in graphical and tabular format. These results have been compared to EC Quality of Water Intended for Human Consumption Regulations, 1988, the European communities (Drinking Water) Regulations, 2000 and the EPA Interim Report, Towards Setting Guidelines Values for the Protection of Groundwater in Ireland. The majority of the parameters measured were below the MAC's.

Ammoniacal nitrogen was detected in excess of MAC at all groundwater locations, with the highest level present in GW1 with 5.65mg/l recorded.

Levels slightly in excess of recommended limits were also recorded for iron (GW1) and COD (GW6).

### **5.3 Surface Water**

Surface water is monitored at locations SW1, SW2, SW4, SW5 & SW6. SW1 is located upstream of the landfill, with SW2, SW4, SW5 & SW6 being downstream. Condition 9 and Schedule D of the licence requires the licensee to monitor surface water at six locations in the vicinity of the site on a quarterly and annual basis. Monitoring point S3 as indicated in the licence is no longer monitored as the Puraflo treatment system does not discharge at this point.

These results have been compared to EC (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations, 1989. All parameters were below the recommended limits (Surface Water Quality Standards, (SWQS)) for A1 category surface water.

#### 5.4 Leachate

Leachate quality can vary during the lifetime of a landfill site depending on the phase of decomposition of the waste. Leachate results and graphs for the reporting period are presented in Appendix A and some of the characteristic parameters of the leachate are listed in Table 5.1 below. Table 5.2 illustrates the maximum and minimum concentrations for both Raw and Treated Leachate.

<b>Table 5.1: Raw Leachate Concentrations 2011</b>					
	<b>Drumaboden Landfill Site</b>		<b>From 30 samples from UK/Irish landfills accepting domestic waste Results in mg/l</b>		
<b>PARAMETER</b>	<b>Min.Conc</b>	<b>Max.Conc</b>	<b>Min.Conc</b>	<b>Max.Conc</b>	<b>Mean</b>
Ammonia (mg/N)	51	129	<0.2	1700	491
BOD	2.05	10.9	4.5	>4800	>834
COD	60	86	<10	33,700	3078
Chloride (mg/l)	111	122	27	3410	1256
Iron (mg/l)	NA	NA	0.4	664	54.4
Potassium (mg/l)	NA	NA	2.7	1480	491
TON (mg/l N)	<0.01	0.23	/	/	/
Conductivity (mS/cm)	1436	2197	503	19,200	7789
pH	6.89	7.38	6.4	8	7.2

NA = not available

<b>Table 5.2: Leachate Concentrations Comparison 2011</b>				
	<b>Raw Leachate</b>		<b>Treated Leachate</b>	
<b>PARAMETER</b>	<b>Min.Conc</b>	<b>Max.Conc</b>	<b>Min.Conc</b>	<b>Max.Conc</b>
Ammonia (mg/N)	51	129	37	47
BOD (mg/l)	2.05	10.9	0	7.5
COD (mg/l)	60	86	24	88
Chloride (mg/l)	111	122	30	106
TON (mg/l N)	<0.01	0.23	0.11	4.93
Conductivity (mS/cm)	1436	2197	1322	1546
pH	6.89	7.38	7.23	7.37

Raw leachate parameters have been compared to “Typical Leachate Composition of 30 Samples from UK/Irish Landfills accepting mainly Domestic Waste” (Landfill Operational Practices). All parameters are consistent with typical leachate composition.

Although reduction in ammonia levels is being achieved, and there is not any impact on the local surface water environment, since the ELV was not being achieved by the puraflo system a major overhaul was carried out in early 2012 with the peat fibre media and the distribution pipework being replaced.

## 5.5 Landfill Gas

Gas is monitored at locations LG1 to LG8 inclusive. LG4 has since been lost (covered over). Wells LG1, LG2, LG3 & LG5 are located in waste. Wells LG6, LG7 and LG8 are peripheral gas wells.

Well LG1 is producing landfill gas. Levels are lower in the other wells in waste this period. However, gas monitoring on the mature waste body is indicative of methanogenic gas processes that would be occurring under anaerobic conditions. Maximum and minimum levels recorded for each piezometer are shown below in Table 5.3.

In peripheral wells there were no exceedances of methane. Carbon dioxide exceeded MAC at LG7 (max 2.4%).

PIEZOMETER	Methane (CH <sub>4</sub> )		Carbon Dioxide (CO <sub>2</sub> )	
	Min.Conc %	Max.Conc %	Min.Conc %	Max.Conc %
LG1	10.6	3.6	2.4	1.3
LG2	0	0	0.1	0.3
LG3	0	0	0	0.6
LG5	0	0	0	0.1

## 5.6 Dust

See Section 4.6.



**6. VOLUME OF LEACHATE PRODUCED AND VOLUME DISCHARGED**

As previously stated a leachate cut off channel has been installed along part of the western site boundary to intercept seepage of leachate from the landfill mass. The raw leachate is treated through the "Puraflo" peat filtration bed. A water balance calculation has been undertaken and is shown in Appendix B. This estimates that the volume of leachate being generated at the site for the reporting period is 4990m<sup>3</sup>.

**7. REPORTED INCIDENTS AND COMPLAINTS SUMMARIES**

- 7.1 Donegal County Council reports on an on-going basis all instances where either surface waters or groundwaters are found to contain in excess of 0.2mg/l ammonia, or where perimeter gas wells are found to contain greater than either 1% methane or 1.5% carbon dioxide. These are reported as incidents quarterly when the results become available.
- 7.2 Apart from the on-going emissions exceedances reporting referred to above, no incidents have been reported to the Environmental Protection Agency during this reporting period.
- 7.3 No complaints were received during this reporting period.

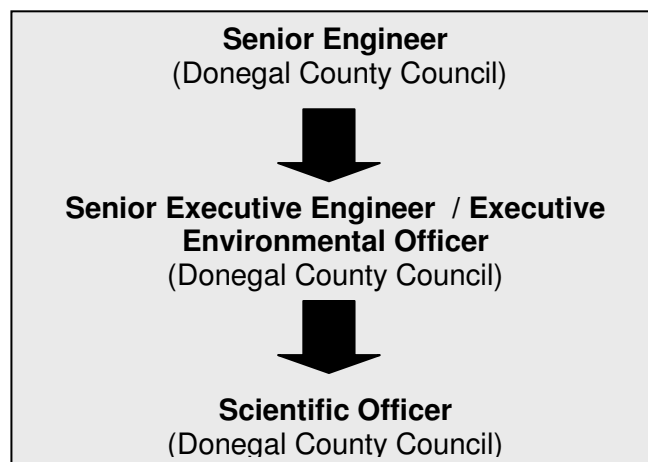
## 8. REVIEW OF NUISANCE CONTROLS

The facility is no longer operational and all areas formerly used for the placement of municipal waste have been fully restored. Accordingly no incidence of nuisance has been recorded during the reporting period. The appropriate control systems (as outlined in the EMS) will be deployed should any sign of nuisance, in the form of vermin, litter, odour, dust or birds, be detected in the course of the regular site inspections.

## 9. MANAGEMENT STRUCTURE OF SITE

### 9.1 Management Structure

The management of the landfill site is as follows.



### 9.2 Management Responsibility

**Senior Engineer:** Overall responsibility for the management of the site and maintenance of the waste licence. Delegation of authority and responsibility to ensure the effective management of the facility.

**Senior Executive Engineer:** Responsible for the ongoing management of the facility as directed by the Senior Engineer.

**Executive Environmental Officer:** Responsible for overall compliance with EPA Licence.

**Scientific Officers:** Carry out environmental inspections, monitoring, analysis and reporting in accordance with licence requirements.

**10. PROGRAMME FOR PUBLIC INFORMATION**

A public communication programme has been included in the EMS 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 Environment Section in Donegal County Council Headquarters in Lifford. Details regarding this are contained in Section 2 of the Environmental Management System Manual.

A public information / consultation programme was run prior to restoration works commencing.

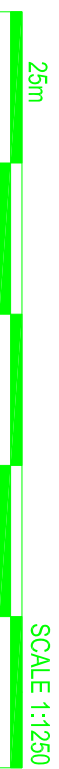
**11. CAPPING AND RESTORATION OF THE SITE.**

The site was fully restored during 2007 - 2008 (works commenced April 2007 and works were substantially complete in January 2008).

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

During 2009, the monitoring programme highlighted the fact that the treatment system was not delivering the reductions in ammonia levels in leachate previously achieved. The situation was investigated in conjunction with the proprietors of the system, Bord na Mona, and some investigations carried out. The peat filtration media was inspected by Bord na Mona and found to be in good enough condition to facilitate treatment. It was concluded that the system was overgrown and pipework clogged. An overhaul of the system was carried out during the reporting period clearing vegetation. By the end of 2010 the performance of the system had improved but was not yet optimal.

Further investigations were carried out during 2011 into the lack of performance of the system and by the end of the period it had been decided to replace the pipe distribution network and all the peat fibre media. This work was started early in 2012 and is now complete.



## NOTES

1. Verifying Dimensions:  
The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
2. Existing Services:  
Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
3. Issue of Drawings:  
Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (img, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipient's own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error by the recipient, listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipient's drawing production, or setting out on site.

4. DATUM:

5. KEYS

- Site Boundary
- 0.5m Restoration Contours
- 1.0m Restoration Contours

rev	amendments	drawn date	checked date



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Client

DONEGAL COUNTY COUNCIL

Project

Drumabodan Landfill Site

Title

As Built Restoration Contours

Architect

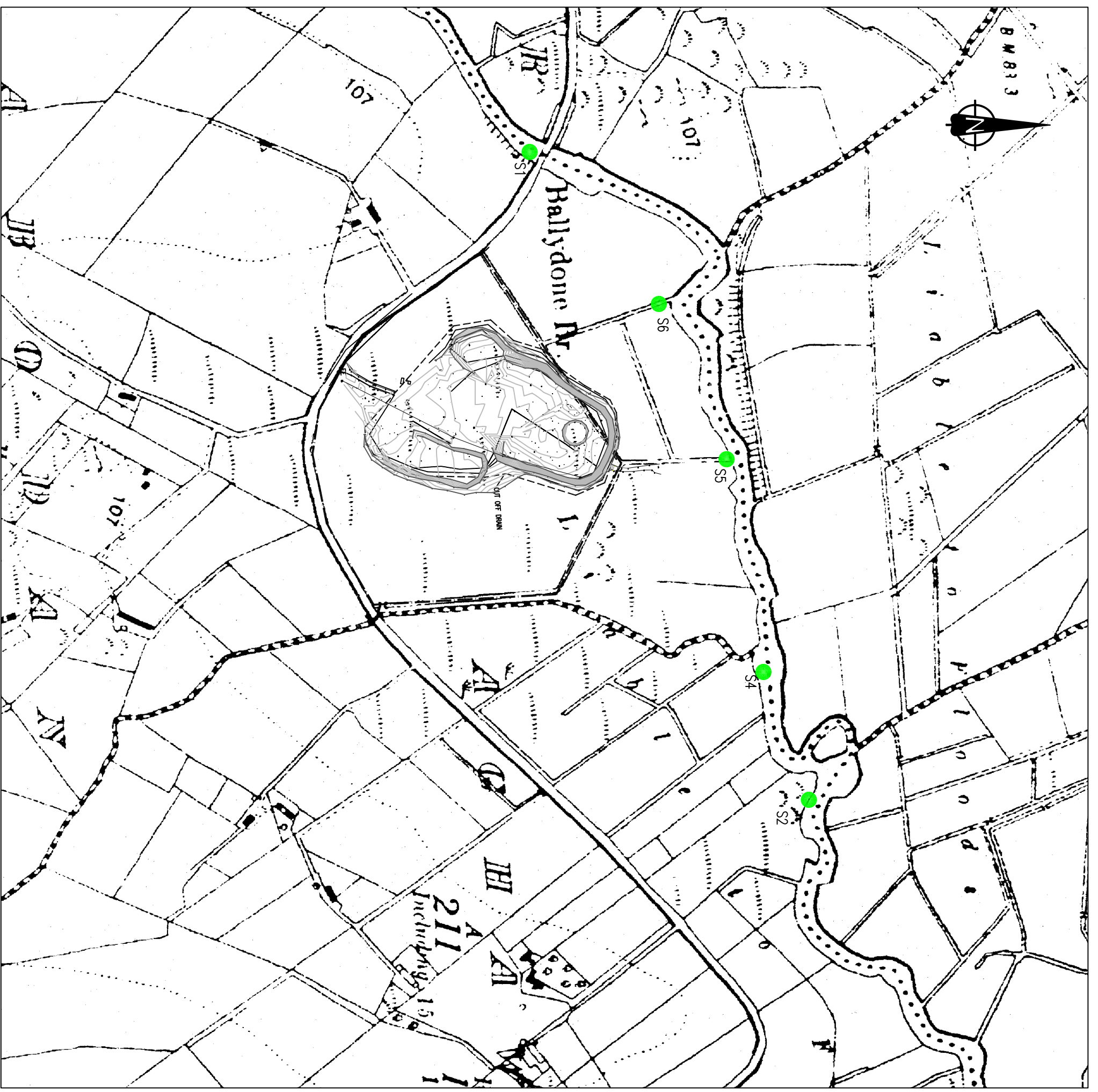
Drawing Status	Sheet Size	Drawing Scale
Preliminary	A3	AS SHOWN

Drawing Number	Rev
IBL0050/801	0

Drawn By / Date	Checked By / Date	Approved By / Date
AMB JUL '09	JD JUL '09	DP JUL '09

100mm

100mm



NOTES

1. GRID REFERENCE SITE ENTRANCE: 216663 421703

--- SITE BOUNDARY

● S1 SURFACE WATER MONITORING LOCATIONS

MONITORING TYPE	REF NO	GRID REFERENCE
SURFACE WATER	S1	NOT AVAILABLE
	S2	NOT AVAILABLE
	S3	NOT AVAILABLE
	S4	NOT AVAILABLE
	S5	NOT AVAILABLE
	S6	NOT AVAILABLE

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

DRAWN BY	DATE	CHECK BY	DATE	DD	DATE	DD	DATE
JD	AUG 03	DD	AUG 03	DD	AUG 03	DD	AUG 03

PLOT SCALE: NTS  
SCHEDULES  
SHEET SIZE: A3

CLIENT: DONEGAL COUNTY COUNCIL

PROJECT: DRUMABODEN LANDFILL SITE

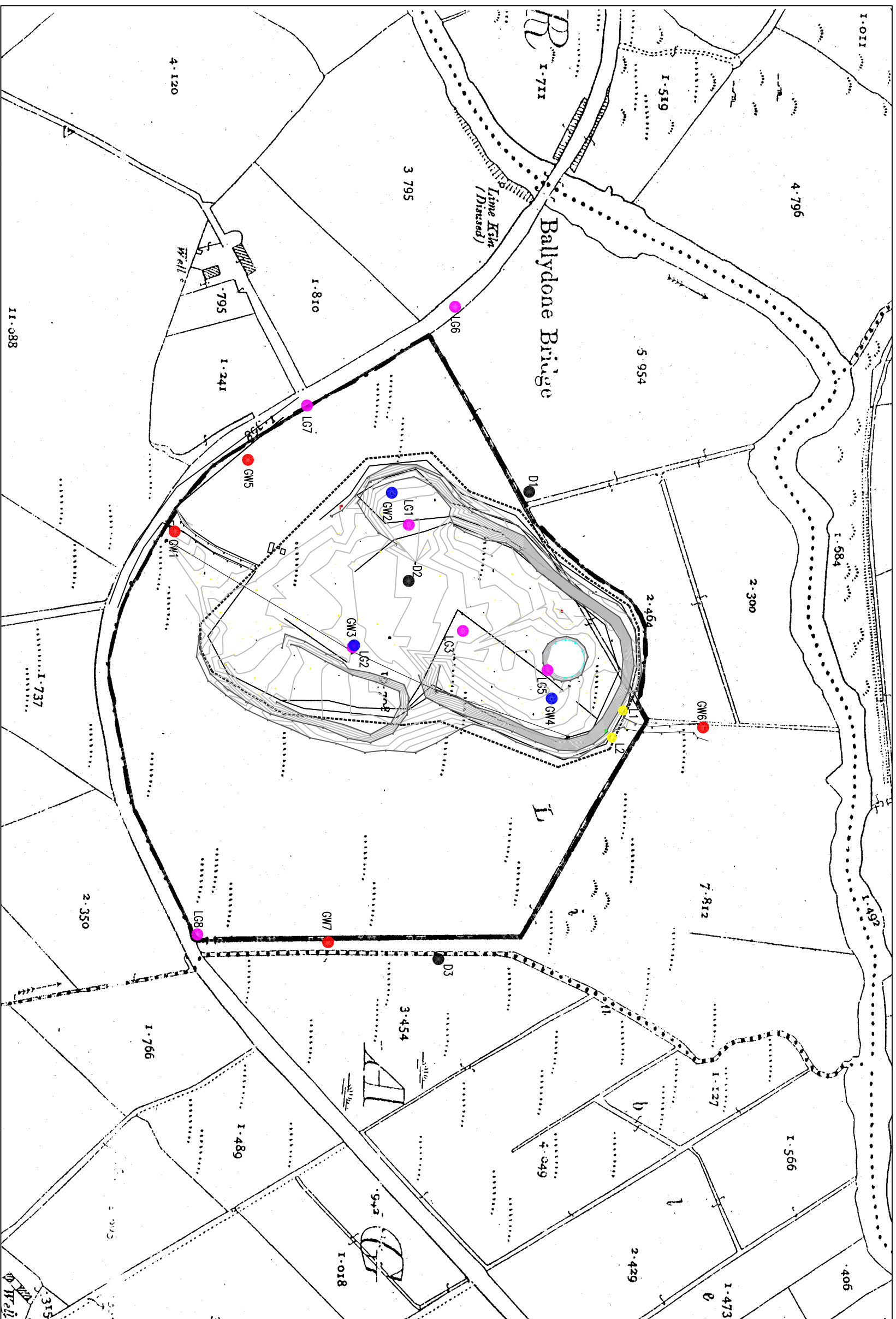
TITLE: SURFACE WATER MONITORING LOCATIONS

**RPS Kirk McClure Morton**  
CONSULTING ENGINEERS

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THE ENTERPRISE FUND BUSINESS CENTRE BALLYRAINE  
LITRENNY CO. DONEGAL

ARCHITECT	DWG. STATUS
PRELIM.	
TENDER	
CONST.	●
RECORD	

DRAWING No.	REVISION
5234.60/103	A



NOTES

- 1. GRID REFERENCE SITE ENTRANCE: 216663 421703
- SITE BOUNDARY
- GROUNDWATER MONITORING BOREHOLES
- LEACHATE LEVEL LOCATION
- GAS MONITORING LOCATIONS
- GAS VENT LOCATIONS
- LEACHATE SAMPLING LOCATIONS
- DUST SAMPLING LOCATIONS

MONITORING TYPE	REF NO	GRID REFERENCE
GROUNDWATER	GW1	216671 421703
	GW5	216628 421747
	GW6	216790 422024
	GW7	216920 421796
	GW2	216648 421834
	GW3	216740 421812
	GW4	216772 421931
LEACHATE LEVELS	LG1	216668 421845
	LG2	216742 421811
	LG3	216732 421878
	LG4	NOT AVAILABLE
	LG5	216756 421929
	LG6	216535 421873
	LG7	216595 421783
	LG8	216916 421717
GAS MONITORING LOCATIONS	D1	216780 421975
	D2	216796 421968
	D3	216648 421918
LEACHATE SAMPLING LOCATIONS	L1	216648 421918
	L2	216702 421845
	L3	216931 421863
DUST MONITORING LOCATIONS	D1	216648 421918
	D2	216702 421845
	D3	216931 421863

GRID COORDINATES DETERMINED FROM SITE SURVEY

REV	DESCRIPTION	DATE	BY	CHECK	DATE
A	UPDATED GRID COORDINATES MONITORING POINTS ADDED	NOV 04	AMCG	APPROVED	JULY 05

DRAWN BY KD DATE NOV 04 CHECK BY AMCG DATE NOV 04 APPROVED

BASE DRAWING 1:2500 SCHEDULE SHEETS

CLIENT  
DONEGAL COUNTY COUNCIL

PROJECT  
DRUMNABODAN RESTORATION AND AFTERCARE

TITLE  
MONITORING POINTS PLAN

**RPS Kirk McClure Morton**  
CONSULTING ENGINEERS

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ARCHITECT	DWG. STATUS
PRELIM.	●
TENDER	
CONST.	
RECORD	

**APPENDIX A**  
**RESULTS OF MONITORING**





Location		Drumaboden, Kilmacrennan, Co Donegal											
Sample Type		surface water											
Site No		SW2											
Date of Sample		JAN 11	FEB 11	MAR 11	APR 11	MAY 11	JUN 11	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11
Lab No			1658			2654				5368			
pH			7.08			9.16				7.37			
Temp	C		12.88			14.03				19.90			
Electrical Conductivity	uS/cm		131			130				116			
Ammonical Nitrogen	mg/l		0.13			<0.01				<0.01			
COD	mg/l		18			15				26			
BOD	mg/l		0.40			0.75				0.89			
Dissolved Oxygen	mg/l		11.61			11.82				8.64			
SS	mg/l		0.5			0.8				0.5			
Residue on Evaporator	mg/l												
Calcium	ug/l												
Cadmium	ug/l												
Chromium	ug/l												
Chloride	mg/l		30			21				22			
Chlorine	mg/l												
Copper	ug/l												
Cyanide	mg/l												
Total Iron	ug/l												
Lead	ug/l												
Magnesium	ug/l												
Manganese	ug/l												
Mercury	ug/l												
Nickel	mg/l												
Potassium	mg/l												
Sodium	mg/l												
Sulphate as S	mg/l												
Zinc	ug/l												
Total Alkalinity as CaCO3	mg/l												
Total Organic Carbon	mg/l												
Total Oxidised Nitrogen	mg/l		<0.01			<0.01				0.09			
Arsenic	mg/l												
Barium	mg/l												
Boron	ug/l												
Flouride	mg/l												
Phenol	mg/l												
Phosphorous	mg/l												
Selenium	mg/l												
Silver	mg/l												
Mircrotox	Toxic Units												
Microtox	Toxic Units												
Nitrite	mg/l		<0.03			<0.03				<0.01			
Nitrate	mg/l		<0.04			<0.04				0.09			
Phosphate - ORTHO	mg/l		0.06			0.01				0.00			
Phosphate - TOTAL	mg/l												
Total Coliforms													
Facel Coliforms													
Depth	m												

--- not applicable

Location		<i>Drumaboden, Kilmacrennan, Co Donegal</i>											
Sample Type		surface water											
Site No		SW4											
Date of Sample		JAN 11	FEB 11	MAR 11	APR 11	MAY 11	JUN 11	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11
Lab No			1659			2655				5369			
pH			7.10			8.34				7.34			
Temp	C		12.88			14.02				20.20			
Electrical Conductivity	uS/cm		132			131				117			
Ammonical Nitrogen	mg/l		0.04			0.01				<0.01			
COD	mg/l		22			20				21			
BOD	mg/l		0.37			4.56				1.80			
Dissolved Oxygen	mg/l		11.61			11.80				8.64			
SS	mg/l		1.3			1.0				0.8			
Residue on Evaporator	mg/l												
Calcium	ug/l												
Cadmium	ug/l												
Chromium	ug/l												
Chloride	mg/l		30			20				20			
Chlorine	mg/l												
Copper	ug/l												
Cyanide	mg/l												
Total Iron	ug/l												
Lead	ug/l												
Magnesium	ug/l												
Manganese	ug/l												
Mercury	ug/l												
Nickel	mg/l												
Potassium	mg/l												
Sodium	mg/l												
Sulphate as S	mg/l												
Zinc	ug/l												
Total Alkalinity as CaCO <sub>3</sub>	mg/l												
Total Organic Carbon	mg/l												
Total Oxidised Nitrogen	mg/l		<0.01			<0.01				0.09			
Arsenic	mg/l												
Barium	mg/l												
Boron	ug/l												
Flouride	mg/l												
Phenol	mg/l												
Phosphorous	mg/l												
Selenium	mg/l												
Silver	mg/l												
Mircrotox	Toxic Units												
Microtox	Toxic Units												
Nitrite	mg/l		<0.03			<0.03				<0.01			
Nitrate	mg/l		<0.04			<0.04				0.09			
Phosphate - ORTHO	mg/l		0.0563			0.0140							
Phosphate - TOTAL	mg/l												
Total Coliforms													
Facel Coliforms													
Depth	m												

--- not applicable

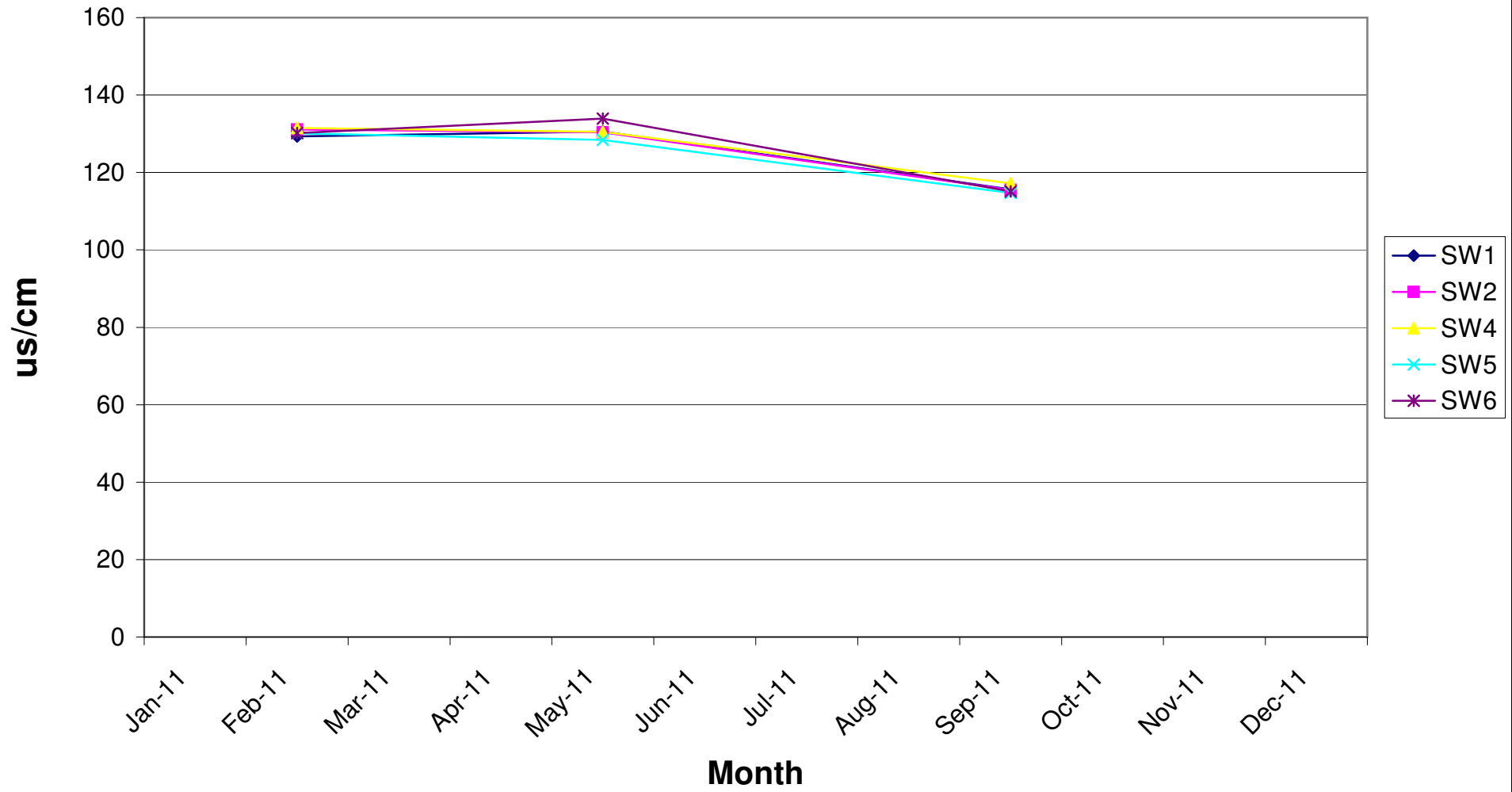
Location		Drumaboden, Kilmacrennan, Co Donegal											
Sample Type		surface water											
Site No		SW5											
Date of Sample		JAN 11	FEB 11	MAR 11	APR 11	MAY 11	JUN 11	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11
Lab No			1660			2656				5370			
pH			7.08			7.96				7.36			
Temp	C		13.06			14.01				20.40			
Electrical Conductivity	uS/cm		130			128				115			
Ammonical Nitrogen	mg/l		0.09			<0.01				<0.01			
COD	mg/l		21			19				30			
BOD	mg/l		0.36			0.98				0.94			
Dissolved Oxygen	mg/l		11.59			11.78				8.77			
SS	mg/l		0.0			1.25				0.75			
Residue on Evaporator	mg/l												
Calcium	ug/l												
Cadmium	ug/l												
Chromium	ug/l												
Chloride	mg/l		24			22				24			
Chlorine	mg/l												
Copper	ug/l												
Cyanide	mg/l												
Total Iron	ug/l												
Lead	ug/l												
Magnesium	ug/l												
Manganese	ug/l												
Mercury	ug/l												
Nickel	mg/l												
Potassium	mg/l												
Sodium	mg/l												
Sulphate as S	mg/l												
Zinc	ug/l												
Total Alkalinity as CaCO3	mg/l												
Total Organic Carbon	mg/l												
Total Oxidised Nitrogen	mg/l		<0.01			<0.01				<0.01			
Arsenic	mg/l												
Barium	mg/l												
Boron	ug/l												
Flouride	mg/l												
Phenol	mg/l												
Phosphorous	mg/l												
Selenium	mg/l												
Silver	mg/l												
Mircrotox	Toxic Units												
Microtox	Toxic Units												
Nitrite	mg/l		<0.03			<0.03				<0.01			
Nitrate	mg/l		<0.04			<0.04				0.0840			
Phosphate - ORTHO	mg/l		0.0563			0.0080				0.0000			
Phosphate - TOTAL	mg/l												
Total Coliforms													
Facel Coliforms													
Depth	m												

--- not applicable

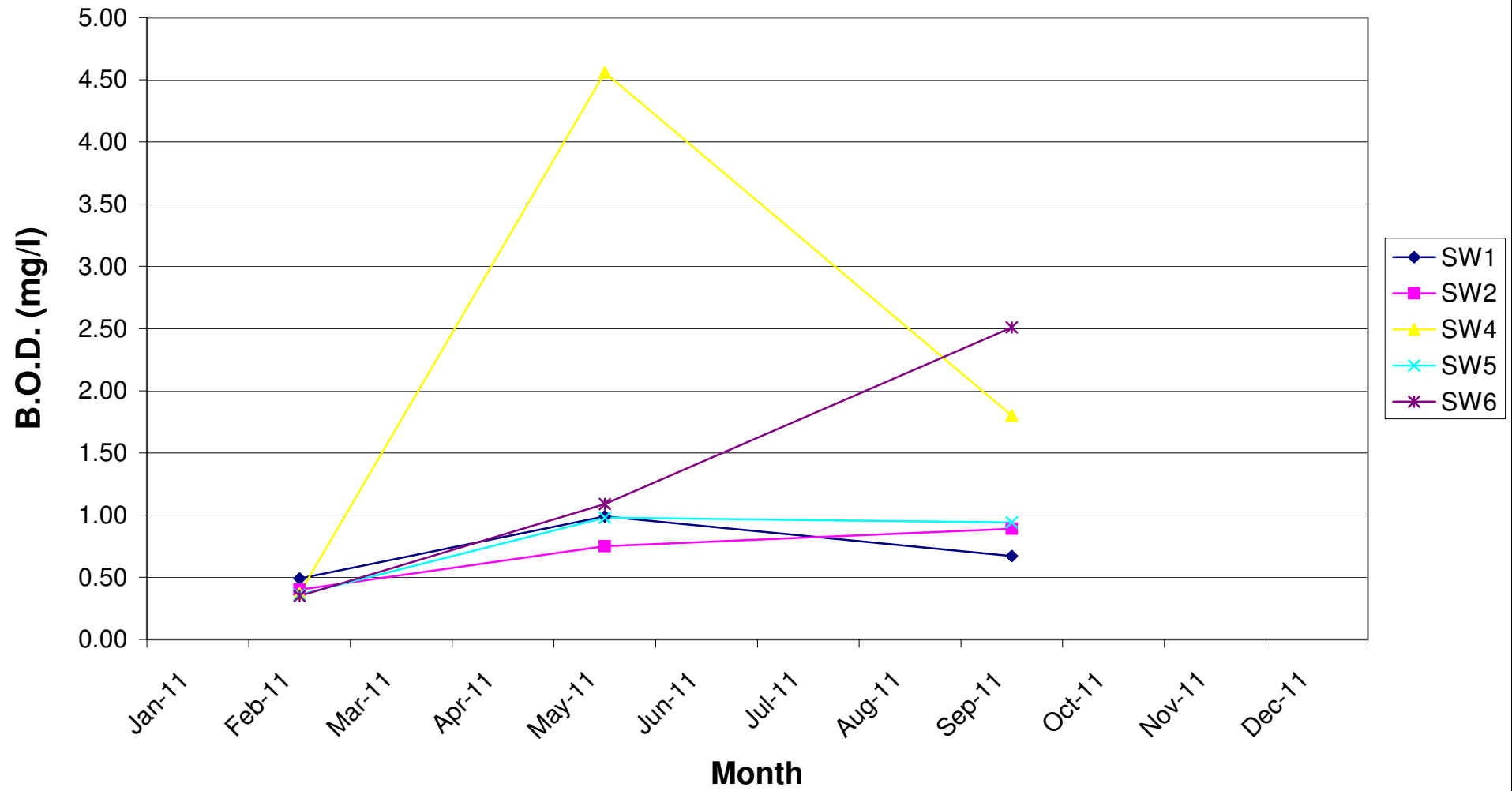
Location		Drumaboden, Kilmacrennan, Co Donegal											
Sample Type		surface water											
Site No		SW6											
Date of Sample		JAN 11	FEB 11	MAR 11	APR 11	MAY 11	JUN 11	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11
Lab No			1661			2657				5371			
pH			7.15			8.51				7.33			
Temp	C		12.55			14.02				21.00			
Electrical Conductivity	uS/cm		130			134				115			
Ammonical Nitrogen	mg/l		0.04			<0.01				0.11			
COD	mg/l		18			16				22			
BOD	mg/l		0.35			1.09				2.51			
Dissolved Oxygen	mg/l		11.65			11.81				8.02			
SS	mg/l		0.5			0.75				1.3			
Residue on Evaporator	mg/l												
Calcium	ug/l												
Cadmium	ug/l												
Chromium	ug/l												
Chloride	mg/l		30			25				23			
Chlorine	mg/l												
Copper	ug/l												
Cyanide	mg/l												
Total Iron	ug/l												
Lead	ug/l												
Magnesium	ug/l												
Manganese	ug/l												
Mercury	ug/l												
Nickel	mg/l												
Potassium	mg/l												
Sodium	mg/l												
Sulphate as S	mg/l												
Zinc	ug/l												
Total Alkalinity as CaCO3	mg/l												
Total Organic Carbon	mg/l												
Total Oxidised Nitrogen	mg/l		<0.01			<0.01				0.10			
Arsenic	mg/l												
Barium	mg/l												
Boron	ug/l												
Flouride	mg/l												
Phenol	mg/l												
Phosphorous	mg/l												
Selenium	mg/l												
Silver	mg/l												
Mircrotox	Toxic Units												
Microtox	Toxic Units												
Nitrite	mg/l		<0.03			<0.03				<0.01			
Nitrate	mg/l		<0.04			<0.04				0.10			
Phosphate - ORTHO	mg/l		0.06			0.01				0.00			
Phosphate - TOTAL	mg/l												
Total Coliforms													
Facel Coliforms													
Depth	m												

--- not applicable

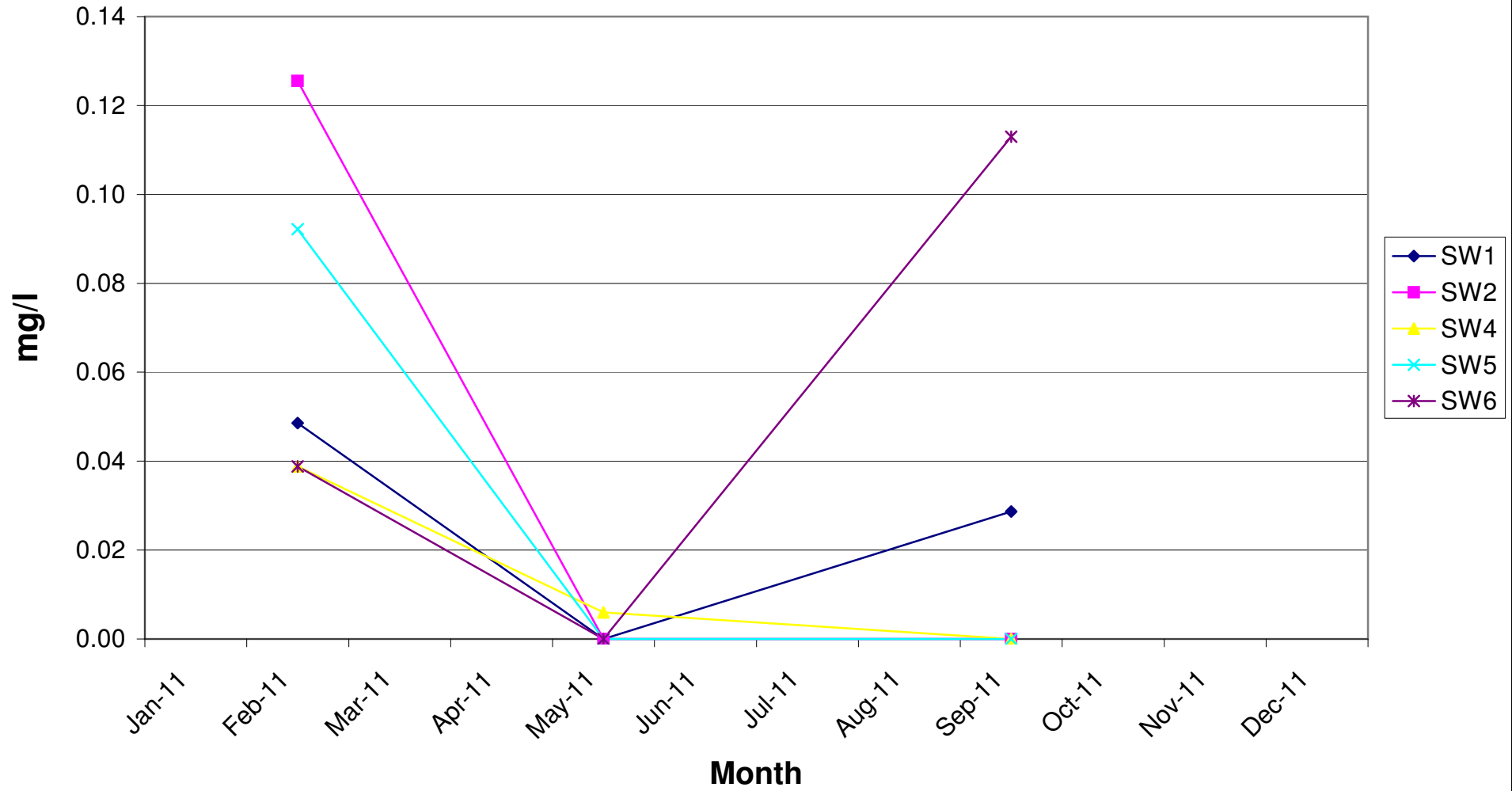
# Surfacewater Electrical Conductivity



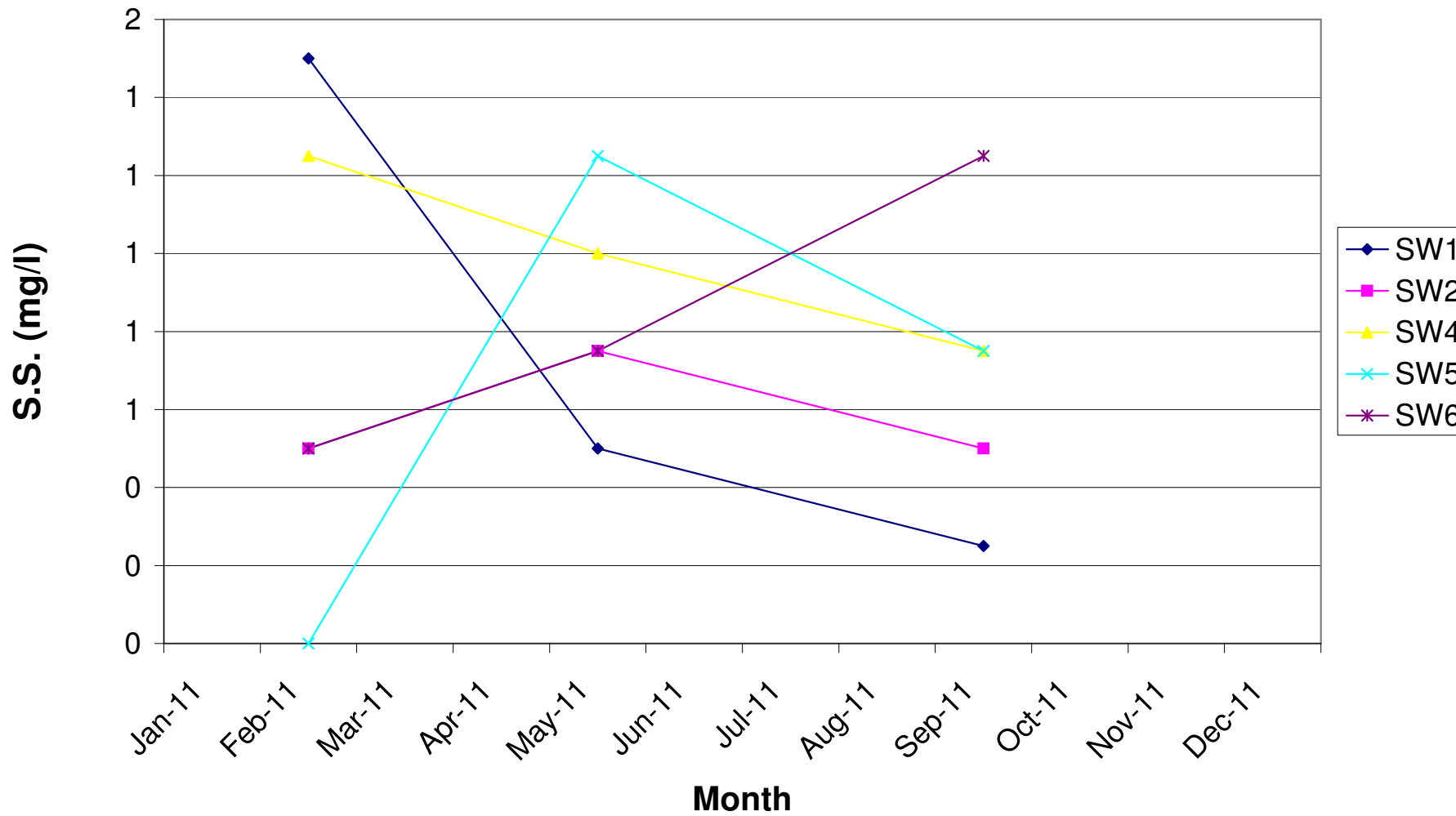
### Surfacewater B.O.D.



### Surfacewater Ammonical Nitrogen Content



# Surfacewater Suspended Solids





Location		Drumaboden, Kilmacrennan, Co Donegal											
Sample Type		groundwater											
Site No		GW1											
Date of Sample		JAN 11	FEB 11	MAR 11	APR 11	MAY 11	JUN 11	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11
Lab No			1662			2727				5323			6405
pH			6.99			8.31				7.01			6.95
Temp	C		12.62			14.90				19.70			12.90
Electrical Conductivity	uS/cm		543			410				424			432
Ammonical Nitrogen	mg/l		5.65			5.26				0.21			1.50
COD	mg/l		31			24							
BOD	mg/l												
Dissolved Oxygen	mg/l		1.90			3.06				3.09			2.49
SS	mg/l												
Residue on Evaporator	mg/l												
Calcium	ug/l												
Cadmium	ug/l												
Chromium	ug/l												
Chloride	mg/l		28			23				21			22
Chlorine	mg/l												
Copper	ug/l												
Cyanide	mg/l												
Total Iron	ug/l					0.27				1.06			
Lead	ug/l												
Magnesium	ug/l												
Manganese	ug/l												
Mercury	ug/l												
Nickel	mg/l												
Potassium	mg/l					<2.34				<2.34			
Sodium	mg/l					16.60				16.30			
Sulphate as S	mg/l												
Zinc	ug/l												
Total Alkalinity as CaCO3	mg/l												
Total Organic Carbon	mg/l									11.8000			
Total Oxidised Nitrogen	mg/l		<0.01			<0.01				0.05			<0.03
Arsenic	mg/l												
Barium	mg/l												
Boron	ug/l												
Flouride	mg/l												
Phenol	mg/l					<0.002				<0.002			
Phosphorous	mg/l												
Selenium	mg/l												
Silver	mg/l												
Mircrotox	Toxic Units												
Microtox	Toxic Units												
Nitrite	mg/l		<0.03			<0.03				<0.01			<0.03
Nitrate	mg/l		<0.04			<0.04				0.05			0.90
Phosphate - ORTHO	mg/l		0.06			0.06				0.00			1.00
Phosphate - TOTAL	mg/l												
Total Coliforms													
Facel Coliforms													
Depth	m		0.38			0.45				0.44			0.40

--- not applicable

Location		<i>Drumaboden, Kilmacrennan, Co Donegal</i>											
Sample Type		groundwater											
Site No		GW5											
Date of Sample		JAN 11	FEB 11	MAR 11	APR 11	MAY 11	JUN 11	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11
Lab No			1663			2731				5324			6406
pH			7.62			7.88				8.04			7.92
Temp	C		13.37			14.30				19.90			13.00
Electrical Conductivity	uS/cm		275.00			231				235			238
Ammonical Nitrogen	mg/l		0.04			0.01				0.21			0.27
COD	mg/l		15			18							
BOD	mg/l												
Dissolved Oxygen	mg/l		2			2.16				1.95			1.99
SS	mg/l												
Residue on Evaporator	mg/l												
Calcium	ug/l												
Cadmium	ug/l												
Chromium	ug/l												
Chloride	mg/l		30			29				30			27
Chlorine	mg/l												
Copper	ug/l												
Cyanide	mg/l												
Total Iron	ug/l					<0.019				<0.019			
Lead	ug/l												
Magnesium	ug/l												
Manganese	ug/l												
Mercury	ug/l												
Nickel	mg/l												
Potassium	mg/l					<2.34				<2.34			
Sodium	mg/l					38.30				39.40			
Sulphate as S	mg/l												
Zinc	ug/l												
Total Alkalinity as CaCO3	mg/l												
Total Organic Carbon	mg/l									<3			
Total Oxidised Nitrogen	mg/l		<0.01			<0.01				0.01			0.00
Arsenic	mg/l												
Barium	mg/l												
Boron	ug/l												
Flouride	mg/l												
Phenol	mg/l					<0.006				<0.002			
Phosphorous	mg/l												
Selenium	mg/l												
Silver	mg/l												
Mircrotox	Toxic Units												
Microtox	Toxic Units												
Nitrite	mg/l		<0.03			<0.03				<0.01			0.002
Nitrate	mg/l		<0.04			<0.04				0.01			0.008
Phosphate - ORTHO	mg/l		0.06			0.04				0.00			0.000
Phosphate - TOTAL	mg/l												
Total Coliforms													
Facel Coliforms													
Depth	m		1.00			0.85				0.87			0.78

--- not applicable

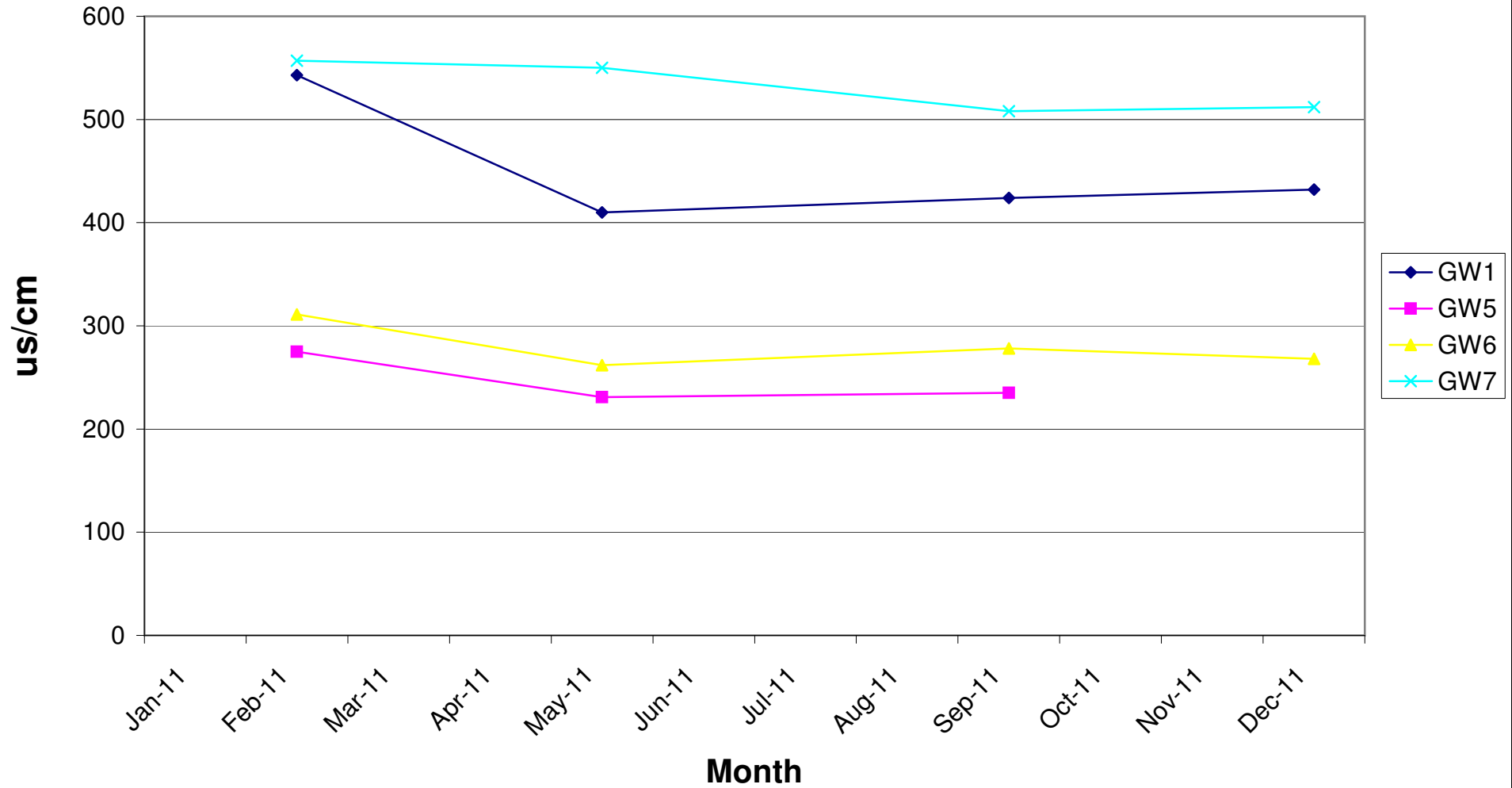
Location		Drumaboden, Kilmacrennan, Co Donegal											
Sample Type		groundwater											
Site No		GW6											
Date of Sample		JAN 11	FEB 11	MAR 11	APR 11	MAY 11	JUN 11	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11
Lab No			1664			2729				5325			6407
pH			7.28			7.95				6.58			6.32
Temp	C		7.44			14.30				18.10			12.70
Electrical Conductivity	uS/cm		311			262				278			268
Ammonical Nitrogen	mg/l		0.05			0.50				0.00			0.02
COD	mg/l		42			44							
BOD	mg/l												
Dissolved Oxygen	mg/l		12.28			2.31				1.95			8.22
SS	mg/l		0										
Residue on Evaporator	mg/l												
Calcium	ug/l												
Cadmium	ug/l												
Chromium	ug/l												
Chloride	mg/l		29			24				25			27
Chlorine	mg/l												
Copper	ug/l												
Cyanide	mg/l												
Total Iron	ug/l					<0.019				<0.019			
Lead	ug/l					<2.34							
Magnesium	ug/l					15.60							
Manganese	ug/l												
Mercury	ug/l												
Nickel	mg/l												
Potassium	mg/l					<2.34				<2.34			
Sodium	mg/l					15.60				13.10			
Sulphate as S	mg/l												
Zinc	ug/l												
Total Alkalinity as CaCO3	mg/l												
Total Organic Carbon	mg/l									17.40			
Total Oxidised Nitrogen	mg/l		<0.01			<0.01				<0.01			0.28
Arsenic	mg/l												
Barium	mg/l												
Boron	ug/l												
Flouride	mg/l												
Phenol	mg/l					<0.002				<0.002			
Phosphorous	mg/l												
Selenium	mg/l												
Silver	mg/l												
Mircrotox	Toxic Units												
Microtox	Toxic Units												
Nitrite	mg/l		<0.03			<0.03				<0.03			0.01
Nitrate	mg/l		<0.04			<0.04				<0.04			0.27
Phosphate - ORTHO	mg/l		0.06			0.06				0.06			0.28
Phosphate - TOTAL	mg/l												
Total Coliforms													
Facel Coliforms													
Depth	m		1.05			1.00				0.95			0.90

--- not applicable

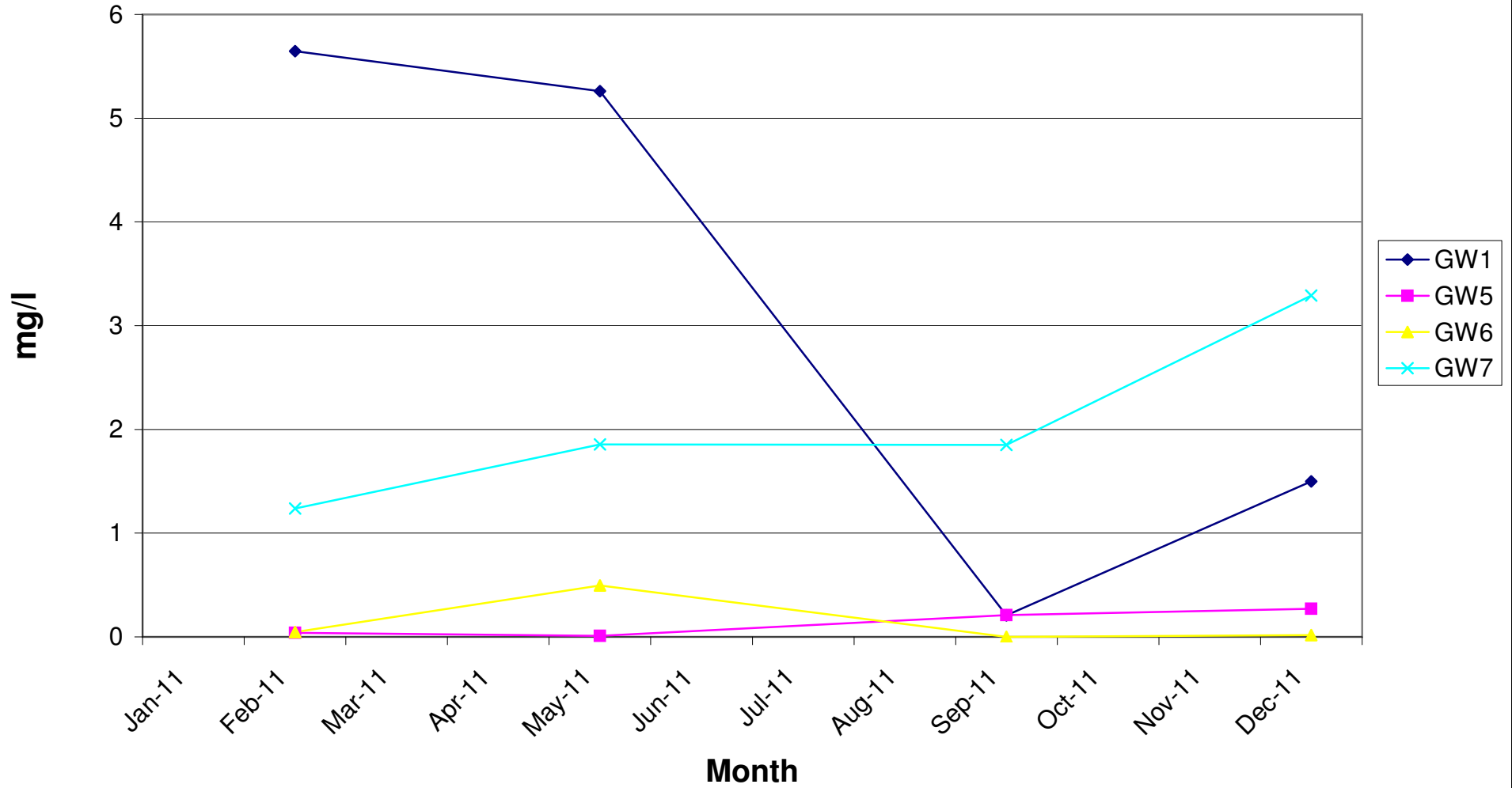
Location		Drumaboden, Kilmacrennan, Co Donegal											
Sample Type		groundwater											
Site No		GW7											
Date of Sample		JAN 11	FEB 11	MAR 11	APR 11	MAY 11	JUN 11	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11
Lab No			1665			2730				5326			6408
pH			6.82			7.98				6.80			6.45
Temp	C		12.94			14.00				17.50			13.20
Electrical Conductivity	uS/cm		557.00			550				508			512
Ammonical Nitrogen	mg/l		1.24			1.85				1.85			3.29
COD	mg/l		35.00			39							
BOD	mg/l									0.00			
Dissolved Oxygen	mg/l		2.29			1.75				2.35			2.89
SS	mg/l												
Residue on Evaporator	mg/l												
Calcium	ug/l												
Cadmium	ug/l												
Chromium	ug/l												
Chloride	mg/l		30			20				22			24
Chlorine	mg/l												
Copper	ug/l												
Cyanide	mg/l												
Total Iron	ug/l					<0.019				<0.019			
Lead	ug/l					3.520							
Magnesium	ug/l					13							
Manganese	ug/l												
Mercury	ug/l												
Nickel	mg/l												
Potassium	mg/l					3.520				<2.34			
Sodium	mg/l					13.30				15.80			
Sulphate as S	mg/l												
Zinc	ug/l												
Total Alkalinity as CaCO3	mg/l												
Total Organic Carbon	mg/l									7.8100			
Total Oxidised Nitrogen	mg/l		<0.01			<0.01				0			<0.03
Arsenic	mg/l												
Barium	mg/l												
Boron	ug/l												
Flouride	mg/l												
Phenol	mg/l					<0.002				<0.002			
Phosphorous	mg/l												
Selenium	mg/l												
Silver	mg/l												
Mircrotox	Toxic Units												
Microtox	Toxic Units												
Nitrite	mg/l		<0.03			<0.03				<0.01			0.00
Nitrate	mg/l		<0.04			<0.04				0.08			<0.04
Phosphate - ORTHO	mg/l		0.056			0.056				0.000			<0.03
Phosphate - TOTAL	mg/l												
Total Coliforms													
Facel Coliforms													
Depth	m		0.55			0.48				0.50			0.45

--- not applicable

# Groundwater Electrical Conductivity



# Groundwater Ammonical Nitrogen Content



Location		Drumaboden, Kilmacrennan, Co Donegal											
Sample Type		leachate											
Site No		L1 (Outlet)											
Date of Sample		JAN 11	FEB 11	MAR 11	APR 11	MAY 11	JUN 11	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11
Lab No			1624			2732				5373			
pH			7.23			7.53				7.37			
Temp	C		11.70			15.90				20.90			
Electrical Conductivity	uS/cm		1540			1546				1322			
Ammonical Nitrogen	mg/l		36.72			40.00				47.00			
COD	mg/l		24			29				88			
BOD	mg/l		0			7.50				6.70			
Dissolved Oxygen	mg/l		0.00			6.24				7.78			
SS	mg/l		3.0			0.00				29.00			
Residue on Evaporator	mg/l												
Calcium	ug/l												
Cadmium	ug/l												
Chromium	ug/l												
Chloride	mg/l		30.0			98.0				106			
Chlorine	mg/l												
Copper	ug/l												
Cyanide	mg/l												
Total Iron	ug/l												
Lead	ug/l												
Magnesium	ug/l												
Manganese	ug/l												
Mercury	ug/l												
Nickel	mg/l												
Potassium	mg/l												
Sodium	mg/l												
Sulphate as S	mg/l												
Zinc	ug/l												
Total Alkalinity as CaCO3	mg/l												
Total Organic Carbon	mg/l												
Total Oxidised Nitrogen	mg/l		0.11			0.11				4.93			
Arsenic	mg/l												
Barium	mg/l												
Boron	ug/l												
Flouride	mg/l												
Phenol	mg/l												
Phosphorous	mg/l												
Selenium	mg/l												
Silver	mg/l												
Mircrotox	Toxic Units												
Microtox	Toxic Units												
Nitrite	mg/l		<0.03			<0.03				0.56			
Nitrate	mg/l		<0.04			8.01				4.37			
Phosphate - ORTHO	mg/l		<0.04			0.06				0.00			
Phosphate - TOTAL	mg/l												
Total Coliforms													
Facel Coliforms													
Depth	m												

--- not applicable

Location		Drumaboden, Kilmacrennan, Co Donegal											
Sample Type		leachate											
Site No		L2 (Intake)											
Date of Sample		JAN 11	FEB 11	MAR 11	APR 11	MAY 11	JUN 11	JUL 11	AUG 11	SEPT 11	OCT 11	NOV 11	DEC 11
Lab No			1623			2731				5372			
pH			6.89			7.38				7.28			
Temp	C		12.50			15.80				18.90			
Electrical Conductivity	uS/cm		2197			1630				1436			
Ammonical Nitrogen	mg/l		129.00			56.00				51.00			
COD	mg/l		60			66				86			
BOD	mg/l		2.05			10.90				5.90			
Dissolved Oxygen	mg/l		0.00			1.30				0.38			
SS	mg/l		84.5			0.00				91.00			
Residue on Evaporator	mg/l												
Calcium	ug/l												
Cadmium	ug/l												
Chromium	ug/l												
Chloride	mg/l		122			108				111			
Chlorine	mg/l												
Copper	ug/l												
Cyanide	mg/l												
Total Iron	ug/l												
Lead	ug/l												
Magnesium	ug/l												
Manganese	ug/l												
Mercury	ug/l												
Nickel	mg/l												
Potassium	mg/l												
Sodium	mg/l												
Sulphate as S	mg/l												
Zinc	ug/l												
Total Alkalinity as CaCO3	mg/l												
Total Organic Carbon	mg/l												
Total Oxidised Nitrogen	mg/l		<0.01			<0.01				0.23			
Arsenic	mg/l												
Barium	mg/l												
Boron	ug/l												
Flouride	mg/l												
Phenol	mg/l												
Phosphorous	mg/l												
Selenium	mg/l												
Silver	mg/l												
Mircrotox	Toxic Units												
Microtox	Toxic Units												
Nitrite	mg/l		<0.03			<0.03				<0.01			
Nitrate	mg/l		<0.04			<0.04				0.23			
Phosphate - ORTHO	mg/l		0.50			<0.04				0.23			
Phosphate - TOTAL	mg/l												
Total Coliforms													
Facel Coliforms													
Depth	m												

--- not applicable



Location		<i>Drumabodan Landfill, Kilmacrennan Co Donegal</i>											
Sample Type		Landfill Gas levels											
Site No		LG1											
Date of Sample													
Parameters	Units	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Methane	%		10.6			4.8				3.6			
Carbon Dioxide	%		2.4			1.4				1.3			
Oxygen	%		18.4			21.2				19.3			
Atmos. Pressure	mBar		1007			1010				1014			

Location		<i>Drumabodan Landfill, Kilmacrennan Co Donegal</i>											
Sample Type		Landfill Gas levels											
Site No		LG2											
Date of Sample													
Parameters	Units	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Methane	%		0.0			0.0				0			
Carbon Dioxide	%		0.3			0.2				0.1			
Oxygen	%		20.0			20.1				19.9			
Atmos. Pressure	mBar		1007			1010				1014			

Location		<i>Drumabodan Landfill, Kilmacrennan Co Donegal</i>											
Sample Type		Landfill Gas levels											
Site No		LG3											
Date of Sample													
Parameters	Units	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Methane	%		0.0			0.0				0.0			
Carbon Dioxide	%		0.6			0.0				0.1			
Oxygen	%		21.7			20.8				20.5			
Atmos. Pressure	mBar		1007			1010				1015.0			

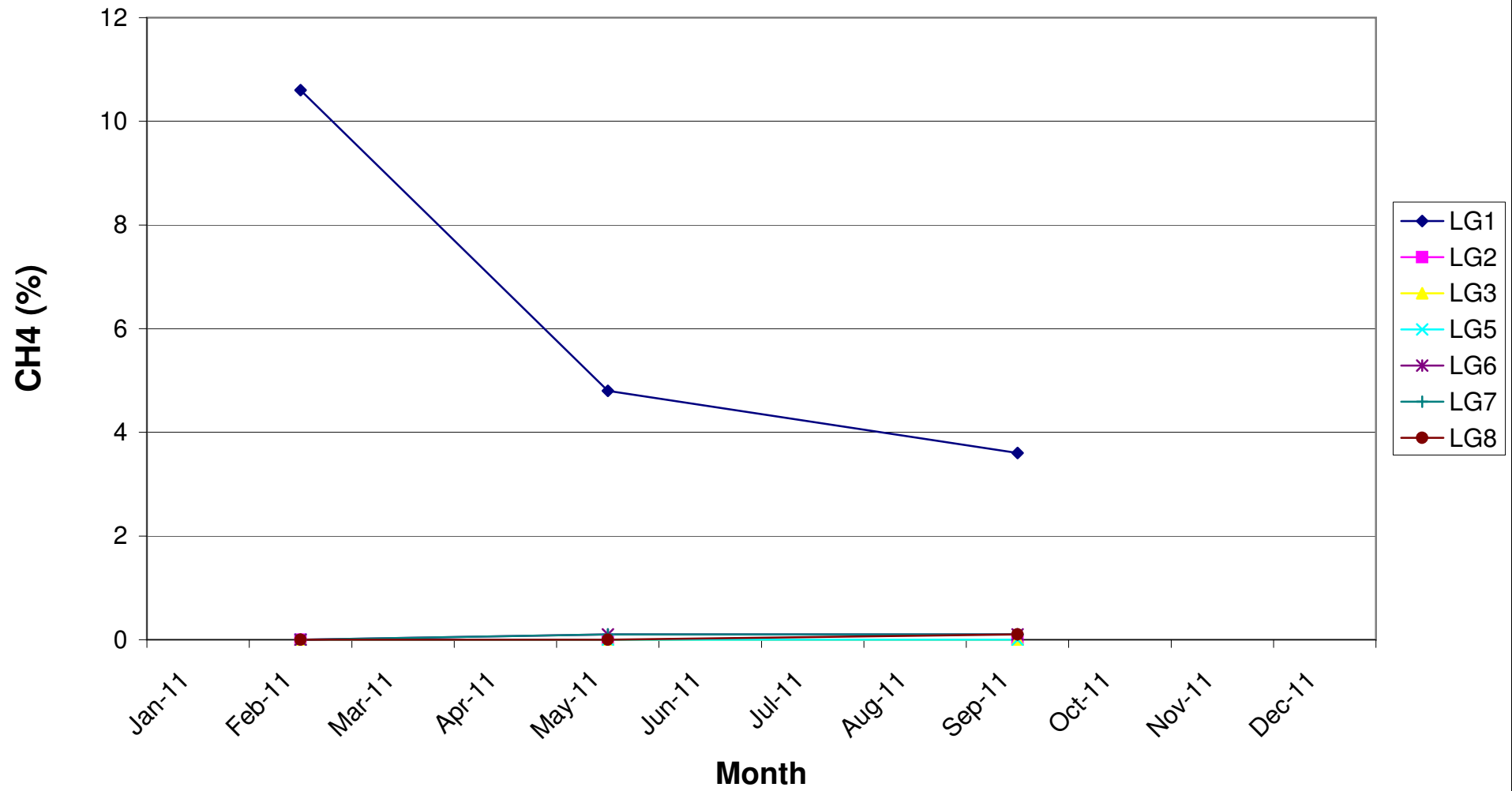
Location		<i>Drumaboden Landfill, Kilmacrennan Co Donegal</i>											
Sample Type		Landfill Gas levels											
Site No		LG5											
Date of Sample													
Parameters	Units	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Methane	%		0.0			0.0				0.0			
Carbon Dioxide	%		0.0			0.1				0.1			
Oxygen	%		21.8			20.2				20.5			
Atmos. Pressure	mBar		1007			1010				1015.0			

Location		<i>Drumabodan Landfill, Kilmacrennan Co Donegal</i>											
Sample Type		Landfill Gas levels											
Site No		LG6											
Date of Sample													
Parameters	Units	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Methane	%		0.0			0.1				0.1			
Carbon Dioxide	%		0.0			0.0				0.0			
Oxygen	%		21.7			20.5				20.7			
Atmos. Pressure	mBar		1008			1010				1015.0			

Location		<i>Drumabodan Landfill, Kilmacrennan Co Donegal</i>											
Sample Type		Landfill Gas levels											
Site No		LG7											
Date of Sample													
Parameters	Units	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Methane	%		0.0			0.1				0.1			
Carbon Dioxide	%		2.3			2.4				0.2			
Oxygen	%		19.1			18.5				20.4			
Atmos. Pressure	mBar		1008			1010				1015.0			

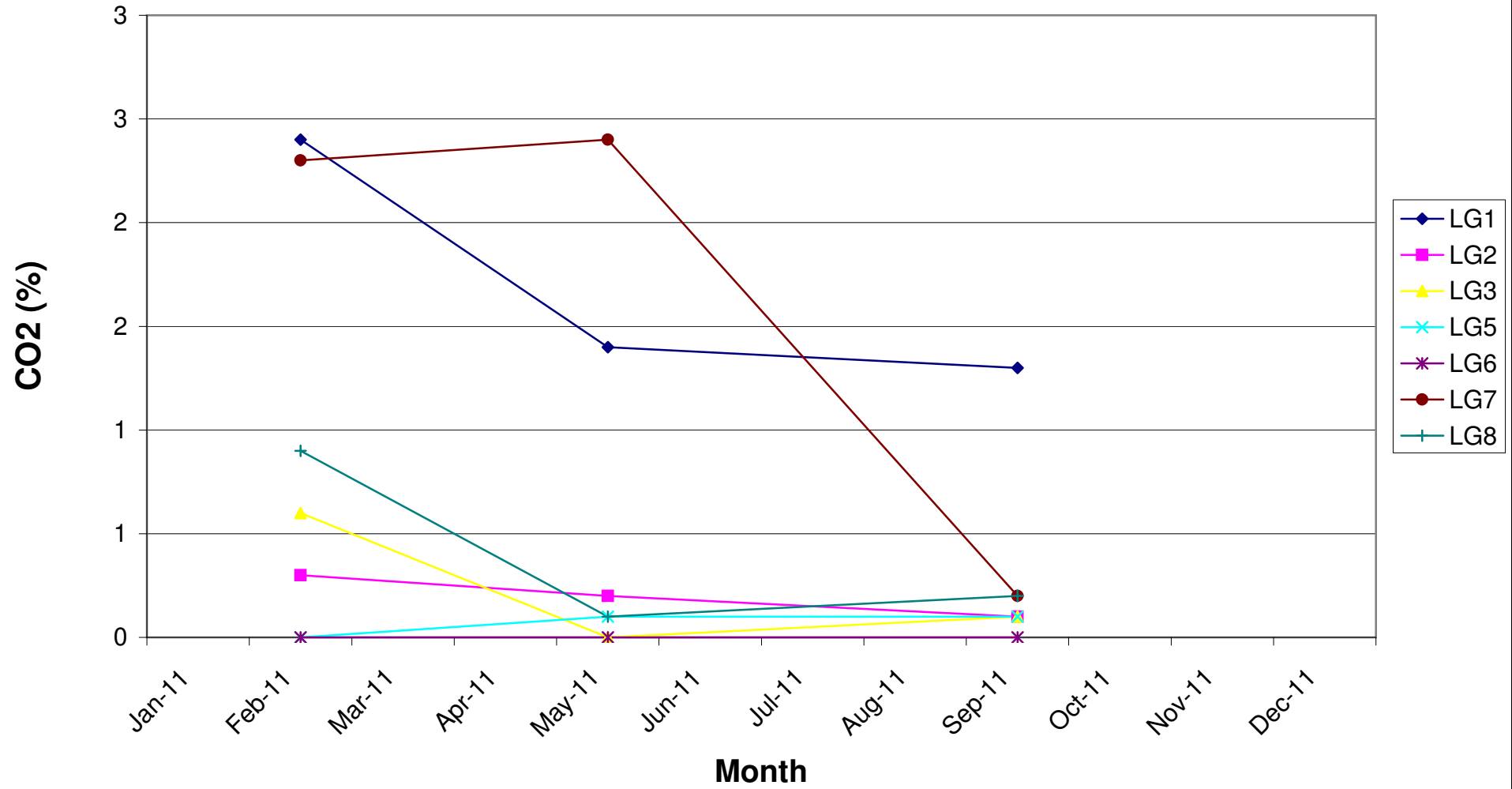
Location		<i>Drumabodan Landfill, Kilmacrennan Co Donegal</i>											
Sample Type		Landfill Gas levels											
Site No		LG8											
Date of Sample													
Parameters	Units	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Methane	%		0.0			0.0				0.1			
Carbon Dioxide	%		0.9			0.1				0.2			
Oxygen	%		21.3			20.2				20.4			
Atmos. Pressure	mBar		1008			1010				1015.0			

### Methane Levels

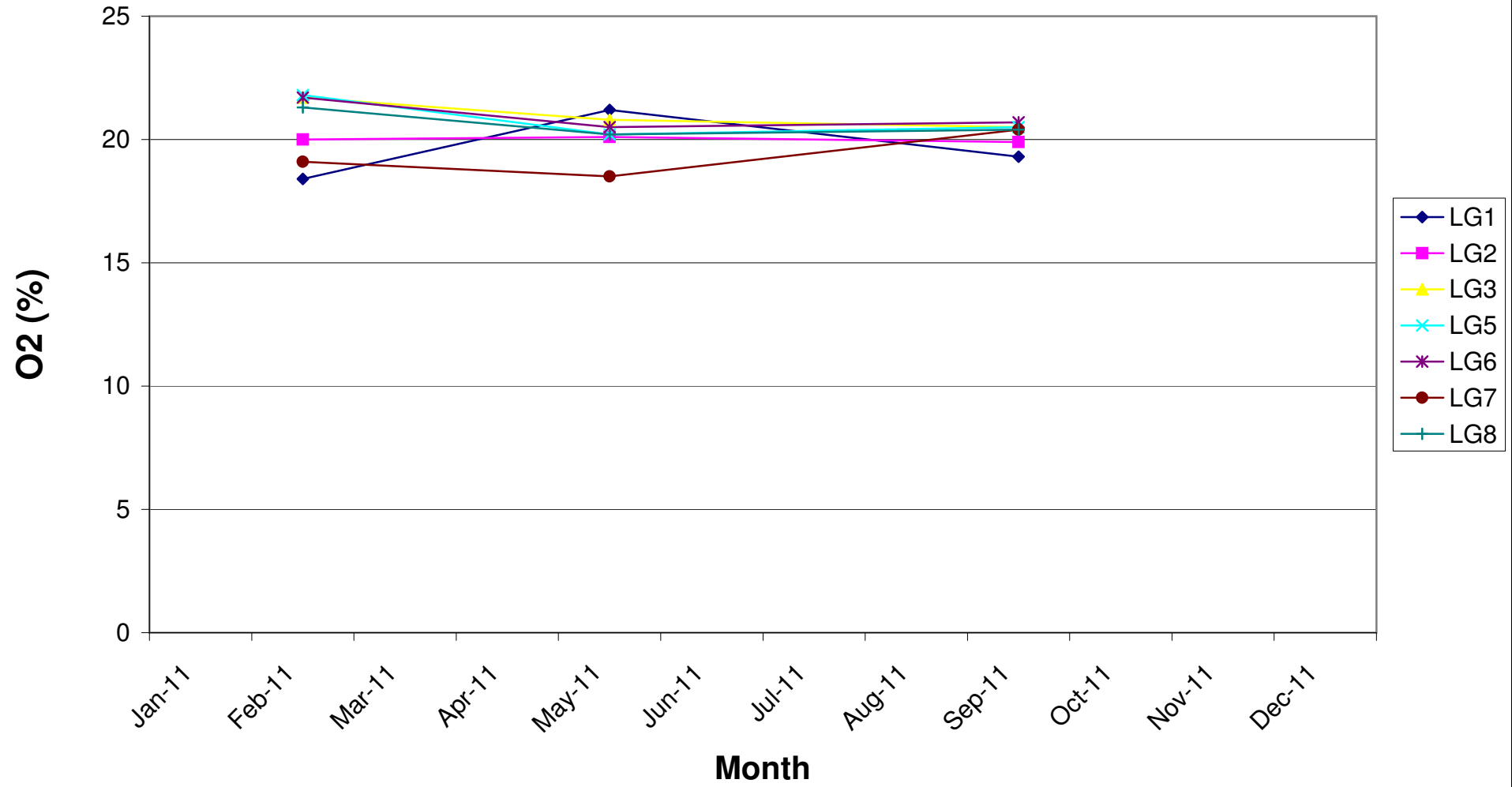




# Carbon Dioxide Levels



# Oxygen Levels



**APPENDIX B**  
**WATER BALANCE CALCULATION**

**DRUMABODEN WATER BALANCE CALCULATION**

Year	Active Phase	Rainfall (mm)	Temp	Temp	Restored area	Restored area	Leachate
			Restored area	Restored area	RCA(m2)	infiltration	produced
			IRCA(m3)	IRCA(m3)		IRCA(m3)	Lo(m3)
2011	Closed	1,232	0	0	40,500	4,990	4,990
<b>Total</b>		1,232					4,990

**Assumptions**

<b>IRCA=</b>	Fully Capped/Restored area infiltration of rainfall estimated (2-10%), EPA Manual	10%	%
<b>Landfill area</b>	Area of landfill site.	40,500	m2
<b>Rainfall Data</b>	Data taken from Met Eireann Station Malin Head, Total Rainfall used.	1232.0	mm

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2012	135.4	38.9											174.3
2011	89.6	105.4	59	66.2	100.4	84.5	49.9	79	133	177.1	103.7	184.2	1232
mean	114.2	76.6	86.5	57.5	58.9	65	71.8	91.6	102.1	118.7	114.7	102.9	1060.6

**APPENDIX C**  
**E-PRTR Regulations**  
**(AER Electronic Reporting System)**



[Guidance to completing the PRTR workbook](#)

# AER Returns Workbook

Version 1.1.13

<b>REFERENCE YEAR</b>	2011
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## 1. FACILITY IDENTIFICATION

Parent Company Name	Donegal County Council
Facility Name	Drumabodan Landfill Site
PRTR Identification Number	W0063
Licence Number	W0063-01

Waste or IPPC Classes of Activity

No.	class name
3.1	The initial melting or production of iron and steel 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.
3.13	produced.

Address 1	Kilmacrennan
Address 2	Co Donegal
Address 3	
Address 4	
Country	Donegal
Coordinates of Location	Ireland
River Basin District	-7.73872 55.0436
NACE Code	GBNIIENW
Main Economic Activity	3821
<b>AER Returns Contact Name</b>	Treatment and disposal of non-hazardous waste
<b>AER Returns Contact Email Address</b>	
<b>AER Returns Contact Position</b>	
<b>AER Returns Contact Telephone Number</b>	
<b>AER Returns Contact Mobile Phone Number</b>	
<b>AER Returns Contact Fax Number</b>	
<b>Production Volume</b>	0.0
<b>Production Volume Units</b>	
<b>Number of Installations</b>	0
<b>Number of Operating Hours in Year</b>	0
<b>Number of Employees</b>	0
<b>User Feedback/Comments</b>	
<b>Web Address</b>	

## 2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
50.1	General
50.1	General

## 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 ?	

4.1 RELEASES TO AIR

[Link to previous years emissions data](#)

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

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 PRTR POLLUTANTS

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				
55	1,1,1-trichloroethane	M	OTH	Landgem- v302	0.0	0.0	0.0	0.0
56	1,1,2,2-tetrachloroethane	M	OTH	Landgem- v302	0.0	1.257	0.0	1.257
34	1,2-dichloroethane (EDC)	M	OTH	Landgem- v302	0.0	3.623	0.0	3.623
62	Benzene	M	OTH	Landgem- v302	0.0	0.7962	0.0	0.7962
02	Carbon monoxide (CO)	M	OTH	Landgem- v302	0.0	2.912	0.0	2.912
35	Dichloromethane (DCM)	M	OTH	Landgem- v302	0.0	76.95	0.0	76.95
21	Mercury and compounds (as Hg)	M	OTH	Landgem- v302	0.0	23.34	0.0	23.34
03	Carbon dioxide (CO2)	M	OTH	Landgem- v302	0.0	0.001142	0.0	0.001142
01	Methane (CH4)	M	OTH	Landgem- v302	0.0	431800.0	0.0	431800.0
73	Toluene	M	OTH	Landgem- v302	0.0	157400.0	0.0	157400.0
60	Vinyl chloride	M	OTH	Landgem- v302	0.0	70.51	0.0	70.51
78	Xylenes	M	OTH	Landgem- v302	0.0	8.954	0.0	8.954
					0.0	25.0	0.0	25.0

\* 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)

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

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:	Drumabodan 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)	157400.0			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)	157400.0				N/A

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

| PRTR# : W0063 | Facility Name : Drumabodan Landfill Site | Filename : W0063\_2011.xls | Return Year : 2011 |

04/04/2012 15:58

**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 concerns Releases from your facility

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		Method Used			QUANTITY			
No. Annex II	Name	M/C/E	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		Method Used			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
79	Chlorides (as Cl)	M	CRM	DCC-SOP	0.0	389.22	0.0	389.22

\* 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		Method Used			QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
238	Ammonia (as N)	M	CRM	DCC-SOP	0.0	205.78	0.0	205.78
303	BOD	M	CRM	DCC-SOP	0.0	23.62	0.0	23.62
306	COD	M	CRM	DCC-SOP	0.0	234.53	0.0	234.53
372	Nitrite (as N)	M	CRM	DCC-SOP	0.0	1.05	0.0	1.05
387	Ortho-phosphate (as P)	M	CRM	DCC-SOP	0.0	0.0	0.0	0.0
327	Nitrate (as N)	M	CRM	DCC-SOP	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# : W0063 | Facility Name : Drumabodan Landfill Site | Filename : W0063\_2011.xls | Return

04/04/2012 16:03

**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# : W0063 | Facility Name : Drumabodan Landfill Site | Filename : W0063\_2011.xls | Return Year : 2011 |

04/04/2012 16:05

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