Ballinasloe Town Council
Comhairle Baile Béal Atha na Slua

Pollboy Landfill

ANNUAL ENVIRONMENTAL REPORT (AER) 2008

November 2009

RPS

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Pollboy Landfill

Annual Environmental Report (AER) 2008

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Consulting Engineers

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1 REPORTING PERIOD

The reporting period is from the 1st January 2008 to the 31st December 2008.

The Waste Licence for this site for the period 1st January 2008 to 31st December 2008 was Waste Licence Reg. No. W0027-02. This landfill facility closed for acceptance of waste on 31st December 2005.

2 SITE DEVELOPMENT WORKS

2.1 DEVELOPMENT WORKS DURING THE REPORTING PERIOD

The following works were completed during the reporting period:

2.1.1 Old Landfill

Gas Main Reinstatement Works

These works involved the installation of two new gas main header pipes above ground along the top of the landfill and down to the flare compound. The purpose of the works was to replace the existing gas main on the old landfill. The original gas main had been placed within the capping layer and connections from the gas wells to the gas main had become broken due to settlement. Gas carrier pipes from all wells connect into these new header pipes.

New Electrical Pump in Chamber CH3

These works involved the provision of an electrical pump in the CH3 chamber sump and connection to the existing leachate collection system. A pump panel to match existing panels on the leachate collection system was also provided.

2.1.2 Cell 1

Installation of 5 no. Pneumatic Leachate Pumps

The works involved the installation of 5 no. pneumatic pumps including all pipework, fittings, compressors, compressed airlines and flow counters in 5 no. existing wells in Cell 1. 63mm MDPE leachate pipe lengths were also required to connect between the leachate wells and the existing 63mm leachate main which runs above ground (in parallel with the landfill gas main) to the leachate lagoon.

Installation of Additional Landfill Gas Extraction Wells.

3 no. additional gas/leachate boreholes with dual well heads were installed in Cell 1 in early 2008.

2.2 PROPOSED DEVELOPMENT WORKS

The following works are proposed for 2009:

- Installation of 3 no. additional leachate/gas extraction wells on the old landfill to replace redundant wells
- Landfill and civic amenity facility landscaping works in accordance with Landscaping Specification
- Leachate Storage: Address the recommendations of the "Review and upgrading of Leachate Management Report (October 2008)" with regard to upgrading the leachate telemetry system and the provision of additional leachate storage capacity at the landfill.

3 WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

Licensed Waste Disposal and Recovery Activities were carried out in accordance with the Third and Fourth Schedules of the Waste Management Act 1996 as per Part 1 Licensed Activities of Waste Licence W0027-02. The facility accepts waste on Tuesdays, Thursdays and Saturdays between 8.30am and 4.30pm.

4 QUANTITY AND COMPOSITION OF WASTE

Tables 4.1 below outlines the categories and quantities which may be accepted for disposal and for recovery under Waste Licence W0027-02.

Table 4.1: Waste Categories and Quantities to be Accepted for Recovery

Waste Type	Maximum Quantity
Waste to be accepted for composting	Maximum Quantity of biodegradable waste which can be processed = 1,000m^3
Waste to be accepted at Civic Waste Facility (Metal, electrical and electronic waste, glass, aluminium and tin cans, waste oils, fabrics, batteries, household hazardous, fluorescent tubes can all be accepted)	Tonnage to be agreed with the Agency.

Table 4.2 provides details on the quantity and composition of waste that was accepted for recovery in 2008 at Pollboy Landfill Civic Amenity Facility.

Table 4.2: Waste Accepted at Civic Waste Facility for Recovery in 2008

EWC Code	Quantity (tonnes)	Description of waste	Hazardous waste. Y/N	Waste Treatment Operation
15 01 07	6.98	Glass Bottles and Jars	N	R13
20 01 02	10.08	Flat Glass	N	R13
15 01 04	0.54	Steel Cans	N	R13
20 01 40	51.63	Household Scrap Metal	N	R13
20 01 10	2.48	Clothes	N	R13
20 01 33	0.4	Small Batteries	Y	R6
16 06 01	8.36	Lead Acid Batteries	Y	R6
16 01 07	0.72	Oil Filters	Y	R12
20 01 27	14.23	Waste Paint	Y	D10
20 01 23	15.96	Fridges and Freezers	Y	R4
20 01 36	46.25	White Goods (Electrical and Electronic)	N	R4

EWC Code	Quantity (tonnes)	Description of waste	Hazardous waste. Y/N	Waste Treatment Operation
20 01 35	20.04	Televisions and PC Monitors	Y	R4
20 01 21	0.04	Fluorescent Tubes and Lighting	Y	D10
20 01 99	35.24	White Goods incl. washing machines, dryers, toasters, radios etc.	N	R4
13 07 03	2.84	Waste Oil	Y	R9

5 SUMMARY OF EMISSIONS AND MONITORING

Quarterly monitoring results for leachate, groundwater and surfacewater are contained in Appendix 5. A summary of emissions and monitoring during 2008 in accordance with the Waste licence is provided in the following sections.

5.1 NOISE

There were no noise surveys carried out during 2008, due to the closure of the landfill on the 31st December 2005. Noise was generated in the most part by compaction and placement machinery which are no longer operational.

5.2 DUST

There were no dust surveys carried out during the course of the year, due to the closure of the landfill on the 31st December 2005.

5.2 LANDFILL GAS

5.2.2 Off Site Gas Migration

Migratory Boreholes

Appendix 1 (Drawing No. DG0001–04 F07) shows the locations of boreholes used to monitor off-site gas migration as well as the results obtained for gas emissions from these boreholes during 2008.

The emission limit values for off-site gas migration in Waste Licence W0027-02 Schedule C are 20% LEL (1% v/v) for methane and 1.5% v/v for carbon dioxide. Appendix 1 shows that all the results obtained for monitoring of off-site gas migration were within these emission limit values for methane and carbon dioxide.

5.2.3 Buildings

In November 2003 a gas monitor was placed in the main control office of the administration building at the landfill which measures the concentration of methane and carbon dioxide in the air. Neither of these parameters were detected during the reporting period.

5.2.4 Flare Emissions

No flare emissions monitoring was carried out during 2008.

5.3 LEACHATE

In 2008 three leachate sampling points were used for monitoring purposes; L14, CH1 and the leachate lagoon. In the first quarter of 2008 samples were also taken from L11. In the first quarter a full suite of parameters was tested for at all four sampling points.

All of these samples were analysed by the EPA and all the results were within the emission limit values outlined in Schedule C.5. of the Waste Licence W0027-02.

The samples taken at all leachate sample points were within the requirements as set out in Schedule C.5. of the Waste Licence W0027-02, with the exception of COD levels recorded at CH1 in Q2 of 2008. The level recorded here was 3,020 mg/l O_2 which slightly exceeded the limit as set out under schedule C.5 of 3,000 mg/l O_2 .

Appendix 2 shows the location of these sampling locations on drawing DG0001-07 F08. All results were forwarded to the EPA in the quarterly monitoring reports.

5.4 SURFACE WATER

Appendix 3 (Drawing No. DG0001–05 F02) shows the positions of the seven surface water sampling locations (SW1, SW3 - SW8). These sampling points were chemically analysed by the EPA in each quarter of 2008. It should be noted that SW8 was not sampled in Q2 and SW7 was not sampled in Q1, Q3 and Q4.

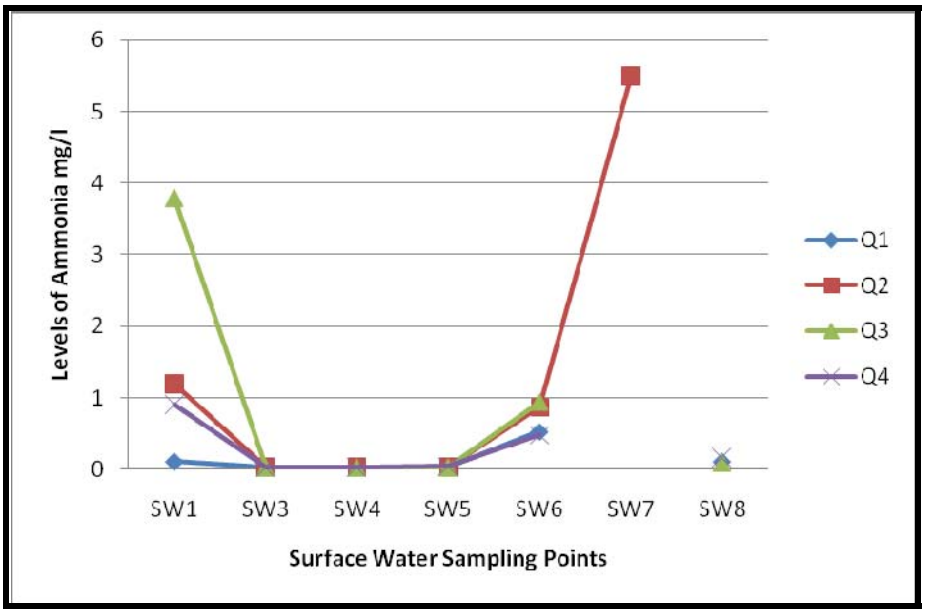
The results obtained were compared to standards as set out in SI 278, 2007 – European Communities (Drinking Water) (No. 2) Regulations.

Levels of ammonia were above the required limit of 0.3mg/l (as set out in SI 278, 2007) for some of the surface water sampling points. Sampling point SW6 had a slightly elevated level of ammonia in Q1 of 0.53 mg/l, which increased to 0.95 mg/l in Q3. Sampling point SW1 also had elevated levels of ammonia in Q2, Q3 and Q4 of 1.2mg/l, 3.8mg/l and 3.8mg/l respectively. The highest recorded level of ammonia throughout 2008 was recorded at SW7 in Q3 when a level of 5.5mg/l of ammonia was recorded.

Levels of pH, suspended solids, BOD, COD, chloride and conductivity were all within the required standard for each sampling quarter.

Figure 5.1 shows the ammonia levels in the surface water sampling points for 2008.

Figure 5.1 Ammonia Levels in Surface Water for the Reporting Period (SW1, SW3-SW8)



5.5 GROUNDWATER

Appendix 4 (Drawing No. DG0001-01 F08) shows the positions of groundwater sampling locations. Sampling and analysis was carried out during the year by the EPA. The monitoring results were forwarded to the EPA in the quarterly monitoring reports. In the first quarterly monitoring analysis was carried out on all samples for heavy metals, in accordance with the requirements of schedule D.5 of the waste licence.

The sampling points monitored throughout 2008 varied from quarter to quarter and so a clear pattern of groundwater quality at each sampling point is not possible to determine for the year. Only sampling points MW1, MW3 and MW6 were sampled in each of the four quarters.

Sampling point RC2, RC3 and B8A were all sampled in Q1, Q2 and Q4. Levels of ammonia recorded for RC2 show a persistent level of 1.4 mg/l for Q1, Q2 and Q4. At RC3 levels varied between 7.5 mg/l and 8.4 mg/l and at B8A the levels ranged from 0.98

mg/l to 1.0 mg/l. These three sampling points are all down gradient of the landfill and sample point RC3 is located approximately 10 metres from the waste mass. The elevated levels of ammonia sampled at this point is consistent with previous sampling results over the past two years. Levels recorded at B8A show a similar ammonia level recorded at this point in 2006 and in 2007.

It should be noted that monitoring points upstream of the landfill (BMW1, BMW2, and BMW3) showed levels of ammonia in Q3 of 0.45mg/l up to 8.2 mg/l. It is therefore considered that there are other contributing sources affecting the quality of the groundwater in this area.

Levels of chloride were not elevated in 2008.

5.6 METEOROLOGICAL DATA

No meteorological data was recorded at the site during 2008. Meteorological data for 2008 from the nearest weather station, Birr, Co. Offaly, is attached in Appendix 6.

6 RESOURCE AND ENERGY CONSUMPTION SUMMARY

184,650 kWh of electricity were used at the landfill during 2008.

7 LEACHATE VOLUMES PRODUCED AND TRANSPORTED OFF SITE

The following table shows the quantities of leachate pumped off-site to Ballinasloe Waste Water Treatment Plant during 2008.

Table 7.2: Quantity of Leachate Discharged via Rising Main to WWTP

Month	Quantity of leachate discharged (m^3)
January	1,982
February	1,739
March	2,085
April	2,149
May	1,182
June	686
July	1,216
August	753
September	1,318
October	1,003
November	760
December	988
Total Volume	**15,861**

8 REPORT ON RESTORATION OF COMPLETED CELLS AND FINAL LEVELS

The Restoration and Aftercare Plan for Pollboy Landfill was submitted to the EPA in February 2003.

9 SITE SURVEY

The most recent topographical survey, which is contained in Appendix 8, was carried out in October 2009.

10 QUANTITY OF LANDFILL GAS

A Gas Utilisation Feasibility Study for Pollboy Landfill was prepared in August 2005. As part of this study the total quantity of landfill gas generated was estimated using the GasSim Model. For comparison purposes, an estimate was also made using the "Rule of Thumb" method contained in the EPA Landfill Site Design Manual. This assumes that a tonne of waste produces 6m3 of landfill gas per year from the time of emplacement. Results are shown in Figures 10.1 and 10.2, for each modelling exercise.

Figure 10.1: Total Bulk Landfill Gas 1998 to 2035 at the 50th Percentile

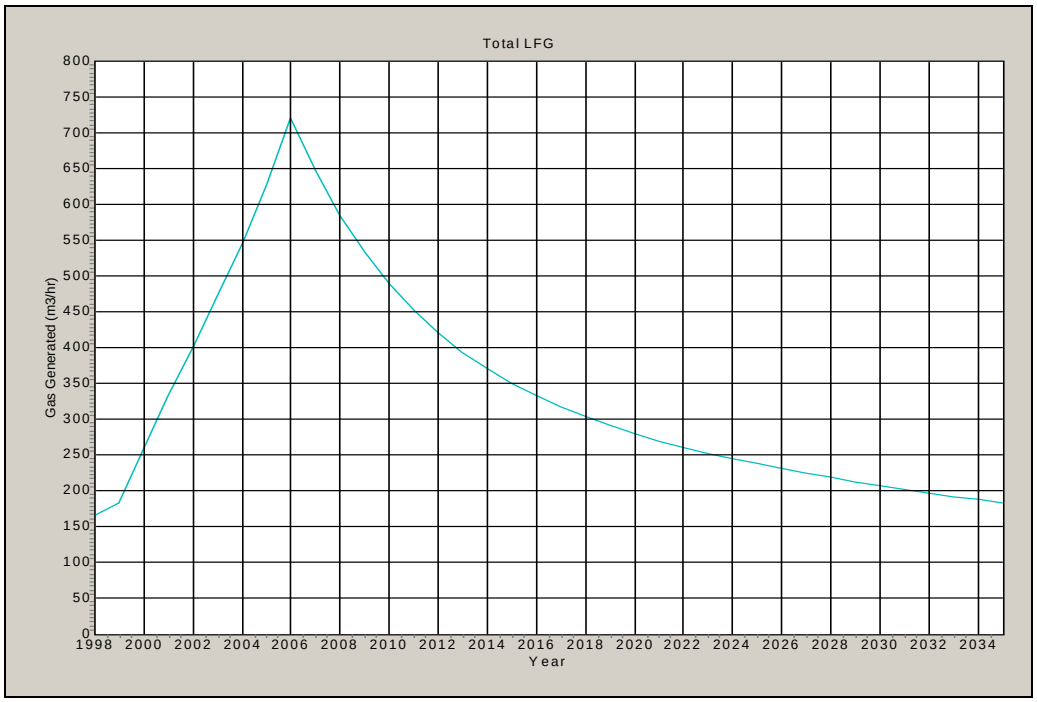
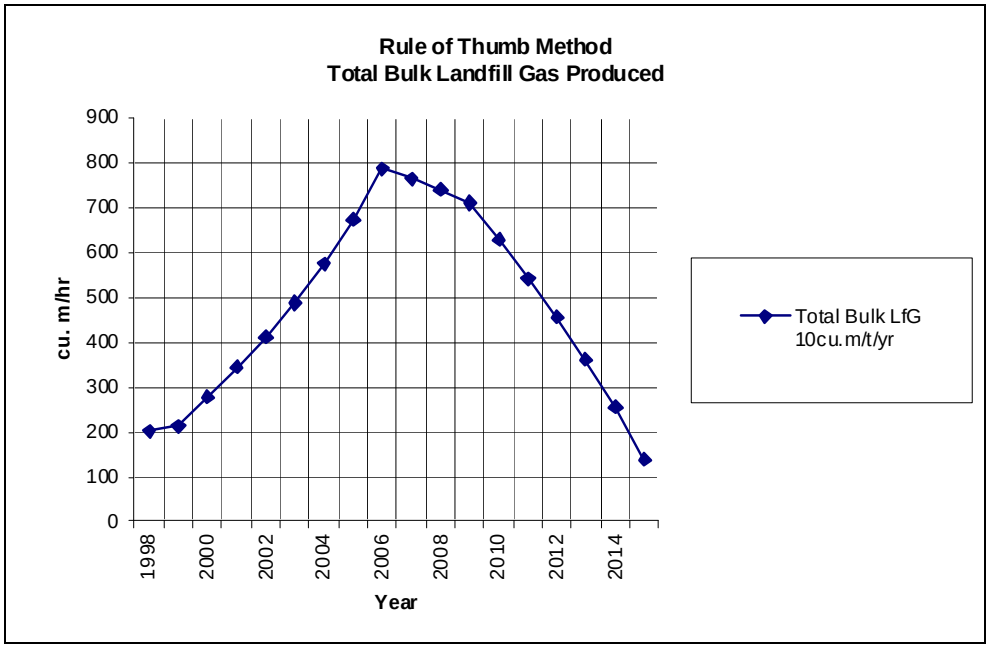


Figure 10.2: Estimation of Landfill Gas Potential using Rule of Thumb Method, 1998-2015



For 2008, a generation rate of 720 m^3/hr of landfill gas was estimated using the GasSim Model and 729 m^3/hr was estimated using the Rule of Thumb method.

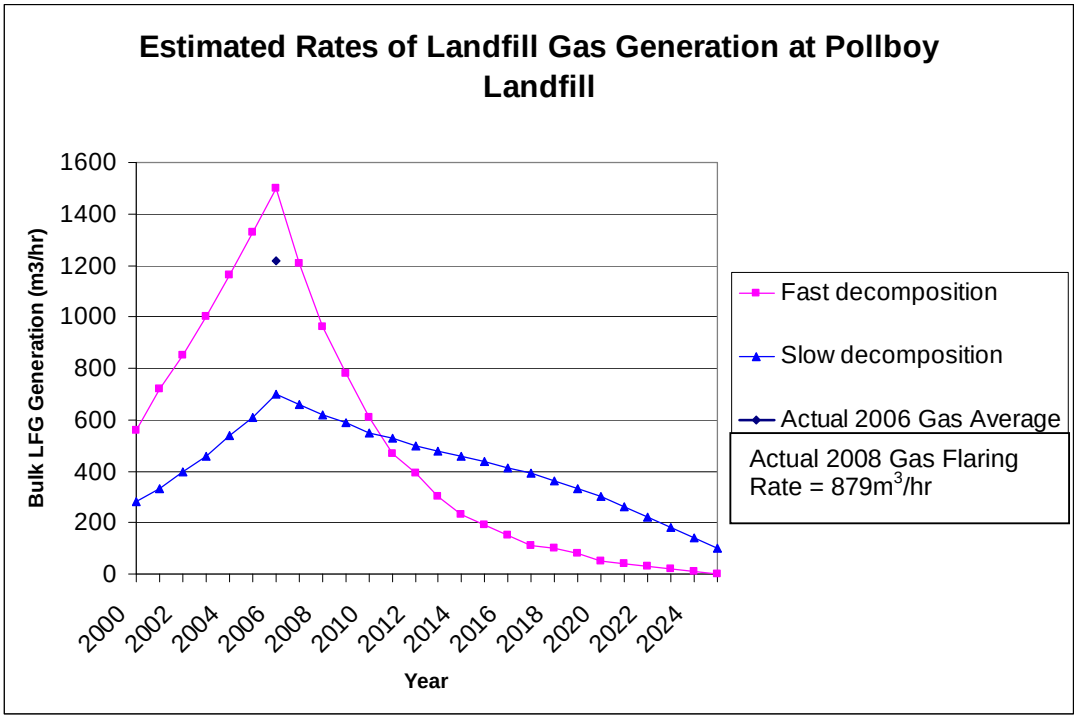
The above results are theoretical rates of landfill gas production and should be viewed with caution. Some models can over predict the quantities of gas to be generated while others can underestimate.

A landfill gas pumping trial was carried out in 2005 to demonstrate the extracted landfill gas quantity and quality that could be obtained through active gas extraction from the existing wells using the available flare on site. This trial was carried out as part of the study into the feasibility of power generation at the landfill. Estimates of future landfill gas generation rates were made by the pumping trial contractor, based on waste input data, the results of monitoring carried out during the trial and using his own in-house model. Estimates were made based on fast decomposition and slow decomposition of the waste as down in Figure 10.3. This figure demonstrates the possible variation in generation rates. Based on this model, the landfill gas generation rate at the facility in 2008 could vary between 600 and 950 m^3/hr.

Based on monitoring results, the mean volume of gas flared at the facility for 2008 was as follows:

- 387m^3/hr in the old landfill cell
- 492m^3/hr in Cell 1

Figure 10.3: Estimated Rates of Landfill Gas Generation at Pollboy Landfill



11 WATER BALANCE CALCULATION

Factors which affect the rate of generation of leachate include precipitation, surface run-off, evapotranspiration, moisture released and absorbed in waste, moisture used during decomposition and vapour contained in gas. Of these, precipitation, surface run-off and evapotranspiration are the major contributors.

The model of the water balance for leachate generation can be represented mathematically as follows:

$L_o = [(ER.A)+LIW+IR]-[aW+MCW]$

where:

L_o	=	Free leachate produced
ER	=	Effective rainfall i.e. actual rainfall minus [potential evapotranspiration plus soil moisture deficit]
A	=	Area of cell
LIW	=	Liquid Industrial Waste (e.g. sludge)
IR	=	Infiltration (from restored areas only)
aW	=	Absorption capacity of waste
MCW	=	Moisture Consumption of Waste

For the purposes of this estimation, the contributions due to Liquid Industrial Waste, Absorption Capacity of Waste and the Moisture Consumption of Waste have been ignored.

Capping of a landfill typically reduces rainwater infiltration into the waste by up to 90%. For the purposes of this estimation, a reduction of 85% has been assumed. Based on an annual precipitation of 923mm/year and an annual evapotranspiration of 454mm/year, leachate generation from the landfill was estimated for the current landfill scenario of old landfill (unlined) and Phase 1(lined) cells – both are capped.

The Water Balance Calculation is contained in Appendix 7.

12 ENVIRONMENTAL MANAGEMENT

12.1 REVIEW OF OBJECTIVES AND TARGETS SET OUT FOR 2008

Objective 1: Restoration and Aftercare of the Landfill (Landscaping)

Reason for Undertaking Project: To protect the surrounding environment and integrate the site with the surrounding landscape.

Target: To complete landscaping works in accordance with Restoration Plan

Responsibility: Ballinasloe Town Council was responsible for the implementation of this project.

Progress: A landscaping specification was prepared in October 2008. Landscaping/planting was originally proposed in Spring 2009. This was then postponed to the next planting season.

Objective 2: Landfill Gas Management

Reason for Undertaking Project: To further improve landfill gas and odour control at the facility.

Target: To reduce the landfill gas odour problems at the landfill.

Summary: Reinstatement of landfill gas main serving old landfill by laying 2 no. new gas main header pipes above ground along the top of the landfill and down to the flare compound. Gas carrier pipes from all functioning wells were connected into these new header pipes. A further length of gas header pipe was required to connect to northerly gas wells and to the existing knockout pot beside the old flare location. Drip legs were connected to the existing leachate management system at the low points of the gas main.

Responsibility: The Landfill Facility Manager was responsible for the implementation of this project.

Progress: The gas main reinstatement works as outlined above were carried out in November 2008. The installation of 3 No. dual head gas/leachate extraction wells was carried out in early 2008.

Objective 3: Leachate Management

Reason for Undertaking Project: To reduce high levels of leachate in Cell 1 and to increase removal efficiency.

Target: To install new leachate pumps where required.

Summary: This work involved the installation of 5 no. pneumatic pumps including all pipework, fittings, compressors, compressed airlines and flow counters in 5 no. existing wells in Cell 1. 63mm MDPE leachate pipe lengths were also required to connect between the leachate wells and the existing 63mm leachate main which runs above ground (in parallel with the landfill gas main) to the leachate lagoon.

Responsibility: The Landfill Facility Manager was responsible for the implementation of this project.

Progress: The works as outlined above were completed on site in August 2008.

Objective 4: Provision of an electrical pump in leachate sump adjacent to former composting facility

Reason for Undertaking Project: To negate the need for tankering leachate from this sump.

Target: To carry out this work prior to heavy rainfall in winter months

Project summary: This work involved the provision of an electrical pump in this sump and connection to the existing leachate collection system. A pump panel to match existing panels on the leachate collection system was also provided on this pump.

Responsibility: The Landfill Facility Manager was responsible for the implementation of this project.

Progress: This work was carried out in November 2008.

12.2 SCHEDULE OF OBJECTIVES AND TARGETS FOR 2009

Objective 1: Restoration and Aftercare of the Landfill

Reason for Undertaking Project: To protect the surrounding environment and integrate the site with the surrounding landscape.

Target: To ensure completion of topsoiling and landscaping works

Responsibility: The Landfill Facility Manager is responsible for the implementation of this project.

Timescale: The topsoiling and landscaping works will be carried out in Spring/early Summer to coincide with the best season for planting

Objective 2: Landfill Gas Management

Reason for undertaking project: To further improve landfill gas and odour control at the facility.

Target: To install replace redundant landfill gas boreholes where required

Summary: Wells providing low/no gas to the system will be disconnected and new wells will be installed. The north eastern area of the old landfill cell has been identified as one such location.

Responsibility: The Landfill Facility Manager is responsible for the implementation of this project.

Timescale: The installation of new gas wells will be carried out during the year as the need for additional wells is identified.

Objective 3: Leachate Management Upgrade

Reason for undertaking project: To improve the efficiency of leachate management

Target: Carry out extensive leachate sampling, explore additional storage capacity options and upgrade telemetry system to reduce pumping, operational and staff overtime costs

Summary:

1) **Leachate Sampling**
Extensive sampling of leachate and WWTP influent and effluent to be carried out in order to provide an accurate picture of leachate loadings to the plant and their impact on the WWTP's treatment process. Sampling should also be undertaken from the perimeter leachate interceptor drain to monitor the water quality.

2) **Additional Leachate Storage**
Additional leachate storage is required for the contaminated groundwater currently being collected and pumped from the leachate interceptor drain around the perimeter of the old landfill cell. In addition, it is evident that volumes of leachate have increased significantly since the commencement of pumping of leachate from the new pump located adjacent to the composting facility.

Options for providing additional leachate storage capacity at the landfill to be explored.

3) **Telemetry**
Existing telemetry system to be upgraded to reduce pumping, operational and staff overtime costs.

Responsibility: The Landfill Facility Manager is responsible for the implementation of this project.

Timescale: Leachate sampling to be carried out during April – September 2009. Proposals for telemetry upgrade and additional storage to be based on sampling results during this period.

13 SUMMARIES OF REPORTED INCIDENTS & COMPLAINTS

There were no complaints registered with the landfill in 2008. All incidents at the landfill concerned emission limit exceedences which are summarised in Section 5.

14 REVIEW OF NUISANCE CONTROLS

14.1 ODOUR

Odour management at the facility has significantly improved since 2005, as a result of the following works being carried out:

- Installation of temporary clay capping immediately following cessation of filling.
- Installation of permanent capping system incorporating, inter alia, an LLDPE membrane and landfill gas drainage geocomposite layer.
- Installation of additional landfill gas collection wells in Cell 1.
- Use of two flares for gas management and control.
- Reinstatement of gas management system on old landfill.

14.2 VERMIN

Currently there is no evidence of vermin present on the site. ISS (Pest Control), Letterkenny are contracted to control the vermin on the site. ISS carry out a program of monitoring and control at the facility. External bait boxes are located around the facility and internal bait boxes are located in the office buildings. The bait boxes are checked on a six weekly basis and more frequently when required.

14.3 FIRES

An Emergency Response Procedure has been prepared in consultation with the Assistant Chief Fire Officer and approved by the EPA. A risk assessment of environmental pollution caused by contaminated firewater has been carried out. Fire

safety and awareness, fire fighting and first aid training is provided for staff on site. Any fires will be treated as an incident and will be reported to the fire station immediately.

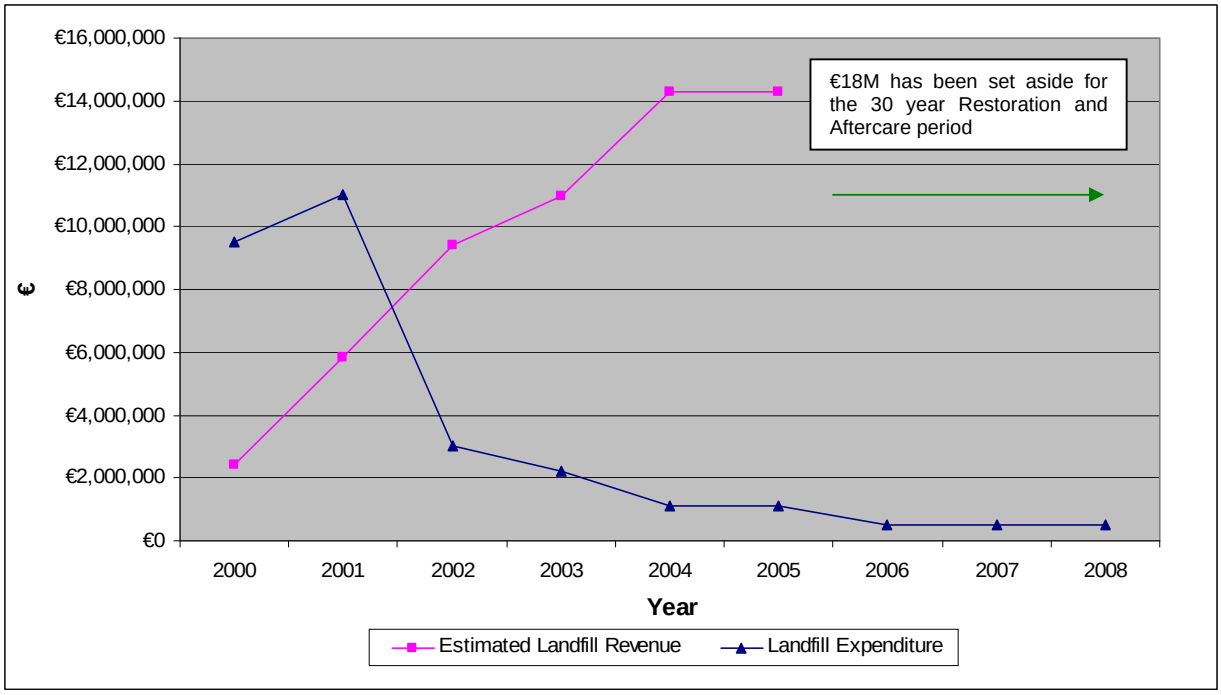
15 REPORT ON FINANCIAL PROVISIONS

Figure 15.1 provides a graphical representation of estimated landfill revenue compared to landfill operational cost over the period 2000-2008.

This graph confirms that Ballinasloe Town Council can meet the costs associated with the operation and management of the landfill and that there are sufficient funds available for future restoration and aftercare works at the facility. A total of €18 million (ex. VAT) has been set aside for the 30 year restoration and aftercare of Pollboy Landfill from 2005 onwards.

Landfill Expenditure in 2008 was €411,896 (ex. VAT). Operating Costs for the Civic Amenity Facility in 2008 were €131,848 (ex. VAT).

Figure 15.1: Estimated Landfill Revenue V's Landfill Cost (ex. VAT)



16 MANAGEMENT STRUCTURE

The management structure at Pollboy Landfill is as follows:

Ms. Máire Ní Chionna: Senior Engineer, Environment Section, Galway County Council, with overall responsibility for management of the Pollboy Landfill Facility.

Mr. Kevin Mulrennan: Acting Landfill Manager. Kevin Mulrennan commenced working as Acting Landfill Manager in June 2009. Mr. Barry Cormican was Acting landfill Manager during the reporting period (2008).

17 PROGRAMME FOR PUBLIC INFORMATION

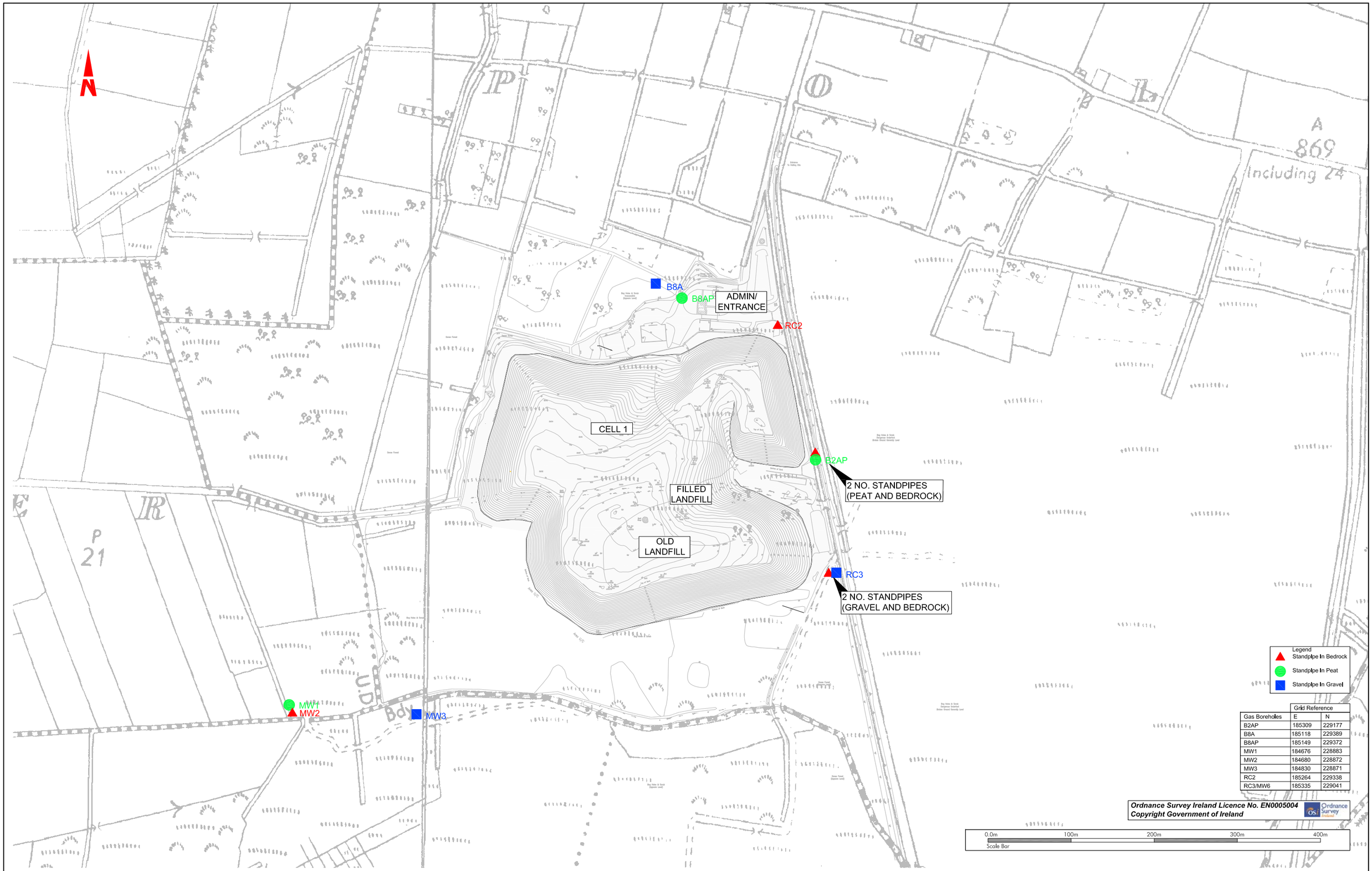
The Communication Procedure outlines the programme for public information.

All details of the Community Liaison Committee will be provided and kept on file and will include details of meetings (dates of meetings, actions arising etc.) between the licensee and representatives of local residents.

The Council will also ensure that access to environmental information on the landfill facility will be readily available in accordance with Council Directive 90/313/EEC on Freedom of Access to Information on the Environment, which came into effect in Ireland in May 1993.

Appendix 1

Drawing of Location of Gas Migration Boreholes and Landfill Gas Emissions from Boreholes



Gas Boreholes	Grid Reference E	N
B2AP	185309	229177
B8A	185118	229389
B8AP	185149	229372
MW1	184676	228883
MW2	184680	228872
MW3	184830	228871
RC2	185264	229338
RC3/MW6	185335	229041

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NOTES

1. This drawing is the property of RPS Consulting Engineers. It is a confidential document and must not be copied, used, or its content divulged without prior written consent.
2. All Levels refer to Ordnance Survey Datum, Malin Head.
3. DO NOT SCALE, use figured dimensions only, if in doubt ask.

No.	Date	Drn. Chk.	Amendment / Issue	App
F08	06.11.09	W.L. K.G.	AER 2008	W.M.
F07	31.01.05	A.D. S.A.	Final Issue	W.M.

Client
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Civic Offices, Ballinasloe.

Drawn By	Checked By	Approved By	Date
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Project
POLLBOY LANDFILL
LICENCE COMPLIANCE

Drawing Status: Final Issue
Scale / Sheet Size: 1:1000 @ A1 | 1:2000 @ A3

Drawing Number: MGE0029 /DG0001-01
Rev: F08

Title
LOCATIONS OF
GROUND WATER
MONITORING BOREHOLES

MGE0029DG0001.dwg

LANDFILL GAS MONITORING FORM

Facility Name : *Pollboy Landfill* **Waste Licence No :** *27-2*	**Facility Address :** *Pollboy Landfill, Ballinasloe, Co. Galway.*	
Licencee : *Ballinasloe Town Council*		
Date of licensing : *10-6-2003*	**Date of sampling :** *20-3-2008*	**Time of sampling :** *12:00 Hrs*
Instrument used : *GA 2000*	**Date Next Full Calibration :** October *2008* **Last Field Calibration** *: 20-3-2008*	
Monitoring Personnel : *Barry Cormican*	**Weather :** *Wet*	**Barometric Pressure :** 1004*mbar* **Mean Temperature :**

RESULTS

Sample Station Number	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO ppm	H_2S ppm	Comments
B2AP	0	0.9	19.8			
B6AP	0	0	20.2			
B8A	0	0.1	21.6			
B8AP	0	0.1	21.3			
BH6	0	0.3	20.1			
BH7	0	0.7	20.4			
MW3	0	0.6	19.9			
MW5	0	0	20.6			
RC2	0	0	21.2			
RC3	0	0.8	19.4			
RC1	0	0	21.1			

LANDFILL GAS MONITORING FORM

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Instrument used : *GA 2000*	**Date Next Full Calibration :** October *2008* **Last Field Calibration** *: 16-4-2008*	
Monitoring Personnel : *Barry Cormican*	**Weather :** *Wet & breezy*	**Barometric Pressure :** 1004*mbar* **Mean Temperature :**

RESULTS

Sample Station Number	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO ppm	H_2S ppm	Comments
B2AP	0	0.9	19.9			
B6AP	0	0	20.1			
B8A	0	0	21.4			
B8AP	0	0.1	21.2			
BH6	0	0.2	20.5			
BH7	0	0.8	20.0			
MW3	0	0.4	19.7			
MW5	0	0	20.6			
RC2	0	0	21.2			
RC3	0	0.6	19.5			
RC1	0	0	21.3			

LANDFILL GAS MONITORING FORM

Facility Name : *Pollboy Landfill* **Waste Licence No :** *27-2*	**Facility Address :** *Pollboy Landfill, Ballinasloe, Co. Galway.*	
Licencee : *Ballinasloe Town Council*		
Date of licensing : *10-6-2003*	**Date of sampling :** *22-5-2008*	**Time of sampling :** *12:00 Hrs*
Instrument used : *GA 2000*	**Date Next Full Calibration :** October *2008* **Last Field Calibration** *: 22-5-2008*	
Monitoring Personnel : *Barry Cormican*	**Weather :** **Dry & Sunny**	**Barometric Pressure :** 1004*mbar* **Mean Temperature :**

RESULTS

Sample Station Number	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO ppm	H_2S ppm	Comments
B2AP	0	0.7	19.8			
B6AP	0	0	20.7			
B8A	0	0	20.8			
B8AP	0	0.2	21.2			
BH6	0	0.4	20.6			
BH7	0	0.5	20.8			
MW3	0	0.2	19.9			
MW5	0	0	20.5			
RC2	0	0	21.2			
RC3	0	0.8	19.6			
RC1	0	0.2	21.6			

LANDFILL GAS MONITORING FORM

Facility Name : *Pollboy Landfill* **Waste Licence No :** *27-2*	**Facility Address :** *Pollboy Landfill, Ballinasloe, Co. Galway.*	
Licencee : *Ballinasloe Town Council*		
Date of licensing : *10-6-2003*	**Date of sampling :** *17-6-2008*	**Time of sampling :** *12:00 Hrs*
Instrument used : *GA 2000*	**Date Next Full Calibration :** October *2008* **Last Field Calibration** *: 17-6-2008*	
Monitoring Personnel : *Barry Cormican*	**Weather :** *Isolated showers*	**Barometric Pressure :** 1004*mbar* **Mean Temperature :**

RESULTS

Sample Station Number	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO ppm	H_2S ppm	Comments
B2AP	0	0.7	19.9			
B6AP	0	0	20.1			
B8A	0	0	21.5			
B8AP	0	0	21.0			
BH6	0	0.3	20.2			
BH7	0	0.9	20.8			
MW3	0	0.6	20.5			
MW5	0	0	20.3			
RC2	0	0.1	21.1			
RC3	0	0.6	19.7			
RC1	0	0	21.3			

LANDFILL GAS MONITORING FORM

Facility Name : *Pollboy Landfill* **Waste Licence No :** *27-2*	**Facility Address :** *Pollboy Landfill, Ballinasloe, Co. Galway.*	
Licencee : *Ballinasloe Town Council*		
Date of licensing : *10-6-2003*	**Date of sampling :** *20-7-2008*	**Time of sampling :** *12:00 Hrs*
Instrument used : *GA 2000*	**Date Next Full Calibration :** October *2008* **Last Field Calibration** *: 20-7-2008*	
Monitoring Personnel : *Barry Cormican*	**Weather :** *Dry & fine*	**Barometric Pressure :** 1004*mbar* **Mean Temperature :**

RESULTS

Sample Station Number	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO ppm	H_2S ppm	Comments
B2AP	0	1.0	20.1			
B6AP	0	0	21.0			
B8A	0	0.1	20.6			
B8AP	0	0	20.8			
BH6	0	0.1	21.0			
BH7	0	0.5	19.9			
MW3	0	0.4	20.2			
MW5	0	0	20.3			
RC2	0	0	21.1			
RC3	0	0.9	19.5			
RC1	0	0	20.9			

LANDFILL GAS MONITORING FORM

Facility Name : *Pollboy Landfill* **Waste Licence No :** *27-2*	**Facility Address :** *Pollboy Landfill, Ballinasloe, Co. Galway.*	
Licencee : *Ballinasloe Town Council*		
Date of licensing : *10-6-2003*	**Date of sampling :** *15-8-2008*	**Time of sampling :** *12:00 Hrs*
Instrument used : *GA 2000*	**Date Next Full Calibration :** October *2008* **Last Field Calibration** *: 15-8-2008*	
Monitoring Personnel : *Barry Cormican*	**Weather :** *Dry & Sunny*	**Barometric Pressure :** 1004*mbar* **Mean Temperature :**

RESULTS

Sample Station Number	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO ppm	H_2S ppm	Comments
B2AP	0	0.9	19.9			
B6AP	0	0	20.3			
B8A	0	0	20.6			
B8AP	0	0.2	21.0			
BH6	0	0.2	19.9			
BH7	0	0.8	20.5			
MW3	0	0.3	19.8			
MW5	0	0	21.1			
RC2	0	0	21.4			
RC3	0	0.9	19.7			
RC1	0	0	20.7			

LANDFILL GAS MONITORING FORM

Facility Name : *Pollboy Landfill* **Waste Licence No :** *27-2*	**Facility Address :** *Pollboy Landfill, Ballinasloe, Co. Galway.*	
Licencee : *Ballinasloe Town Council*		
Date of licensing : *10-6-2003*	**Date of sampling :** *22-9-2008*	**Time of sampling :** *12:00 Hrs*
Instrument used : *GA 2000*	**Date Next Full Calibration :** October *2008* **Last Field Calibration** *: 22-9-2008*	
Monitoring Personnel : *Barry Cormican*	**Weather :** *Isolated showers*	**Barometric Pressure :** 1004*mbar* **Mean Temperature :**

RESULTS

Sample Station Number	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO ppm	H_2S ppm	Comments
B2AP	0	0.8	19.5			
B6AP	0	0	20.5			
B8A	0	0	21.0			
B8AP	0	0.1	21.2			
BH6	0	0.3	20.5			
BH7	0	0.8	20.1			
MW3	0	0.5	19.8			
MW5	0	0	20.6			
RC2	0	0	21.1			
RC3	0	0.9	19.1			
RC1	0	0	21.0			

LANDFILL GAS MONITORING FORM

Facility Name : *Pollboy Landfill* **Waste Licence No :** *27-2*	**Facility Address :** *Pollboy Landfill, Ballinasloe, Co. Galway.*	
Licencee : *Ballinasloe Town Council*		
Date of licensing : *10-6-2003*	**Date of sampling :** *24-10-2008*	**Time of sampling :** *12:00 Hrs*
Instrument used : *GA 2000*	**Date Next Full Calibration :** October *2008* **Last Field Calibration** *: 24-10-2008*	
Monitoring Personnel : *Barry Cormican*	**Weather :** *Mild & Showery*	**Barometric Pressure :** 1004*mbar* **Mean Temperature :**

RESULTS

Sample Station Number	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO ppm	H_2S ppm	Comments
B2AP	0	1.0	19.8			
B6AP	0	0	20.4			
B8A	0	0	20.9			
B8AP	0	0	21.3			
BH6	0	0.5	20.6			
BH7	0	0.9	19.9			
MW3	0	0.3	19.9			
MW5	0	0	20.5			
RC2	0	0.1	21.0			
RC3	0	0.9	19.1			
RC1	0	0.1	20.6			

LANDFILL GAS MONITORING FORM

Facility Name : *Pollboy Landfill* **Waste Licence No :** *27-2*	**Facility Address :** *Pollboy Landfill, Ballinasloe, Co. Galway.*	
Licencee : *Ballinasloe Town Council*		
Date of licensing : *10-6-2003*	**Date of sampling :** *19-11-2008*	**Time of sampling :** *12:00 Hrs*
Instrument used : *GA 2000*	**Date Next Full Calibration :** October *2008* **Last Field Calibration** *: 19-11-2008*	
Monitoring Personnel : *Barry Cormican*	**Weather :** *Wet & cold*	**Barometric Pressure :** 1004*mbar* **Mean Temperature :**

RESULTS

Sample Station Number	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO ppm	H_2S ppm	Comments
B2AP	0	0.8	19.5			
B6AP	0	0.1	20.3			
B8A	0	0	21.0			
B8AP	0	0	21.1			
BH6	0	0.2	20.4			
BH7	0	0.7	20.0			
MW3	0	0.5	19.9			
MW5	0	0.1	20.4			
RC2	0	0	21.1			
RC3	0	0.7	19.3			
RC1	0	0	20.8			

LANDFILL GAS MONITORING FORM

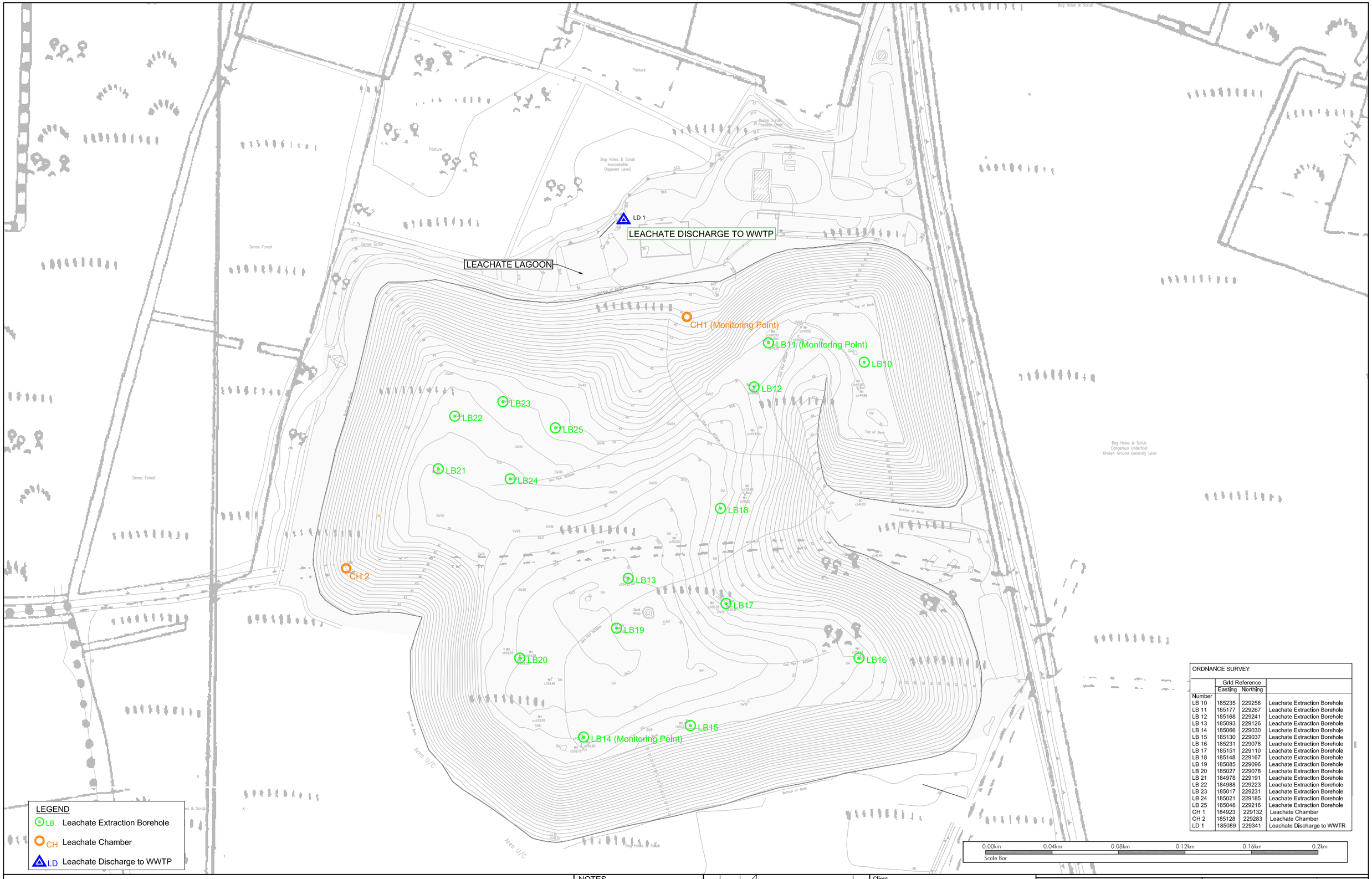
Facility Name : *Pollboy Landfill* **Waste Licence No :** *27-2*	**Facility Address :** *Pollboy Landfill, Ballinasloe, Co. Galway.*	
Licencee : *Ballinasloe Town Council*		
Date of licensing : *10-6-2003*	**Date of sampling :** *18-12-2008*	**Time of sampling :** *12:00 Hrs*
Instrument used : *GA 2000*	**Date Next Full Calibration :** *2008* **Last Field Calibration** *: 18-12-2008*	
Monitoring Personnel : *Barry Cormican*	**Weather :** *Wet*	**Barometric Pressure :** 1004*mbar* **Mean Temperature :**

RESULTS

Sample Station Number	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO ppm	H_2S ppm	Comments
B2AP	0	0.9	19.7			
B6AP	0	0	20.6			
B8A	0	0	20.9			
B8AP	0	0.1	20.9			
BH6	0	0.4	20.1			
BH7	0	0.6	20.0			
MW3	0	0.2	19.8			
MW5	0	0.3	20.2			
RC2	0	0	21.0			
RC3	0	0.8	19.5			
RC1	0	0	20.5			

Appendix 2

Drawing of Leachate Monitoring Points



ORDNANCE SURVEY			
	Grid Reference		
	Easting	Northing	
Number			
LB 10	185235	229256	Leachate Extraction Borehole
LB 11	185177	229267	Leachate Extraction Borehole
LB 12	185168	229241	Leachate Extraction Borehole
LB 13	185093	229126	Leachate Extraction Borehole
LB 14	185066	229030	Leachate Extraction Borehole
LB 15	185130	229037	Leachate Extraction Borehole
LB 16	185231	229078	Leachate Extraction Borehole
LB 17	185151	229110	Leachate Extraction Borehole
LB 18	185148	229167	Leachate Extraction Borehole
LB 19	185085	229096	Leachate Extraction Borehole
LB 20	185027	229078	Leachate Extraction Borehole
LB 21	184978	229191	Leachate Extraction Borehole
LB 22	184988	229223	Leachate Extraction Borehole
LB 23	185017	229231	Leachate Extraction Borehole
LB 24	185021	229185	Leachate Extraction Borehole
LB 25	185048	229216	Leachate Extraction Borehole
CH 1	184923	229132	Leachate Chamber
CH 2	185128	229283	Leachate Chamber
LD 1	185089	229341	Leachate Discharge to WWTR

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County Hall, Prospect Hill, Galway.
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No.	Date	Drn.	Chk.	Amendment / Issue	App
F08	06.11.09	W.L.	K.G.	AER 2008	W.M.

Client
Ballinasloe Town Council
Comhairle Bhaile Beal Atha na Slua
Civic Offices, Ballinasloe.

Drawn By	Checked By	Approved By	Date
C.N.	S.A.	W.M.	MAR. '04

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Drawing Number: MGE0029 /DG0001-07
Rev: F08

Project: POLLBOY LANDFILL LICENCE COMPLIANCE

Title: LOCATIONS OF LEACHATE MONITORING POINTS

Drawing Status	Scale / Sheet Size	
Final Issue	1:500 @ A1	1:1000 @ A3

MGE0029DG0001.dwg

Appendix 3

Drawing of Surface Water Monitoring Points

SW6
SW1
SW7
ADMIN / ENTRANCE
SW8
CELL 1
OLD LANDFILL
SW3
SW4
SW5

LEGEND

Surface Water Monitoring Locations

S.W. Monitoring	Grid Reference E	N
S.W. 1	185244	229543
S.W. 3	184744	228869
S.W. 4	185274	228879
S.W. 5	185416	228688
S.W. 6	185292	229594
S.W. 7	185219	229438
S.W. 8	185014	229321

0.00km 0.1km 0.2km 0.3km 0.4km 0.5km
Scale Bar

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No.	Date	Drn.	Chk.	Amendment / Issue	App
F02	06.11.09	W.L.	K.G.	AER 2008	W.M.
F01	22.04.04	C.N.	S.A.	Final Issue	W.M.

Client
Ballinasloe Town Council
Comhairle Bhaile Beal Atha na Slua
Civic Offices, Ballinasloe.

Drawn By	Checked By	Approved By	Date
C.N.	S.A.	W.M.	MAR. '04

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Project
POLLBOY LANDFILL LICENCE COMPLIANCE

Drawing Status	Scale / Sheet Size	
Final Issue	1:1000 @ A1	1:2000 @ A3

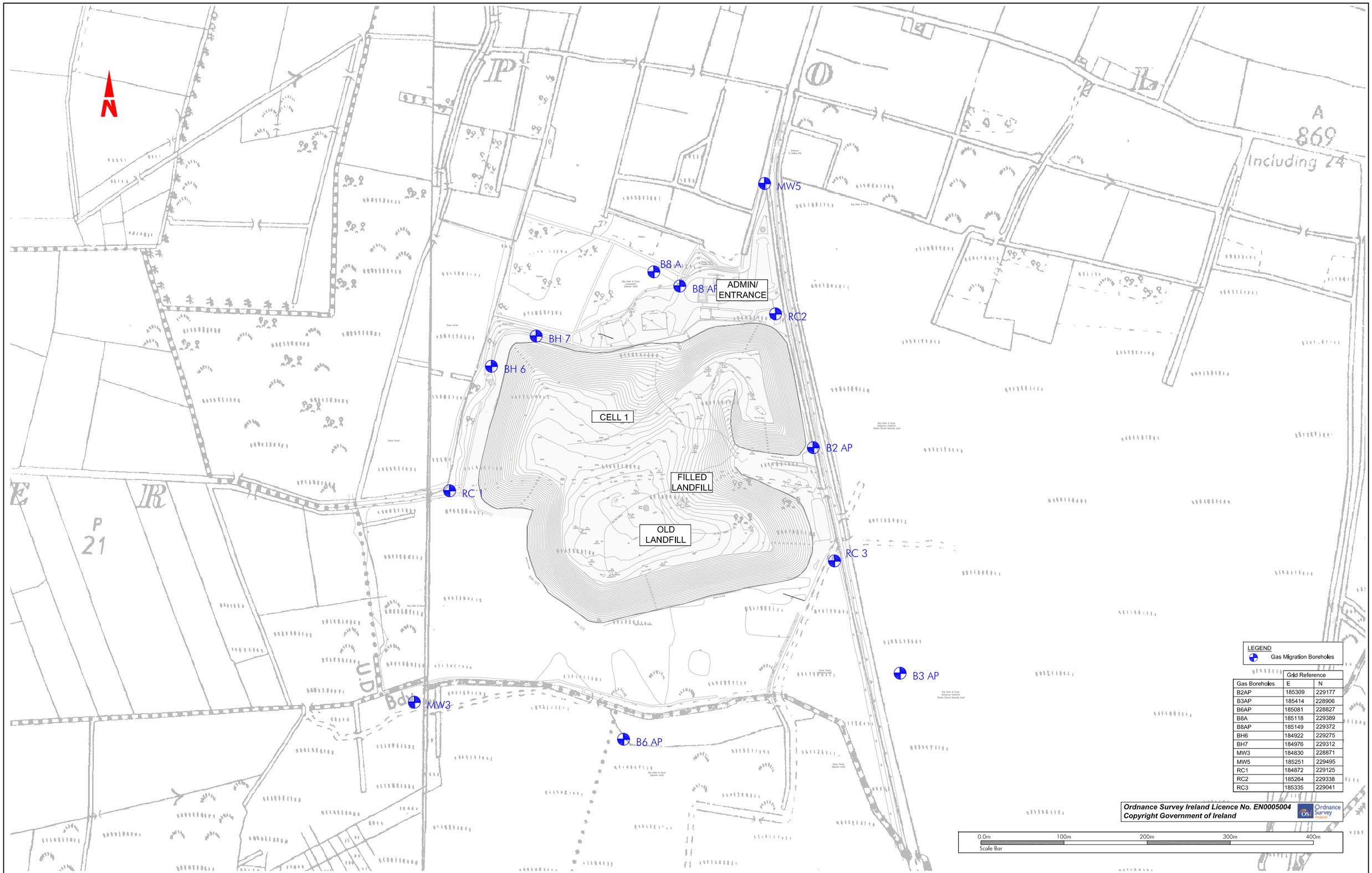
Drawing Number: MGE0029 /DG0001-05
Rev: F02

Title
SURFACE WATER MONITORING LOCATIONS

MGE0029DG0001.dwg

Appendix 4

Drawing of Groundwater Monitoring Points



Gas Boreholes	Grid Reference E	N
B2AP	185309	229177
B3AP	185414	228906
B6AP	185081	228827
B8A	185118	229389
B8AP	185149	229372
BH6	184922	229275
BH7	184976	229312
MW3	184830	228871
MW5	185251	229495
RC1	184872	229125
RC2	185264	229338
RC3	185335	229041

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No.	Date	Drn.	Chk.	Amendment / Issue	App
F07	06.11.09	W.L.	K.D.	AER 2008	W.M.

Client
Ballinasloe Town Council
Comhairle Bhaile Beal Atha na Slua
Civic Offices, Ballinasloe.

Drawn By	Checked By	Approved By	Date
C.N.	S.A.	W.M.	MAR. '04

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Project
POLLBOY LANDFILL
LICENCE COMPLIANCE

Drawing Status: Final Issue
Scale / Sheet Size: 1:1000 @ A1 | 1:2000 @ A3

Drawing Number: MGE0029 /DG0001-04
Rev: F07

Title
LOCATIONS OF
GAS MIGRATION BOREHOLES

MGE0029DG0001.dwg

Appendix 5

Quarterly Monitoring Results for Leachate, Surface water and Groundwater

First Quarter Results (Q1)

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

epa

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Test Report

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	25/04/08
Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 26/03/2008 Date received: 26/03/2008

Comments:

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

				Laboratory Ref:	2801040	2801041	2801042	2801043	
				Type of sample:	Leachate	Leachate	Leachate	Leachate	
				Sampling point:	L11	L14	CH1	Leachate Lagoon	
				Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	
				Time Sampled:	15.05	15.20	14.50	14.40	
				Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	
				Status of results:	**Final**	**Final**	**Final**	**Final**	
Parameter		**Units**	**Limits**						
F**	Temperature	°C			13.9	19.7	21.4	11.3	
B4	pH @20°C	pH Units			7.4	6.9	7.5	7.8	
B5	Conductivity @25°C	µS/cm			20200	4070	19130	5630	
B2	Biochemical Oxygen Demand	mg/l O2			42	18	111	14	
B1	Chemical Oxygen Demand	mg/l O2			1468	435	478	475	
C1	Ammonia	mg/l N			1300	220	1500	370	
C1	Ortho-Phosphate	mg/l P			6.02	0.465	7.06	0.224	
C1	Total Oxidised Nitrogen	mg/l N			0.5	<0.4	0.6	<0.4	
C1	Chloride	mg/l Cl			2800	370	1800	570	
**	Cyanide	mg/l CN			<0.05	<0.05	<0.05	<0.05	
D1	Fluoride	mg/l F			0.04	0.12	<0.03	0.15	
D1	Sulphate	mg/l SO4			<0.5	240	36	43	
**	Boron	µg/l			6568	1790	8013	3232	
**	Sodium	mg/l			2200	290	1500	410	
**	Magnesium	mg/l			160	46	120	62	
**	Potassium	mg/l			590	88	810	180	
**	Calcium	mg/l			109	366	89	347	
**	Chromium	µg/l			1000	240	2000	280	
**	Iron	µg/l			8908	25540	7583	30406	
**	Manganese	µg/l			410	6000	1300	4500	
**	Nickel	µg/l			160	81	330	70	
**	Copper	µg/l			47	9	42	7	
**	Zinc	µg/l			330	1500	100	85	
**	Cadmium	µg/l			<0.10	<0.10	<2	<0.10	
**	Mercury	µg/l			<1.0	<0.10	<1.0	<0.10	

			Laboratory Ref:	2801040	2801041	1042	2801043	
			Type of sample:	Leachate	Leachate	Leachate	Leachate	
			Sampling point:	L11	L14	CH1	Leachate Lagoon	
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	
			Time Sampled:	15.05	15.20	14.50	14.40	
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	
			Status of results:	**Final**	**Final**	**Final**	**Final**	
Parameter		**Units**	**Limits**					
**	Lead	µg/l		<1	7	<20	<1	
**	1,1-Dichloroethene	µg/l		-	-	<0.5	<0.5	
**	Methylene Chloride	µg/l		-	-	<0.5	<0.5	
**	t-1,2-Dichloroethene	µg/l		-	-	<0.5	<0.5	
**	1,1-Dichloroethane	µg/l		-	-	<0.5	<0.5	
**	2,2-Dichloropropane	µg/l		-	-	<0.5	<0.5	
**	Bromochloromethane	µg/l		-	-	<0.5	<0.5	
**	Chloroform	µg/l		-	-	2.9	<0.5	
**	1,1,1-Trichloroethane	µg/l		-	-	<0.5	<0.5	
**	1,1-Dichloropropene	µg/l		-	-	<0.5	<0.5	
**	Benzene	µg/l		-	-	3.7	0.5	
**	Trichloroethene	µg/l		-	-	0.6	<0.5	
**	1,2-Dichloropropane	µg/l		-	-	<0.5	<0.5	
**	Dibromomethane	µg/l		-	-	<0.5	<0.5	
**	Bromodichloromethane	µg/l		-	-	<0.5	<0.5	
**	c-1,3-Dichloropropene	µg/l		-	-	<0.5	<0.5	
**	t-1,3-Dichloropropene	µg/l		-	-	<0.5	<0.5	
**	1,1,2-Trichloroethane	µg/l		-	-	<0.5	<0.5	
**	1,3-Dichloropropane	µg/l		-	-	<0.5	<0.5	
**	1,1,1,2-Tetrachlorethane	µg/l		-	-	<0.5	<0.5	
**	Ethylbenzene	µg/l		-	-	<0.5	<0.5	
**	m,p-Xylene	µg/l		-	-	55	1.1	
**	Styrene	µg/l		-	-	<0.5	<0.5	
**	Bromoform	µg/l		-	-	<0.5	<0.5	
**	1,1,2,2-Tetrachloroethane	µg/l		-	-	<0.5	<0.5	

			Laboratory Ref:	2801040	2801041	2801042	2801043	
			Type of sample:	Leachate	Leachate	Leachate	Leachate	
			Sampling point:	L11	L14	CH1	Leachate Lagoon	
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	
			Time Sampled:	15.05	15.20	14.50	14.40	
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	
			Status of results:	**Final**	**Final**	**Final**	**Final**	
Parameter		**Units**	**Limits**					
**	1,2,3-Trichloropropane	µg/l		-	-	<0.5	<0.5	
**	2-Chlorotoluene	µg/l		-	-	<0.5	<0.5	
**	4-Chlorotoluene	µg/l		-	-	<0.5	<0.5	
**	1,3,5-Trimethylbenzene	µg/l		-	-	6.8	<0.5	
**	tert-Butylbenzene	µg/l		-	-	1.0	<0.5	
**	1,2,4-Trimethylbenzene	µg/l		-	-	26	0.8	
**	1,2-Dichlorobenzene	µg/l		-	-	<0.5	<0.5	
**	n-Butylbenzene	µg/l		-	-	<0.5	<0.5	
**	1,2-Dibromo-3-Chloropropane	µg/l		-	-	<0.5	<0.5	
**	1,2,4-Trichlorobenzene	µg/l		-	-	<0.5	<0.5	
**	Hexachlorobutadiene	µg/l		-	-	<0.5	<0.5	
**	1,2,3-Trichlorobenzene	µg/l		-	-	<0.5	<0.5	
**	c-1,2-Dichloroethene	µg/l		-	-	<0.5	<0.5	
**	Carbon Tetrachloride	µg/l		-	-	<0.5	<0.5	
**	Toluene	µg/l		-	-	3.9	<0.5	
**	1,2-Dibromoethene	µg/l		-	-	<0.5	<0.5	
**	Dibromochloromethane	µg/l		-	-	<0.5	<0.5	
**	Chlorobenzene	µg/l		-	-	<0.5	<0.5	
**	o-Xylene	µg/l		-	-	28	0.8	
**	Isopropylbenzene	µg/l		-	-	<0.5	0.8	
**	Bromobenzene	µg/l		-	-	<0.5	<0.5	
**	n-Propylbenzene	µg/l		-	-	<0.5	<0.5	
**	sec-Butylbenzene	µg/l		-	-	<0.5	<0.5	
**	1,3-Dichlorobenzene	µg/l		-	-	15	0.7	
**	4-Isopropyltoluene	µg/l		-	-	20	<0.5	

			Laboratory Ref:	2801040	2801041	1042	2801043	
			Type of sample:	Leachate	Leachate	Leachate	Leachate	
			Sampling point:	L11	L14	CH1	Leachate Lagoon	
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	
			Time Sampled:	15.05	15.20	14.50	14.40	
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	
			Status of results:	**Final**	**Final**	**Final**	**Final**	
Parameter		**Units**	**Limits**					
**	1,4-Dichlorobenzene	µg/l		-	-	16	0.7	
**	Naphthalene	µg/l		-	-	5.3	<0.5	

Signed: Ray Smith Date: 25/04/08

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	25/04/08

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 26/03/2008 Date received: 26/03/2008

Comments: No sample taken from B8AP as the borehole was blocked at the time of sampling.

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2801035	2801036	2801037	2801038	2801039
			Type of sample:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
			Sampling point:	MW6	RC3	RC2	B8A	B8AP - No Sample
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	12.35	12.50	13.45	14.10	nt
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	/
			Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**					
F**	Temperature	°C		10.6	10.6	11.2	11.1	-
F**	Dissolved Oxygen %Sat	% Saturation		32	25	16	22	-
B4	pH @20°C	pH Units		6.6	7.2	7.3	7.3	-
B5	Conductivity @25°C	µS/cm		1356	637	618	633	-
C1	Ammonia	mg/l N		7.2	7.5	1.4	1.9	-
C1	Ortho-Phosphate	mg/l P		0.049	0.028	0.046	0.028	-
C1	Total Oxidised Nitrogen	mg/l N		<0.4	<0.4	<0.4	<0.4	-
C1	Chloride	mg/l Cl		40	26	18	18	-
**	Cyanide	mg/l CN		<0.05	<0.05	<0.05	<0.05	-
D1	Fluoride	mg/l F		0.31	1.0	0.62	0.46	-
D1	Sulphate	mg/l SO4		56	3.1	18	25	-
B14	Alkalinity	mg/l CaCO3		660	324	300	324	-
**	Total Organic Carbon	mg/l C		13	4.2	2.2	2.0	-
B9	Total Solids	mg/l		14152	815	351	2268	-
**	Boron	µg/l		<50	<50	<50	<50	-
**	Sodium	mg/l		64	18	11	12	-
**	Magnesium	mg/l		56	23	20	40	-
**	Potassium	mg/l		16	4.2	<1	1.5	-
**	Calcium	mg/l		2097	202	80	473	-
**	Chromium	µg/l		780	69	38	100	-
**	Iron	µg/l		12265	6531	2660	8338	-
**	Manganese	µg/l		2900	360	34	430	-
**	Nickel	µg/l		140	45	4	27	-
**	Copper	µg/l		6	8	<1	12	-
**	Zinc	µg/l		610	45	<1	46	-

			Laboratory Ref:	2801035	2801036	2801037	2801038	2801039
			Type of sample:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
			Sampling point:	MW6	RC3	RC2	B8A	B8AP - No Sample
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	12.35	12.50	13.45	14.10	nt
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	/
			Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**					
**	Cadmium	µg/l		7.03	0.71	<0.10	1.11	-
**	Mercury	µg/l		<0.10	<0.10	<0.10	<0.10	-
**	Lead	µg/l		<1	7	<1	10	-

Signed: Ray Smith Date: 25/04/08

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	25/04/08
Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 26/03/2008 Date received: 26/03/2008

Comments:

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

				Laboratory Ref:	2801031	2801032	2801033	2801034
				Type of sample:	Groundwater	Groundwater	Groundwater	Groundwater
				Sampling point:	MW1	MW3	B2AP	MW2
				Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
				Time Sampled:	11.30	11.00	12.10	12.15
				Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08
				Status of results:	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**					
F**	Temperature	°C			10.5	9.1	11.6	7.9	
F**	Dissolved Oxygen %Sat	% Saturation			25	26	15	67	
B4	pH @20°C	pH Units			7.5	6.9	7.3	7.2	
B5	Conductivity @25°C	µS/cm			563	704	985	668	
C1	Ammonia	mg/l N			6.3	3.1	5.7	0.31	
C1	Ortho-Phosphate	mg/l P			0.020	0.027	0.030	0.020	
C1	Total Oxidised Nitrogen	mg/l N			<0.4	<0.4	<0.4	<0.4	
C1	Chloride	mg/l Cl			17	21	130	25	
**	Cyanide	mg/l CN			<0.05	<0.05	<0.05	<0.05	
D1	Fluoride	mg/l F			0.67	0.53	0.67	0.14	
D1	Sulphate	mg/l SO4			<0.5	1.8	3.8	19	
B14	Alkalinity	mg/l CaCO3			280	368	320	324	
**	Total Organic Carbon	mg/l C			5.0	17	4.8	32	
B9	Total Solids	mg/l			314	1850	1346	823	
**	Boron	µg/l			<50	<50	66	<50	
**	Sodium	mg/l			10	9	73	10	
**	Magnesium	mg/l			12	16	22	6.1	
**	Potassium	mg/l			2.9	1.6	5.7	1.9	
**	Calcium	mg/l			74	412	244	174	
**	Chromium	µg/l			39	140	73	46	
**	Iron	µg/l			4694	17258	9162	1539	
**	Manganese	µg/l			220	580	380	240	
**	Nickel	µg/l			10	74	29	20	
**	Copper	µg/l			<1	13	12	6	
**	Zinc	µg/l			<1	46	29	14	

			Laboratory Ref:	2801031	2801032	2801033	2801034	
			Type of sample:	Groundwater	Groundwater	Groundwater	Groundwater	
			Sampling point:	MW1	MW3	B2AP	MW2	
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	
			Time Sampled:	11.30	11.00	12.10	12.15	
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	
			Status of results:	**Final**	**Final**	**Final**	**Final**	
Parameter		**Units**	**Limits**					
**	Cadmium	µg/l		<0.10	1.21	0.69	0.32	
**	Mercury	µg/l		<0.10	<0.10	<0.10	<0.10	
**	Lead	µg/l		<1	13	8	8	
**	1,1-Dichloroethene	µg/l		<0.5	<0.5	<0.5	-	
**	Methylene Chloride	µg/l		<0.5	<0.5	<0.5	-	
**	t-1,2-Dichloroethene	µg/l		<0.5	<0.5	<0.5	-	
**	1,1-Dichloroethane	µg/l		<0.5	<0.5	<0.5	-	
**	2,2-Dichloropropane	µg/l		<0.5	<0.5	<0.5	-	
**	Bromochloromethane	µg/l		<0.5	<0.5	<0.5	-	
**	Chloroform	µg/l		<0.5	<0.5	<0.5	-	
**	1,1,1-Trichloroethane	µg/l		<0.5	<0.5	<0.5	-	
**	1,1-Dichloropropene	µg/l		<0.5	<0.5	<0.5	-	
**	Benzene	µg/l		<0.5	<0.5	<0.5	-	
**	Trichloroethene	µg/l		<0.5	<0.5	<0.5	-	
**	1,2-Dichloropropane	µg/l		<0.5	<0.5	<0.5	-	
**	Dibromomethane	µg/l		<0.5	<0.5	<0.5	-	
**	Bromodichloromethane	µg/l		<0.5	<0.5	<0.5	-	
**	c-1,3-Dichloropropene	µg/l		<0.5	<0.5	<0.5	-	
**	t-1,3-Dichloropropene	µg/l		<0.5	<0.5	<0.5	-	
**	1,1,2-Trichloroethane	µg/l		<0.5	<0.5	<0.5	-	
**	1,3-Dichloropropane	µg/l		<0.5	<0.5	<0.5	-	
**	1,1,1,2-Tetrachlorethane	µg/l		<0.5	<0.5	<0.5	-	
**	Ethylbenzene	µg/l		<0.5	<0.5	<0.5	-	
**	m,p-Xylene	µg/l		<0.5	<0.5	<0.5	-	
**	Styrene	µg/l		<0.5	<0.5	<0.5	-	

			Laboratory Ref:	2801031	2801032	2801033	2801034	
			Type of sample:	Groundwater	Groundwater	Groundwater	Groundwater	
			Sampling point:	MW1	MW3	B2AP	MW2	
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	
			Time Sampled:	11.30	11.00	12.10	12.15	
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	
			Status of results:	**Final**	**Final**	**Final**	**Final**	
Parameter		**Units**	**Limits**					
**	Bromoform	µg/l		<0.5	<0.5	<0.5	-	
**	1,1,2,2-Tetrachloroethane	µg/l		<0.5	<0.5	<0.5	-	
**	1,2,3-Trichloropropane	µg/l		<0.5	<0.5	<0.5	-	
**	2-Chlorotoluene	µg/l		<0.5	<0.5	<0.5	-	
**	4-Chlorotoluene	µg/l		<0.5	<0.5	<0.5	-	
**	1,3,5-Trimethylbenzene	µg/l		<0.5	<0.5	<0.5	-	
**	tert-Butylbenzene	µg/l		<0.5	<0.5	<0.5	-	
**	1,2,4-Trimethylbenzene	µg/l		<0.5	<0.5	<0.5	-	
**	1,2-Dichlorobenzene	µg/l		<0.5	<0.5	<0.5	-	
**	n-Butylbenzene	µg/l		<0.5	<0.5	<0.5	-	
**	1,2-Dibromo-3-Chloropropane	µg/l		<0.5	<0.5	<0.5	-	
**	1,2,4-Trichlorobenzene	µg/l		<0.5	<0.5	<0.5	-	
**	Hexachlorobutadiene	µg/l		<0.5	<0.5	<0.5	-	
**	1,2,3-Trichlorobenzene	µg/l		<0.5	<0.5	<0.5	-	
**	c-1,2-Dichloroethene	µg/l		<0.5	<0.5	<0.5	-	
**	Carbon Tetrachloride	µg/l		<0.5	<0.5	<0.5	-	
**	Toluene	µg/l		<0.5	<0.5	<0.5	-	
**	1,2-Dibromoethene	µg/l		<0.5	<0.5	<0.5	-	
**	Dibromochloromethane	µg/l		<0.5	<0.5	<0.5	-	
**	Chlorobenzene	µg/l		<0.5	<0.5	<0.5	-	
**	o-Xylene	µg/l		<0.5	<0.5	<0.5	-	
**	Isopropylbenzene	µg/l		<0.5	<0.5	<0.5	-	
**	Bromobenzene	µg/l		<0.5	<0.5	<0.5	-	
**	n-Propylbenzene	µg/l		<0.5	<0.5	<0.5	-	
**	sec-Butylbenzene	µg/l		<0.5	<0.5	<0.5	-	

				Laboratory Ref:	2801031	2801032	2801033	2801034
				Type of sample:	Groundwater	Groundwater	Groundwater	Groundwater
				Sampling point:	MW1	MW3	B2AP	MW2
				Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
				Time Sampled:	11.30	11.00	12.10	12.15
				Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08
				Status of results:	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**					
**	1,3-Dichlorobenzene	µg/l			<0.5	<0.5	<0.5	-
**	4-Isopropyltoluene	µg/l			<0.5	<0.5	<0.5	-
**	1,4-Dichlorobenzene	µg/l			<0.5	<0.5	<0.5	-
**	Naphthalene	µg/l			<0.5	<0.5	<0.5	-

Signed: Ray Smith Date: 25/04/08

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	25/04/08

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 26/03/2008 Date received: 26/03/2008

Comments: No sample taken from SW7 as pipe was flooded at the time of visit.

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2801024	2801025	2801026	2801027	2801028	2801029	2801030
			Type of sample:	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
			Sampling point:	SW1	SW3	SW4	SW5	SW6	SW8	SW7 - No Sample
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	14.15	10.50	11.40	12.20	14.25	14.30	15.30
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	/
			Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**							
F**	Temperature	°C		9.5	8.5	8.3	8.4	9.1	7.8	-
F**	Dissolved Oxygen %Sat	% Saturation		75	101	103	96	110	48	-
B4	pH @20°C	pH Units		7.3	8.0	8.1	8.0	7.8	7.1	-
B5	Conductivity @25°C	µS/cm		563	730	728	695	717	462	-
B2	Biochemical Oxygen Demand	mg/l O2		3.0	<1	<1	<1	2.1	5.8	-
B1	Chemical Oxygen Demand	mg/l O2		98	<25	<25	<25	30	115	-
C1	Ammonia	mg/l N		0.11	<0.03	<0.03	<0.03	0.53	0.11	-
C1	Ortho-Phosphate	mg/l P		<0.012	0.019	0.023	0.018	0.023	0.027	-
C1	Total Oxidised Nitrogen	mg/l N		0.7	3.0	3.0	2.8	3.1	<0.4	-
C1	Chloride	mg/l Cl		39	25	26	25	33	31	-
B7	Suspended Solids	mg/l		<8	<8	<8	<8	<8	21	-
D1	Sulphate	mg/l SO4		42	nm	14	13	22	43	-
B14	Alkalinity	mg/l CaCO3		194	368	352	320	320	140	-
**	Boron	µg/l		<50	<50	<50	<50	<50	<50	-
**	Sodium	mg/l		21	10	10	9	15	14	-
**	Magnesium	mg/l		7.3	8.4	7.4	7.1	9.0	3.7	-
**	Potassium	mg/l		3.8	3.3	3.1	2.8	3.1	1.3	-
**	Calcium	mg/l		89	140	129	122	116	72	-
**	Chromium	µg/l		27	60	71	69	40	24	-
**	Iron	µg/l		442	183	191	212	467	748	-
**	Manganese	µg/l		57	10	10	11	96	260	-
**	Nickel	µg/l		3	4	4	4	4	3	-
**	Copper	µg/l		<1	2	<1	<1	2	<1	-
**	Zinc	µg/l		7	5	3	2	2	3	-

			Laboratory Ref:	2801024	2801025	2801026	2801027	2801028	2801029	2801030
			Type of sample:	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
			Sampling point:	SW1	SW3	SW4	SW5	SW6	SW8	SW7 - No Sample
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	14.15	10.50	11.40	12.20	14.25	14.30	15.30
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	/
			Status of results:	Final	Final	Final	Final	Final	Final	Final
Parameter		Units	Limits							
**	Cadmium	µg/l		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-
**	Mercury	µg/l		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-
**	Lead	µg/l		<1	<1	<1	<1	<1	<1	-
**	1,1-Dichloroethene	µg/l		-	<0.5	<0.5	-	-	-	-
**	Methylene Chloride	µg/l		-	<0.5	<0.5	-	-	-	-
**	t-1,2-Dichloroethene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,1-Dichloroethane	µg/l		-	<0.5	<0.5	-	-	-	-
**	2,2-Dichloropropane	µg/l		-	<0.5	<0.5	-	-	-	-
**	Bromochloromethane	µg/l		-	<0.5	<0.5	-	-	-	-
**	Chloroform	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,1,1-Trichloroethane	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,1-Dichloropropene	µg/l		-	<0.5	<0.5	-	-	-	-
**	Benzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	Trichloroethene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,2-Dichloropropane	µg/l		-	<0.5	<0.5	-	-	-	-
**	Dibromomethane	µg/l		-	<0.5	<0.5	-	-	-	-
**	Bromodichloromethane	µg/l		-	<0.5	<0.5	-	-	-	-
**	c-1,3-Dichloropropene	µg/l		-	<0.5	<0.5	-	-	-	-
**	t-1,3-Dichloropropene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,1,2-Trichloroethane	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,3-Dichloropropane	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,1,1,2-Tetrachlorethane	µg/l		-	<0.5	<0.5	-	-	-	-
**	Ethylbenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	m,p-Xylene	µg/l		-	<0.5	<0.5	-	-	-	-

			Laboratory Ref:	2801024	2801025	2801026	2801027	2801028	2801029	2801030
			Type of sample:	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
			Sampling point:	SW1	SW3	SW4	SW5	SW6	SW8	SW7 - No Sample
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	14.15	10.50	11.40	12.20	14.25	14.30	15.30
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	/
			Status of results:	Final	Final	Final	Final	Final	Final	Final
Parameter		Units	Limits							
**	Styrene	µg/l		-	<0.5	<0.5	-	-	-	-
**	Bromoform	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,1,2,2-Tetrachloroethane	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,2,3-Trichloropropane	µg/l		-	<0.5	<0.5	-	-	-	-
**	2-Chlorotoluene	µg/l		-	<0.5	<0.5	-	-	-	-
**	4-Chlorotoluene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,3,5-Trimethylbenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	tert-Butylbenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,2,4-Trimethylbenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,2-Dichlorobenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	n-Butylbenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,2-Dibromo-3-Chloropropane	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,2,4-Trichlorobenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	Hexachlorobutadiene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,2,3-Trichlorobenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	c-1,2-Dichloroethene	µg/l		-	<0.5	<0.5	-	-	-	-
**	Carbon Tetrachloride	µg/l		-	<0.5	<0.5	-	-	-	-
**	Toluene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,2-Dibromoethene	µg/l		-	<0.5	<0.5	-	-	-	-
**	Dibromochloromethane	µg/l		-	<0.5	<0.5	-	-	-	-
**	Chlorobenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	o-Xylene	µg/l		-	<0.5	<0.5	-	-	-	-
**	Isopropylbenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	Bromobenzene	µg/l		-	<0.5	<0.5	-	-	-	-

			Laboratory Ref:	2801024	2801025	2801026	2801027	2801028	2801029	2801030
			Type of sample:	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
			Sampling point:	SW1	SW3	SW4	SW5	SW6	SW8	SW7 - No Sample
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	14.15	10.50	11.40	12.20	14.25	14.30	15.30
			Start/End - Dates of Analysis:	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	26-03-08/24-04-08	/
			Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**							
**	n-Propylbenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	sec-Butylbenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,3-Dichlorobenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	4-Isopropyltoluene	µg/l		-	<0.5	<0.5	-	-	-	-
**	1,4-Dichlorobenzene	µg/l		-	<0.5	<0.5	-	-	-	-
**	Naphthalene	µg/l		-	<0.5	<0.5	-	-	-	-

Signed: Ray Smith Date: 25/04/08

Ray Smith
Regional Chemist, EPA Castlebar

Second Quarter Results (Q2)

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Test Report

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	01/09/09

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 19/06/2008 Date received: 19/06/2008

Comments: **No sample taken from SW8 as this sampling point was 'dry' at the time of sampling.**

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) TOC Analysed by Alcontrol Laboratories, Dublin
5) VOCs Analysed by EPA, Kilkenny
6) Solvents Analysed by EPA, Dublin
7) nm "Not measured"
8) nd "None detected"
9) nt "No time" - Time not recorded
10) nr "not reported"
11) no "none observed"
12) VOB "Visible On Bottom"
13) tntc "Too numerous to count"
14) F "Field measured parameters"
15) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
16) Colour Analysis: Hazen units = mg/l Pt Co
17) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
18) (**) Indicates parameters / results produced from non-accredited analytical methods

		Laboratory Ref:	2802139
		Type of sample:	Surface Water
		Sampling point:	SW8 - no sample
		Sampled by:	Cathal Ruane
		Time Sampled:	14.25
		Start/End - Dates of Analysis:	/
		Status of results:	**Final**
Parameter	**Units**	**Limits**	

Signed: Ray Smith Date: 01/09/09

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	01/09/09

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 19/06/2008 Date received: 19/06/2008

Comments:

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) TOC Analysed by Alcontrol Laboratories, Dublin
5) VOCs Analysed by EPA, Kilkenny
6) Solvents Analysed by EPA, Dublin
7) nm "Not measured"
8) nd "None detected"
9) nt "No time" - Time not recorded
10) nr "not reported"
11) no "none observed"
12) VOB "Visible On Bottom"
13) tntc "Too numerous to count"
14) F "Field measured parameters"
15) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
16) Colour Analysis: Hazen units = mg/l Pt Co
17) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
18) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2802133	2802134	2802135	2802136	2802137	2802138	
			Type of sample:	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	
			Sampling point:	SW7	SW1	SW6	SW4	SW3	SW5	
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	
			Time Sampled:	11.50	12.10	12.25	12.50	13.10	13.35	
			Start/End - Dates of Analysis:	19-06-08/25-06-08	19-06-08/25-06-08	19-06-08/25-06-08	19-06-08/25-06-08	19-06-08/25-06-08	19-06-08/25-06-08	
			Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	
Parameter		**Units**	**Limits**							
F **	Temperature	°C		14.3	16.1	14.9	12.3	12.9	13.2	
F **	Dissolved Oxygen %Sat	% Saturation		64	87	54	82	92	94	
B4	pH	pH Units		7.4	7.6	7.6	8.0	8.1	8.0	
B5	Conductivity @25°C	µS/cm		838	677	657	749	748	701	
B2	Biochemical Oxygen Demand	mg/l O2		9	8	5.8	1.0	<1	<1	
B1	Chemical Oxygen Demand	mg/l O2		124	90	31	26	31	<25	
B7	Suspended Solids	mg/l		15	19	9	9	<8	<8	
C1	Ammonia	mg/l N		5.5	1.2	0.87	<0.03	<0.03	<0.03	
C1	Chloride	mg/l Cl		79	58	35	26	25	26	

Signed: Ray Smith Date: 01/09/09

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

eport of:	Analysis of landfill site sample(s)
eport to:	Ballinasloe Town Council
eport date:	01/09/09

acility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
eference No:	W0027-02

ate collected: 19/06/2008 Date received: 19/06/2008

omments: **No sample taken from B8AP - borehole blocked. No sample taken from MW2 - insufficient water volume in this borehole.**

etals Analysed in the EPA, Dublin Laboratory
yanide Analysed by Alcontrol Laboratories, Dublin
henolic Compounds Analysed by Alcontrol Labs.
OC Analysed by Alcontrol Laboratories, Dublin
OCs Analysed by EPA, Kilkenny
olvents Analysed by EPA, Dublin
m "Not measured"
d "None detected"
t "No time" - Time not recorded

10) nr "not reported"
11) no "none observed"
12) VOB "Visible On Bottom"
13) tntc "Too numerous to count"
14) F "Field measured parameters"
15) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
16) Colour Analysis: Hazen units = mg/l Pt Co
17) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
18) (**) Indicates parameters / results produced from non-accredited analytical methods

		Laboratory Ref:	2802147	2802148	
		Type of sample:	Groundwater	Groundwater	
		Sampling point:	B8AP - no sample	MW2 - no sample	
		Sampled by:	Cathal Ruane	Cathal Ruane	
		Time Sampled:	11.45	14.35	
		Start/End - Dates of Analysis:	/	/	
		Status of results:	**Final**	**Final**	
arameter	**Units**	**Limits**			

Signed: Ray Smith Date: 01/09/09

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

port of: Analysis of landfill site sample(s)
port to: Ballinasloe Town Council
port date: 01/09/09

ility: **Pollboy Landfill Facility**
Pollboy, Ballinasloe, Co. Galway
ference No: W0027-02

e collected: 19/06/2008 Date received: 19/06/2008

mments:

Metals Analysed in the EPA, Dublin Laboratory
ide Analysed by Alcontrol Laboratories, Dublin
nolic Compounds Analysed by Alcontrol Labs.
C Analysed by Alcontrol Laboratories, Dublin
Cs Analysed by EPA, Kilkenny
vents Analysed by EPA, Dublin
"Not measured"
"None detected"
"No time" - Time not recorded

10) nr "not reported"
11) no "none observed"
12) VOB "Visible On Bottom"
13) tntc "Too numerous to count"
14) F "Field measured parameters"
15) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
16) Colour Analysis: Hazen units = mg/l Pt Co
17) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
18) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2802149	2802150	2802151
			Type of sample:	Leachate	Leachate	Leachate
			Sampling point:	L14	CH1	Lagoon
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	15.30	14.35	15.15
			Start/End - Dates of Analysis:	19-06-08/25-06-08	19-06-08/25-06-08	19-06-08/25-06-08
			Status of results:	**Final**	**Final**	**Final**
	rameter	**Units**	**Limits**			
	Temperature	°C		27.1	17.7	15.6
	pH	pH Units		7.2	7.5	7.5
	Conductivity @25°C	µS/cm		8240	21400	7650
	Biochemical Oxygen Demand	mg/l O2		38	140	33
	Chemical Oxygen Demand	mg/l O2		843	3020	639
	Ammonia	mg/l N		500	1900	450
	Chloride	mg/l Cl		780	2100	960

Signed: Ray Smith Date: 01/09/09
Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO.145T

Test Report

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	01/09/09

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 19/06/2008 Date received: 19/06/2008

Comments: **No sample taken from L11 as this sampling point was 'dry' at the time of sampling.**

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) TOC Analysed by Alcontrol Laboratories, Dublin
5) VOCs Analysed by EPA, Kilkenny
6) Solvents Analysed by EPA, Dublin
7) nm "Not measured"
8) nd "None detected"
9) nt "No time" - Time not recorded
10) nr "not reported"
11) no "none observed"
12) VOB "Visible On Bottom"
13) tntc "Too numerous to count"
14) F "Field measured parameters"
15) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
16) Colour Analysis: Hazen units = mg/l Pt Co
17) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
18) (**) Indicates parameters / results produced from non-accredited analytical methods

		Laboratory Ref:	2802152
		Type of sample:	Leachate
		Sampling point:	L11 - no sample
		Sampled by:	Cathal Ruane
		Time Sampled:	15.45
		Start/End - Dates of Analysis:	/
		Status of results:	**Final**
Parameter	**Units**	**Limits**	

Signed: Ray Smith Date: 01/09/09

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO.145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	01/09/09

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 19/06/2008 Date received: 19/06/2008

Comments:

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) TOC Analysed by Alcontrol Laboratories, Dublin
5) VOCs Analysed by EPA, Kilkenny
6) Solvents Analysed by EPA, Dublin
7) nm "Not measured"
8) nd "None detected"
9) nt "No time" - Time not recorded
10) nr "not reported"
11) no "none observed"
12) VOB "Visible On Bottom"
13) tntc "Too numerous to count"
14) F "Field measured parameters"
15) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
16) Colour Analysis: Hazen units = mg/l Pt Co
17) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
18) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2802140	2802141	2802142	2802143	2802144	2802145	2802146
			Type of sample:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
			Sampling point:	B2AP	B8A	RC2	RC3	MW1	MW3	MW6
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	12.30	11.55	11.00	13.05	15.00	13.35	12.50
			Start/End - Dates of Analysis:	19-06-08/27-06-08	19-06-08/27-06-08	19-06-08/27-06-08	19-06-08/27-06-08	19-06-08/27-06-08	19-06-08/27-06-08	19-06-08/27-06-08
			Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**
Parameter		Units	Limits							
F **	Temperature	°C		12.2	11.9	11.6	11.4	11.1	10.7	11.3
B4	pH	pH Units		7.3	7.3	7.3	7.1	7.5	7.0	6.6
B5	Conductivity @25°C	µS/cm		1190	648	620	698	569	712	1399
C1	Ammonia	mg/l N		8.6	0.98	1.4	8.4	7.5	3.1	8.8
C1	Chloride	mg/l Cl		200	18	18	30	17	22	38
**	Total Organic Carbon	mg/l C		5.5	3.2	3.7	5.6	5.8	46	18

Signed: Ray Smith Date: 01/09/09

Ray Smith
Regional Chemist, EPA Castlebar

The Unce
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Test Rep
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Calci
Total
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Colifo.
Faeca
Cya
Hex
Fats
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P

Third Quarter Results (Q3)

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	13/11/08

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 16/09/2008 Date received: 16/09/2008

Comments: No sample taken from L11 as this sampling point was dry at the time of visit.

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2803629	2803630	3631	2803632	
			Type of sample:	Leachate	Leachate	Leachate	Leachate	
			Sampling point:	L11 - no sample	L14	CH1	Leachate Lagoon	
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	
			Time Sampled:	16.05	16.15	14.50	14.55	
			Start/End - Dates of Analysis:	/	16-09-08/22-09-08	16-09-08/22-09-08	16-09-08/22-09-08	
			Status of results:	**Final**	**Final**	**Final**	**Final**	
Parameter		**Units**	**Limits**					
F **	Temperature	°C		-	19.6	20.6	16.8	
B4	pH	pH Units		-	6.5	7.5	8.7	
B5	Conductivity @25°C	µS/cm		-	1461	20200	7770	
B2	Biochemical Oxygen Demand	mg/l O2		-	23	153	58	
B1	Chemical Oxygen Demand	mg/l O2		-	152	2230	909	
C1	Ammonia	mg/l N		-	33	150	0.60	
C1	Chloride	mg/l Cl		-	34	2200	860	

Signed: Ray Smith Date: 13/11/08

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	13/11/08

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 16/09/2008 Date received: 16/09/2008

Comments: No sample taken from SW7 due to flooding at the time of visit.

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2803622	2803623	2803624	2803625	2803626	2803627	2803628
			Type of sample:	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
			Sampling point:	SW1	SW3	SW4	SW5	SW6	SW7 - no sample	SW8
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	13.00	15.45	14.40	13.55	13.15	12.15	12.25
			Start/End - Dates of Analysis:	16-09-08/22-09-08	16-09-08/22-09-08	16-09-08/22-09-08	16-09-08/22-09-08	16-09-08/22-09-08	/	16-09-08/22-09-08
			Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**							
F **	Temperature	°C		13.7	12.9	12.8	12.8	13.9	-	13.3
F **	Dissolved Oxygen %Sat	% Saturation		22	82	75	70	66	-	28
B4	pH	pH Units		7.1	7.7	7.6	7.6	7.6	-	7.1
B5	Conductivity @25°C	µS/cm		654	783	767	718	710	-	519
B2	Biochemical Oxygen Demand	mg/l O2		2.4	<1	<1	<1	3.6	-	5.3
B1	Chemical Oxygen Demand	mg/l O2		88	<25	30	38	46	-	142
B7	Suspended Solids	mg/l		<8	<8	<8	<8	33	-	66
C1	Ammonia	mg/l N		3.8	<0.03	<0.03	<0.03	0.95	-	0.10
C1	Chloride	mg/l Cl		36	22	22	22	30	-	29

Signed: Ray Smith Date: 13/11/08

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	13/11/08

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 16/09/2008 Date received: 16/09/2008

Comments:

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2803618	2803619	3620	2803621	
			Type of sample:	Groundwater	Groundwater	Groundwater	Groundwater	
			Sampling point:	BMW1	BMW2	BMW3	BMW6	
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	
			Time Sampled:	15.20	15.30	14.50	14.10	
			Start/End - Dates of Analysis:	16-09-08/03-11-08	16-09-08/03-11-08	16-09-08/03-11-08	16-09-08/03-11-08	
			Status of results:	**Final**	**Final**	**Final**	**Final**	
Parameter		**Units**	**Limits**					
F **	Temperature	°C		11.5	14.8	11.7	11.8	
B4	pH	pH Units		7.4	6.9	6.9	6.8	
B5	Conductivity @25°C	µS/cm		594	713	704	1149	
C1	Ammonia	mg/l N		6.9	0.45	3.2	8.2	
C1	Chloride	mg/l Cl		16	8	23	40	
**	Total Organic Carbon	mg/l C		9.5	50	22	10	

Signed: Ray Smith Date: 13/11/08

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	13/11/08
Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 16/09/2008 Date received: 16/09/2008

Comments: No sample taken from B8AP as this borehole was blocked at the time of sampling.

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2803613	2803614	3615	2803616	2803617
			Type of sample:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
			Sampling point:	B2AP	B8A	B8AP - no sample	RC2	RC3
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	13.45	11.40	11.35	12.55	14.20
			Start/End - Dates of Analysis:	16-09-08/03-11-08	16-09-08/03-11-08	/	16-09-08/03-11-08	16-09-08/03-11-08
			Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**					
F **	Temperature	°C		12.4	11.7	-	11.6	11.1
B4	pH	pH Units		7.1	7.3	-	7.3	7.0
B5	Conductivity @25°C	µS/cm		2030	658	-	616	857
C1	Ammonia	mg/l N		23	1.1	-	1.3	7.7
C1	Chloride	mg/l Cl		460	20	-	18	46
**	Total Organic Carbon	mg/l C		9.1	3.4	-	4.9	8.1

Signed: Ray Smith Date: 13/11/08

Ray Smith
Regional Chemist, EPA Castlebar

Fourth Quarter Results (Q4)

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	18/12/08

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 02/12/2008 Date received: 02/12/2008

Comments: No sample taken from B8AP as this borehole was blocked at the time of sampling.

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2804465	2804466	2804467	2804468	2804469
			Type of sample:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
			Sampling point:	B2AP	B8A	B8AP - no sample	RC2	RC3
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	12.00	11.40	11.45	11.15	12.25
			Start/End - Dates of Analysis:	02-12-08/10-12-08	02-12-08/10-12-08	/	02-12-08/10-12-08	02-12-08/10-12-08
			Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**					
F **	Temperature	°C		11.2	10.7	-	11.0	10.6
B4	pH	pH Units		7.2	7.3	-	7.3	7.0
B5	Conductivity @25°C	µS/cm		1762	655	-	612	885
C1	Ammonia	mg/l N		21	1.9	-	1.4	7.9
C1	Chloride	mg/l Cl		290	27	-	18	46
**	Total Organic Carbon	mg/l C		7.7	2.4	-	2.7	5.4

Signed: Ray Smith Date: 18/12/08

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	18/12/08

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 02/12/2008 Date received: 02/12/2008

Comments: No sample taken from SW7 as there was no flow at the time of sampling.

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

				Type of sample:	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
				Sampling point:	SW1	SW3	SW4	SW5	SW6	SW7 - no sample	SW8
				Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
				Time Sampled:	14.30	13.10	13.55	14.05	14.20	14.45	14.55
				Start/End - Dates of Analysis:	02-12-08/08-12-08	02-12-08/08-12-08	02-12-08/08-12-08	02-12-08/08-12-08	02-12-08/08-12-08	/	02-12-08/08-12-08
				Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**								
F **	Temperature	°C			3.8	8.0	7.8	7.4	6.0	-	3.8
F **	Dissolved Oxygen %Sat	% Saturation			27	85	82	81	82	-	23
B4	pH	pH Units			7.2	7.8	7.8	7.8	8.1	-	7.1
B5	Conductivity @25°C	µS/cm			578	794	795	760	767	-	352
B2	Biochemical Oxygen Demand	mg/l O2			1.4	<1	<1	<1	1.6	-	6.2
B1	Chemical Oxygen Demand	mg/l O2			87	<25	<25	26	25	-	143
B7	Suspended Solids	mg/l			<8	<8	<8	<8	73	-	117
C1	Ammonia	mg/l N			0.91	<0.03	<0.03	0.04	0.48	-	0.17
C1	Chloride	mg/l Cl			29	29	32	31	34	-	23

Signed: Ray Smith Date: 18/12/08

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	18/12/08

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 02/12/2008 Date received: 02/12/2008

Comments:

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

			Laboratory Ref:	2804470	2804471	2804472	Groundwater	
			Type of sample:	Groundwater	Groundwater	Groundwater		
			Sampling point:	MW1	MW2	MW3	MW6	
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	
			Time Sampled:	13.25	13.40	13.05	12.40	
			Start/End - Dates of Analysis:	02-12-08/10-12-08	02-12-08/10-12-08	02-12-08/10-12-08	02-12-08/10-12-08	
			Status of results:	**Final**	**Final**	**Final**	**Final**	
Parameter		**Units**	**Limits**					
F **	Temperature	°C		10.2	8.0	10.6	10.4	
B4	pH	pH Units		7.5	7.0	7.0	6.9	
B5	Conductivity @25°C	µS/cm		575	674	681	1195	
C1	Ammonia	mg/l N		6.9	0.99	2.9	7.2	
C1	Chloride	mg/l Cl		17	17	20	33	
**	Total Organic Carbon	mg/l C		5.9	42	22	12	

Signed: Ray Smith Date: 18/12/08

Ray Smith
Regional Chemist, EPA Castlebar

Environmental Protection Agency
Regional Inspectorate
John Moore Road, Castlebar

Test Report

ISO 17025 IVNAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 145T

Report of:	Analysis of landfill site sample(s)
Report to:	Ballinasloe Town Council
Report date:	18/12/08

Facility:	**Pollboy Landfill Facility** Pollboy, Ballinasloe, Co. Galway
Reference No:	W0027-02

Date collected: 02/12/2008 Date received: 02/12/2008

Comments: No sample taken from L11 as this sampling point was 'dry'. No sample taken from CH2 as this sampling point no longer exists.

1) All Metals Analysed in the EPA, Dublin Laboratory
2) Cyanide Analysed by Alcontrol Laboratories, Dublin
3) Phenolic Compounds Analysed by Alcontrol Labs.
4) VOCs Analysed by EPA, Kilkenny
5) Solvents Analysed by EPA, Dublin
6) nm "Not measured"
7) nd "None detected"
8) nt "No time" - Time not recorded
9) nr "not reported"
10) no "none observed"
11) VOB "Visible On Bottom"
12) tntc "Too numerous to count"
13) F "Field measured parameters"
14) Total Kjeldahl Nitrogen = Total Nitrogen - Total Oxidised Nitrogen
15) Colour Analysis: Hazen units = mg/l Pt Co
16) The scope and accuracy of the analysis is shown on the reverse side of each report sheet
17) (**) Indicates parameters / results produced from non-accredited analytical methods

			Type of sample:	Leachate	Leachate	Leachate	Leachate	Leachate
			Sampling point:	L11 - no sample	L14	CH1	Lagoon	CH2 - no sample
			Sampled by:	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane	Cathal Ruane
			Time Sampled:	nt	15.35	14.05	14.15	nt
			Start/End - Dates of Analysis:	/	02-12-08/08-12-08	02-12-08/08-12-08	02-12-08/08-12-08	/
			Status of results:	**Final**	**Final**	**Final**	**Final**	**Final**
Parameter		**Units**	**Limits**					
F **	Temperature	°C		-	16.8	17.1	12.3	-
B4	pH	pH Units		-	6.6	7.5	8.1	-
B5	Conductivity @25°C	µS/cm		-	1546	15380	7210	-
B2	Biochemical Oxygen Demand	mg/l O2		-	14	84	100	-
B1	Chemical Oxygen Demand	mg/l O2		-	140	1830	698	-
C1	Ammonia	mg/l N		-	37	2600	480	-
C1	Chloride	mg/l Cl		-	53	2900	560	-

Signed: Ray Smith Date: 18/12/08

Ray Smith
Regional Chemist, EPA Castlebar

Appendix 6

2008 Meteorological Data from
Birr Weather Station

Birr, Co. Offaly											
Year	Month	Day	Rainfall (mm)	Wind Speed (Knots)	Relative Humidity (%)	MSL Pressure (hPa)	Evaporation (mm)	Max. Temp. (Degrees Celsius)	Min. Temp. (Degrees Celsius)	Mean Temp. (Degrees Celsius)	Wind Direction (Degrees from North)
2008	1	1	0.1	8.5	89	1015.9	0.6	11.5	7.5	9.5	145
2008	1	2	0.0	12.3	75	1006.9	1.0	7.8	3.9	5.9	130
2008	1	3	0.0	9.9	76	1002.3	0.5	3.9	-3.1	0.4	95
2008	1	4	6.2	8.5	93	991.3	0.6	7.4	-3.9	1.8	180
2008	1	5	6.5	9.1	85	994.2	0.5	6.4	1.8	4.1	235
2008	1	6	4.7	8.1	89	1001.8	0.4	6.9	0.4	3.7	210
2008	1	7	9.7	11.8	83	1005.2	0.6	7.5	3.1	5.3	235
2008	1	8	13.2	11.7	88	998.3	1.0	9.8	2.2	6.0	205
2008	1	9	8.5	9.3	90	999.4	0.4	8.6	0.8	4.7	220
2008	1	10	10.1	6.5	90	992.7	0.2	8.7	0.8	4.8	215
2008	1	11	0.0	3.8	92	997.5	0.1	5.5	-0.5	2.5	210
2008	1	12	4.0	8.6	94	999.2	0.4	10.9	0.8	5.9	160
2008	1	13	5.6	9.0	90	986.6	0.5	11.2	5.4	8.3	170
2008	1	14	2.5	9.5	89	985.3	0.6	9.0	5.4	7.2	245
2008	1	15	2.2	7.0	89	977.4	0.4	8.9	3.8	6.4	210
2008	1	16	0.2	5.2	90	991.2	0.5	5.5	3.2	4.4	190
2008	1	17	7.5	12.2	83	993.3	0.7	9.7	4.5	7.1	250
2008	1	18	8.8	12.7	91	1001.1	0.9	13.6	5.5	9.6	240
2008	1	19	14.3	6.5	96	1012.9	0.5	12.6	8.7	10.7	235
2008	1	20	3.2	8.3	95	1015.3	0.4	12.7	9.3	11.0	230
2008	1	21	2.7	10.3	88	1009.0	0.5	12.5	1.6	7.1	225
2008	1	22	4.6	7.1	96	1018.6	0.5	12.2	1.4	6.8	165
2008	1	23	3.3	11.0	86	1015.4	1.0	14.1	6.9	10.5	210
2008	1	24	0.7	10.4	76	1025.2	0.7	8.3	2.5	5.4	240

2008	1	25	0.0	14.4	71	1030.1	1.7	11.2	8.1	9.7	235
2008	1	26	0.0	11.7	74	1031.2	1.1	10.7	6.5	8.6	235
2008	1	27	0.0	6.6	83	1032.3	0.8	12.1	5.5	8.8	210
2008	1	28	0.2	7.8	86	1028.3	0.5	11.7	4.0	7.9	195
2008	1	29	9.2	7.2	89	1023.5	0.5	11.5	1.4	6.5	295
2008	1	30	0.4	9.0	89	1026.3	0.5	6.9	-0.3	3.3	225
2008	1	31	6.5	15.0	81	999.7	0.9	8.6	2.1	5.4	270
2008	2	1	2.4	6.9	93	1005.5	0.5	3.5	-2.1	0.7	280
2008	2	2	0.1	11.0	87	1005.7	0.9	9.3	-1.9	3.7	190
2008	2	3	6.9	12.5	86	984.9	1.0	9.2	0.4	4.8	180
2008	2	4	5.8	10.1	85	989.3	0.8	8.8	0.2	4.5	210
2008	2	5	3.2	9.3	89	989.3	0.9	9.9	4.9	7.4	220
2008	2	6	1.5	8.5	80	1020.8	0.5	10.0	0.0	5.0	175
2008	2	7	0.2	12.3	83	1021.5	1.2	14.2	9.9	12.1	195
2008	2	8	1.2	11.5	88	1020.2	0.9	11.9	9.7	10.8	175
2008	2	9	0.0	10.5	84	1023.5	0.9	13.1	6.0	9.6	170
2008	2	10	0.0	5.0	90	1030.8	0.6	8.0	3.2	5.6	150
2008	2	11	0.0	7.7	87	1029.1	0.9	11.8	4.5	8.2	150
2008	2	12	0.0	4.8	83	1033.0	0.9	12.4	1.6	7.0	145
2008	2	13	0.0	2.6	85	1036.2	1.0	14.9	-0.9	7.0	40
2008	2	14	0.0	4.9	94	1037.0	0.7	9.4	-1.3	4.1	50
2008	2	15	0.0	2.8	94	1038.6	0.5	5.5	-4.7	0.4	95
2008	2	16	0.0	4.0	82	1040.8	0.7	7.6	-1.6	3.0	110
2008	2	17	0.0	3.1	93	1039.0	0.6	6.7	-4.8	1.0	55
2008	2	18	0.0	1.9	94	1032.3	0.7	8.0	-6.2	0.9	135
2008	2	19	0.0	3.8	86	1022.4	0.7	7.1	-3.9	1.6	160
2008	2	20	0.0	5.5	83	1017.2	0.8	8.7	2.7	5.7	190
2008	2	21	0.5	13.0	88	1016.5	1.3	11.8	5.8	8.8	240
2008	2	22	1.2	12.5	82	1019.1	1.4	12.5	6.6	9.6	250

2008	2	23	0.0	10.7	82	1016.8	1.2	12.6	6.2	9.4	205
2008	2	24	1.6	8.2	77	1015.1	1.3	11.2	1.9	6.6	255
2008	2	25	1.4	12.8	81	1006.6	1.1	11.3	1.4	6.4	180
2008	2	26	0.5	11.6	72	1004.8	1.7	9.9	4.4	7.2	245
2008	2	27	0.0	4.7	86	1016.9	1.1	10.2	2.1	6.2	215
2008	2	28	0.0	5.1	90	1019.7	1.0	9.4	1.9	5.7	215
2008	2	29	5.0	14.4	88	1006.8	1.1	11.9	4.9	8.4	210
2008	3	1	0.4	12.2	79	1009.6	1.4	12.0	5.7	8.9	275
2008	3	2	2.4	9.5	74	1011.5	1.3	9.4	0.5	5.0	265
2008	3	3	9.1	7.9	90	1011.9	1.0	4.4	0.2	2.3	225
2008	3	4	0.3	7.0	80	1032.7	1.5	9.9	1.9	5.9	305
2008	3	5	0.0	7.3	83	1034.0	1.2	9.7	3.8	6.8	240
2008	3	6	3.0	11.1	81	1019.2	1.2	10.1	3.9	7.0	230
2008	3	7	1.2	9.6	82	1007.8	1.5	9.4	2.5	6.0	235
2008	3	8	4.9	12.4	85	995.4	1.7	11.1	3.8	7.5	225
2008	3	9	2.4	10.4	80	989.7	1.8	7.8	1.8	4.8	225
2008	3	10	7.6	12.5	85	965.0	1.3	7.8	2.0	4.9	285
2008	3	11	4.1	13.2	76	981.9	2.1	11.1	2.8	7.0	255
2008	3	12	3.2	15.4	74	1000.5	2.5	9.3	3.1	6.2	275
2008	3	13	1.4	7.5	87	1008.1	1.3	11.2	2.7	7.0	220
2008	3	14	0.0	6.2	88	1008.7	0.9	9.2	2.2	5.7	155
2008	3	15	6.7	7.8	93	1000.6	0.8	10.2	7.5	8.9	130
2008	3	16	1.5	7.8	83	1010.9	1.3	9.0	2.3	5.7	45
2008	3	17	0.0	6.8	77	1020.5	1.9	10.6	-0.8	4.9	70
2008	3	18	0.0	3.7	73	1025.4	1.8	9.8	-2.4	3.7	25
2008	3	19	0.1	4.2	82	1029.3	1.7	10.2	-2.6	3.8	310
2008	3	20	1.1	10.3	89	1017.7	0.9	10.7	3.2	7.0	280
2008	3	21	1.2	14.6	69	1003.8	2.1	9.8	2.5	6.2	315
2008	3	22	0.0	9.7	67	1014.1	2.6	8.5	0.8	4.7	355

2008	3	23	0.6	10.4	74	1007.9	2.3	9.7	2.9	6.3	325
2008	3	24	1.9	5.9	85	1006.4	1.5	10.1	1.5	5.8	335
2008	3	25	0.7	5.8	86	1008.5	1.6	11.4	-1.2	5.1	245
2008	3	26	4.0	6.2	85	1000.7	1.9	9.3	1.7	5.5	260
2008	3	27	0.6	6.9	79	999.7	2.2	10.4	-1.5	4.5	180
2008	3	28	6.0	12.0	86	991.5	1.8	11.0	3.3	7.2	270
2008	3	29	10.1	9.9	84	992.5	2.0	12.2	2.8	7.5	180
2008	3	30	20.2	7.0	84	995.8	1.9	10.5	3.0	6.8	185
2008	3	31	0.5	8.5	85	1009.9	1.8	11.5	0.0	5.8	190
2008	4	1	2.1	13.2	69	1016.2	3.1	12.5	7.7	10.1	260
2008	4	2	0.4	7.2	90	1027.0	1.7	14.0	8.6	11.3	270
2008	4	3	0.0	4.0	77	1032.0	2.4	16.2	7.9	12.1	250
2008	4	4	1.1	5.8	82	1028.3	1.2	13.6	5.4	9.5	265
2008	4	5	0.0	9.3	70	1023.7	2.9	10.5	1.1	5.8	360
2008	4	6	0.0	10.2	72	1015.5	3.1	8.6	-0.6	4.0	315
2008	4	7	0.0	7.4	77	1007.4	2.8	9.6	-0.1	4.8	335
2008	4	8	0.1	2.9	82	1003.7	1.7	9.5	0.0	4.8	245
2008	4	9	0.0	4.0	78	1000.0	2.4	10.7	2.7	6.7	275
2008	4	10	1.4	7.4	81	994.3	2.5	9.0	2.5	5.8	220
2008	4	11	3.6	7.9	86	993.6	2.4	9.5	1.0	5.3	280
2008	4	12	2.5	5.5	87	1001.2	1.9	10.2	0.9	5.6	230
2008	4	13	1.6	4.9	80	1011.8	2.6	12.2	-0.2	6.0	325
2008	4	14	0.0	4.2	71	1022.6	3.2	12.8	0.2	6.5	280
2008	4	15	0.0	2.8	70	1022.8	3.1	13.6	-0.6	6.5	220
2008	4	16	0.0	10.3	69	1016.0	3.9	12.5	2.4	7.5	135
2008	4	17	0.1	11.8	73	1007.9	3.4	9.9	3.4	6.7	80
2008	4	18	0.0	12.1	74	1001.3	2.9	10.2	1.5	5.9	75
2008	4	19	0.0	12.0	71	1001.5	2.4	9.5	5.9	7.7	70
2008	4	20	0.3	7.7	86	1005.8	1.4	9.0	6.3	7.7	65

2008	4	21	0.0	5.5	78	1009.5	2.2	13.8	4.9	9.4	60
2008	4	22	4.3	7.6	84	1007.6	2.7	15.0	1.2	8.1	150
2008	4	23	0.8	8.9	77	1011.3	3.7	16.4	3.9	10.2	165
2008	4	24	2.7	8.8	76	1014.3	3.7	14.4	5.7	10.1	230
2008	4	25	0.6	10.0	83	1018.6	2.4	16.3	7.2	11.8	190
2008	4	26	1.2	8.2	74	1016.3	2.8	14.8	6.4	10.6	205
2008	4	27	1.1	4.7	80	1010.8	3.3	16.0	2.9	9.5	170
2008	4	28	6.2	5.1	90	1001.3	2.2	11.9	2.6	7.3	260
2008	4	29	0.4	6.2	78	995.2	3.2	13.5	0.5	7.0	40
2008	4	30	0.2	9.6	74	995.0	3.2	13.1	3.6	8.4	335
2008	5	1	0.0	6.6	76	1002.9	3.7	14.1	2.8	8.5	225
2008	5	2	0.6	8.8	78	1013.8	3.5	15.7	4.4	10.1	155
2008	5	3	1.5	14.0	76	1012.5	5.3	19.0	10.5	14.8	150
2008	5	4	2.8	8.5	72	1015.1	4.4	18.4	8.9	13.7	210
2008	5	5	0.0	6.7	74	1024.0	5.2	19.4	7.3	13.4	160
2008	5	6	0.0	7.0	69	1020.8	4.7	21.7	8.6	15.2	145
2008	5	7	0.0	6.5	67	1016.9	5.2	22.7	8.0	15.4	135
2008	5	8	0.8	8.8	70	1010.1	4.4	23.3	10.6	17.0	130
2008	5	9	0.1	4.5	83	1012.6	2.3	16.4	11.3	13.9	300
2008	5	10	0.0	4.0	86	1019.0	2.3	18.4	9.9	14.2	15
2008	5	11	0.0	3.1	79	1020.5	3.9	21.3	12.1	16.7	30
2008	5	12	0.0	4.1	73	1018.8	4.5	25.0	12.5	18.8	70
2008	5	13	0.0	8.0	69	1019.6	5.7	20.3	10.0	15.2	65
2008	5	14	0.0	7.7	71	1017.3	5.4	18.4	8.3	13.4	60
2008	5	15	0.0	6.1	72	1012.9	4.8	17.0	6.5	11.8	60
2008	5	16	0.0	3.1	77	1009.6	3.7	19.4	4.6	12.0	75
2008	5	17	0.0	5.2	79	1010.0	2.5	14.6	6.2	10.4	60
2008	5	18	0.0	4.9	81	1015.7	1.9	13.7	7.2	10.5	100
2008	5	19	0.0	6.3	67	1017.1	3.6	15.0	7.1	11.1	150

2008	5	20	0.0	8.8	64	1015.8	3.4	14.2	5.9	10.1	130
2008	5	21	0.3	12.4	71	1011.4	3.8	15.4	10.3	12.9	140
2008	5	22	3.5	9.5	87	1008.8	3.0	16.1	9.7	12.9	140
2008	5	23	0.1	7.1	78	1011.0	3.5	18.8	7.7	13.3	115
2008	5	24	0.4	9.9	71	1015.7	5.2	17.8	8.5	13.2	50
2008	5	25	0.0	10.9	65	1018.2	4.9	18.3	5.9	12.1	55
2008	5	26	0.0	12.1	60	1018.0	5.6	17.7	9.8	13.8	50
2008	5	27	1.6	8.7	84	1014.3	2.0	12.3	9.0	10.7	50
2008	5	28	0.0	3.8	80	1007.0	3.0	16.3	9.3	12.8	20
2008	5	29	0.2	3.7	78	1011.6	3.8	19.2	9.8	14.5	150
2008	5	30	0.6	2.0	82	1015.1	2.5	19.3	11.2	15.3	45
2008	5	31	6.6	3.0	85	1017.6	4.3	23.5	10.3	16.9	95
2008	6	1	0.1	3.8	79	1016.5	4.8	23.4	6.8	15.1	50
2008	6	2	0.9	4.5	82	1012.5	4.0	19.2	6.6	12.9	180
2008	6	3	0.0	6.0	68	1014.6	5.2	17.7	7.9	12.8	215
2008	6	4	3.8	8.2	80	1012.3	3.0	16.8	7.4	12.1	165
2008	6	5	0.0	4.1	72	1016.9	3.9	17.1	3.3	10.2	280
2008	6	6	0.0	5.0	77	1020.1	3.8	17.1	4.7	10.9	305
2008	6	7	0.0	4.0	72	1021.7	2.3	20.2	4.5	12.4	190
2008	6	8	0.1	3.9	80	1025.3	3.3	21.1	11.1	16.1	255
2008	6	9	0.0	6.9	81	1027.5	3.5	20.2	13.6	16.9	235
2008	6	10	0.0	6.8	71	1028.4	5.8	20.3	12.7	16.5	285
2008	6	11	9.3	4.5	95	1025.9	1.5	14.0	10.3	12.2	335
2008	6	12	0.0	6.0	77	1023.9	3.4	16.0	7.6	11.8	330
2008	6	13	0.2	5.8	71	1021.0	3.6	15.9	8.0	12.0	320
2008	6	14	0.0	5.1	73	1017.3	3.5	16.4	4.7	10.6	300
2008	6	15	0.4	4.3	73	1014.3	3.4	15.8	3.6	9.7	335
2008	6	16	0.0	4.8	67	1013.8	3.7	15.8	7.4	11.6	310
2008	6	17	4.5	8.2	78	1006.7	3.3	17.8	10.1	14.0	205

2008	6	18	18.4	5.9	88	1001.7	2.1	14.7	9.1	11.9	200
2008	6	19	0.0	8.1	74	1008.0	5.2	18.4	7.5	13.0	275
2008	6	20	0.0	4.0	64	1016.3	5.1	18.2	8.0	13.1	255
2008	6	21	24.9	7.6	91	1007.9	2.1	17.5	10.2	13.9	70
2008	6	22	4.2	13.3	80	1004.3	3.4	15.7	8.4	12.1	270
2008	6	23	0.1	4.5	80	1018.4	3.3	16.8	6.8	11.8	185
2008	6	24	1.0	10.3	84	1011.9	2.7	15.7	12.0	13.9	145
2008	6	25	0.6	11.5	74	1008.6	4.8	18.0	12.0	15.0	250
2008	6	26	15.8	7.5	89	1012.5	1.8	14.4	8.9	11.7	215
2008	6	27	1.0	7.6	93	1012.8	2.0	17.4	8.1	12.8	245
2008	6	28	1.3	8.0	84	1014.4	2.8	17.4	12.4	14.9	230
2008	6	29	0.0	9.0	75	1014.7	4.6	17.8	11.5	14.7	250
2008	6	30	0.2	10.0	78	1014.4	3.4	18.7	11.5	15.1	180
2008	7	1	8.0	12.5	79	1002.7	4.1	18.7	13.0	15.9	170
2008	7	2	6.0	6.1	84	1001.8	3.3	17.6	11.4	14.5	170
2008	7	3	5.3	4.2	80	1007.9	3.6	17.7	8.9	13.3	295
2008	7	4	1.7	7.6	81	1010.2	3.8	18.7	7.4	13.1	110
2008	7	5	15.3	9.0	85	1000.2	4.0	19.2	11.7	15.5	70
2008	7	6	18.2	7.4	93	997.6	3.2	17.9	12.3	15.1	325
2008	7	7	0.8	8.3	78	1000.4	3.2	17.1	10.9	14.0	315
2008	7	8	0.0	6.4	70	1007.1	4.8	17.9	9.9	13.9	270
2008	7	9	5.0	6.5	88	1002.8	3.0	20.3	11.7	16.0	115
2008	7	10	3.1	7.1	91	1001.1	1.9	15.4	12.5	14.0	240
2008	7	11	0.0	8.6	79	1008.1	3.0	15.8	11.0	13.4	320
2008	7	12	0.3	5.6	77	1012.1	3.2	16.9	10.6	13.8	290
2008	7	13	0.0	4.5	84	1014.3	3.3	18.4	7.4	12.9	215
2008	7	14	0.0	6.0	90	1020.6	2.8	20.0	14.7	17.4	240
2008	7	15	0.1	9.2	78	1025.3	4.3	19.3	11.9	15.6	270
2008	7	16	0.0	6.6	81	1024.1	2.6	17.1	10.4	13.8	270

2008	7	17	0.2	7.2	84	1014.8	2.5	17.5	13.0	15.3	260
2008	7	18	2.8	7.3	93	1009.0	1.7	16.9	12.3	14.6	255
2008	7	19	0.1	8.8	71	1012.3	4.8	18.8	9.8	14.3	330
2008	7	20	0.0	6.8	72	1023.3	2.2	18.4	7.1	12.8	315
2008	7	21	0.0	5.3	85	1027.2	2.8	18.0	6.4	12.2	260
2008	7	22	0.0	5.5	86	1025.7	2.9	19.7	13.5	16.6	225
2008	7	23	0.0	5.5	86	1021.4	3.8	21.5	13.0	17.3	145
2008	7	24	0.1	6.9	79	1013.3	4.0	24.6	15.0	19.8	110
2008	7	25	1.9	3.2	84	1008.4	1.8	19.4	12.6	16.0	110
2008	7	26	0.0	3.5	78	1015.4	4.4	22.0	9.2	15.6	175
2008	7	27	0.0	4.1	78	1017.0	4.7	23.2	12.1	17.7	160
2008	7	28	0.9	3.0	84	1013.3	2.9	23.2	11.3	17.3	75
2008	7	29	11.2	7.0	90	1005.6	3.7	19.8	13.3	16.6	160
2008	7	30	3.0	8.8	77	1007.1	4.6	21.3	13.3	17.3	150
2008	7	31	7.8	4.4	91	1004.6	2.2	19.1	12.5	15.8	125
2008	8	1	12.7	7.5	84	1004.2	3.6	20.4	12.6	16.5	265
2008	8	2	0.5	6.8	82	1008.6	3.9	20.2	12.2	16.2	230
2008	8	3	1.0	7.2	81	1007.5	3.8	19.0	13.1	16.1	225
2008	8	4	0.2	4.2	82	1009.7	3.1	19.2	13.8	16.5	280
2008	8	5	8.8	5.8	88	1006.3	2.4	21.7	13.4	17.6	95
2008	8	6	19.2	4.5	95	1005.0	2.2	19.5	14.9	17.2	90
2008	8	7	6.5	6.1	90	1007.1	2.4	18.4	13.4	15.9	340
2008	8	8	0.0	4.1	76	1014.3	3.5	18.7	7.6	13.2	295
2008	8	9	26.3	8.7	93	1001.7	2.3	20.3	13.1	16.7	230
2008	8	10	3.5	10.2	86	997.8	3.1	17.8	12.9	15.4	250
2008	8	11	10.9	7.8	89	994.6	2.7	18.3	12.1	15.2	195
2008	8	12	13.7	4.6	93	987.6	1.9	15.6	10.9	13.3	235
2008	8	13	5.6	6.7	94	997.9	1.3	14.9	10.5	12.7	265
2008	8	14	1.4	6.0	79	1009.7	4.1	19.0	8.7	13.9	230

2008	8	15	3.0	7.0	84	1010.1	3.0	17.2	11.4	14.3	200
2008	8	16	25.7	9.3	92	996.7	2.1	17.1	12.0	14.6	165
2008	8	17	4.9	7.5	88	997.8	2.7	16.8	11.5	14.2	175
2008	8	18	19.5	6.8	87	991.0	3.0	19.6	13.0	16.3	130
2008	8	19	0.5	6.8	86	1002.4	2.9	19.3	13.9	16.6	300
2008	8	20	2.4	4.4	91	1007.4	2.1	18.3	12.2	15.3	235
2008	8	21	0.2	5.3	81	1013.8	3.3	19.5	10.2	14.9	340
2008	8	22	0.3	5.0	79	1018.6	2.4	17.2	8.1	12.7	320
2008	8	23	5.7	7.4	94	1009.3	1.2	15.8	10.3	13.1	185
2008	8	24	2.2	7.5	83	1004.8	3.2	18.9	12.3	15.6	240
2008	8	25	5.1	8.9	92	1007.4	1.1	16.4	13.7	15.1	235
2008	8	26	0.9	7.8	92	1015.6	1.5	17.9	15.2	16.6	240
2008	8	27	0.3	6.6	91	1019.8	1.4	17.3	14.8	16.1	255
2008	8	28	0.0	6.2	91	1020.9	2.7	21.1	14.3	17.7	250
2008	8	29	0.0	3.9	91	1018.1	1.9	20.7	14.4	17.6	230
2008	8	30	0.0	6.6	87	1012.6	2.3	18.5	14.4	16.5	185
2008	8	31	0.5	4.4	80	1010.7	2.8	18.1	11.2	14.7	265
2008	9	1	3.6	7.3	79	1005.0	2.9	16.6	9.7	13.2	225
2008	9	2	8.3	7.8	87	997.7	2.5	16.7	9.2	13.0	210
2008	9	3	5.0	9.5	84	994.7	3.0	17.0	9.1	13.1	280
2008	9	4	0.5	3.8	83	995.2	2.7	17.0	9.9	13.5	230
2008	9	5	21.7	9.1	96	989.8	0.9	12.8	9.1	11.0	35
2008	9	6	5.2	9.3	81	1001.5	2.6	17.8	8.0	12.9	15
2008	9	7	0.0	3.9	82	1010.7	2.5	16.9	4.4	10.7	320
2008	9	8	0.5	6.4	83	1009.8	2.2	16.5	9.8	13.2	170
2008	9	9	8.8	10.8	91	999.3	1.4	17.1	10.4	13.8	155
2008	9	10	4.7	10.6	89	998.3	1.4	16.9	7.7	12.3	180
2008	9	11	1.1	9.9	86	997.4	2.1	16.8	11.3	14.1	210
2008	9	12	2.8	4.8	90	1014.3	1.9	16.7	8.1	12.4	305

2008	9	13	0.1	4.5	87	1018.5	1.8	17.3	5.9	11.6	175
2008	9	14	14.2	5.0	95	1020.8	0.9	14.6	12.6	13.6	160
2008	9	15	0.5	5.3	89	1023.1	1.6	16.3	9.5	12.9	335
2008	9	16	1.3	5.1	89	1024.4	1.4	15.6	7.8	11.7	350
2008	9	17	0.0	2.7	84	1023.5	2.4	16.5	4.6	10.6	245
2008	9	18	0.4	5.6	84	1022.3	1.9	16.2	6.6	11.4	205
2008	9	19	0.6	4.9	88	1026.4	1.6	16.8	11.2	14.0	225
2008	9	20	0.0	5.1	83	1027.9	2.5	19.1	9.5	14.3	185
2008	9	21	0.1	4.3	87	1027.0	2.2	18.7	8.7	13.7	200
2008	9	22	0.0	5.3	79	1031.3	2.3	15.7	5.1	10.4	25
2008	9	23	0.0	3.7	83	1030.4	2.1	16.6	3.9	10.3	65
2008	9	24	0.0	2.8	86	1029.9	1.7	17.3	2.0	9.7	115
2008	9	25	0.0	2.3	85	1033.4	1.9	18.4	6.4	12.4	145
2008	9	26	0.0	4.6	83	1033.8	1.9	17.7	9.0	13.4	175
2008	9	27	0.0	4.3	87	1030.5	1.7	17.4	7.7	12.6	215
2008	9	28	0.5	3.8	81	1028.6	1.6	14.9	6.9	10.9	15
2008	9	29	1.0	7.7	89	1020.2	1.2	14.1	6.7	10.4	275
2008	9	30	2.9	10.6	89	1006.0	1.3	14.7	11.2	13.0	280
2008	10	1	0.4	10.0	75	1003.8	2.0	12.5	6.5	9.5	295
2008	10	2	7.1	8.1	84	1009.8	1.3	10.7	4.3	7.5	320
2008	10	3	0.0	5.0	79	1020.1	1.5	10.6	2.9	6.8	320
2008	10	4	14.9	10.0	89	1002.6	1.2	15.7	6.8	11.3	220
2008	10	5	5.2	5.5	83	1002.8	1.6	12.4	2.8	7.6	35
2008	10	6	3.0	8.5	89	1002.6	1.2	15.6	5.3	10.5	180
2008	10	7	9.7	5.5	92	1000.5	0.7	13.0	6.7	9.9	265
2008	10	8	0.2	4.5	87	1018.8	1.6	16.0	6.4	11.2	225
2008	10	9	4.0	10.3	88	1021.8	0.9	15.1	7.8	11.5	205
2008	10	10	9.8	9.6	93	1018.2	0.8	17.0	9.9	13.5	210
2008	10	11	0.0	3.7	90	1022.5	1.1	15.5	6.0	10.8	230

2008	10	12	0.0	4.1	94	1019.8	1.0	15.3	4.1	9.7	195
2008	10	13	0.4	6.0	86	1015.8	1.3	16.4	9.9	13.2	235
2008	10	14	17.0	3.5	98	1015.3	0.6	12.1	4.6	8.4	20
2008	10	15	1.2	5.8	91	1013.4	1.0	13.5	3.8	8.7	235
2008	10	16	0.1	4.8	87	1018.4	1.1	12.9	4.7	8.8	250
2008	10	17	0.4	4.8	93	1019.6	0.8	11.7	3.7	7.7	225
2008	10	18	0.6	7.2	91	1015.5	1.1	14.8	7.5	11.2	240
2008	10	19	0.3	12.7	86	1006.1	1.2	15.5	10.3	12.9	210
2008	10	20	7.7	11.8	84	998.7	1.0	14.2	5.5	9.9	245
2008	10	21	2.9	7.1	83	1010.5	1.1	10.5	3.4	7.0	240
2008	10	22	2.6	7.6	86	1017.6	1.0	12.4	5.0	8.7	235
2008	10	23	11.2	15.3	85	1006.6	1.2	15.4	7.5	11.5	210
2008	10	24	0.8	8.6	77	1019.3	1.3	12.5	5.2	8.9	240
2008	10	25	11.4	13.7	86	1015.5	1.1	14.0	9.1	11.6	215
2008	10	26	1.9	8.3	83	1013.9	0.7	12.0	4.5	8.3	270
2008	10	27	0.0	6.2	89	1014.7	0.7	8.6	1.3	5.0	325
2008	10	28	0.1	5.7	85	1017.2	0.6	6.7	-1.0	2.9	285
2008	10	29	7.3	5.9	91	1004.5	0.6	9.5	-1.7	3.9	210
2008	10	30	1.2	8.4	84	1002.3	0.9	7.0	2.0	4.5	45
2008	10	31	0.0	4.5	84	1015.9	0.7	8.6	-1.8	3.4	25
2008	11	1	0.0	4.5	87	1017.5	0.6	7.6	-1.7	3.0	20
2008	11	2	0.0	2.2	94	1022.5	0.4	9.7	0.5	5.1	340
2008	11	3	0.0	2.9	98	1021.8	0.4	7.7	3.7	5.7	25
2008	11	4	0.0	3.3	96	1021.4	0.4	9.3	1.6	5.5	70
2008	11	5	0.1	1.6	97	1021.4	0.5	11.9	7.4	9.7	360
2008	11	6	10.0	8.1	90	1008.9	0.6	11.4	6.8	9.1	160
2008	11	7	8.4	10.4	91	995.9	0.7	9.4	5.4	7.4	220
2008	11	8	6.6	9.1	89	995.0	0.9	11.8	4.4	8.1	205
2008	11	9	9.8	11.4	86	997.1	0.8	7.2	2.2	4.7	235

2008	11	10	1.8	12.7	80	995.1	0.6	8.9	3.8	6.4	240
2008	11	11	1.9	7.3	85	1006.8	0.6	10.5	2.9	6.7	285
2008	11	12	0.0	4.5	90	1019.6	0.4	10.8	1.3	6.1	250
2008	11	13	4.3	7.7	95	1019.9	0.7	12.2	8.7	10.5	260
2008	11	14	0.7	9.1	90	1021.9	0.7	12.7	11.0	11.9	250
2008	11	15	3.4	4.7	94	1024.8	0.4	12.3	8.9	10.6	265
2008	11	16	6.4	4.1	99	1031.3	0.4	11.6	8.5	10.1	60
2008	11	17	2.8	9.8	93	1023.8	0.7	11.5	8.6	10.1	230
2008	11	18	0.1	6.8	90	1024.2	0.4	11.2	7.8	9.5	325
2008	11	19	0.0	6.6	94	1026.6	0.4	12.1	6.7	9.4	295
2008	11	20	0.6	9.2	91	1023.1	0.6	12.6	10.9	11.8	300
2008	11	21	0.3	10.3	85	1023.8	0.8	11.6	7.3	9.5	330
2008	11	22	2.2	6.5	96	1022.9	0.6	10.3	7.7	9.0	325
2008	11	23	9.4	12.2	84	1004.6	0.5	10.9	3.7	7.3	315
2008	11	24	2.6	11.8	78	1010.6	0.7	8.0	2.6	5.3	355
2008	11	25	0.8	5.4	93	1029.3	0.1	8.8	1.3	5.1	330
2008	11	26	2.1	6.5	95	1026.7	0.3	11.5	7.2	9.4	245
2008	11	27	2.7	9.4	84	1007.8	0.2	9.6	2.3	6.0	230
2008	11	28	0.0	4.0	92	997.5	0.1	5.3	-1.9	1.7	215
2008	11	29	0.0	2.6	97	997.8	0.0	4.8	-4.0	0.4	325
2008	11	30	0.0	3.4	96	1004.1	0.0	4.0	-3.8	0.1	330
2008	12	1	0.0	3.7	94	1012.6	0.0	5.3	-3.1	1.1	275
2008	12	2	0.9	4.6	92	1006.2	0.3	5.7	0.4	3.1	270
2008	12	3	4.1	5.4	97	1000.4	0.2	7.2	-4.5	1.4	190
2008	12	4	13.7	8.2	91	978.6	0.4	7.7	4.3	6.0	245
2008	12	5	1.5	7.2	92	993.1	0.2	8.0	0.8	4.4	330
2008	12	6	0.0	2.1	99	1016.7	0.0	4.7	-3.6	0.6	230
2008	12	7	0.0	5.0	90	1024.7	0.1	7.1	-3.6	1.8	205
2008	12	8	6.3	6.5	91	1021.5	0.2	7.8	1.4	4.6	340

2008	12	9	0.4	6.4	89	1028.0	0.3	6.4	1.0	3.7	320
2008	12	10	2.3	2.2	100	1023.6	0.2	6.5	-1.4	2.6	270
2008	12	11	3.1	4.7	98	1011.9	0.2	6.5	2.3	4.4	185
2008	12	12	18.4	9.2	93	998.9	0.5	10.7	1.8	6.3	200
2008	12	13	0.7	4.8	94	988.5	0.0	5.8	0.1	3.0	260
2008	12	14	1.4	5.8	94	1004.7	0.2	4.7	-1.5	1.6	325
2008	12	15	0.1	5.6	93	1017.8	0.3	8.5	-2.1	3.2	190
2008	12	16	1.3	8.3	87	1009.6	0.0	11.0	3.0	7.0	200
2008	12	17	0.8	8.5	90	1013.0	0.3	10.7	2.1	6.4	235
2008	12	18	2.9	11.2	83	1013.9	0.8	11.2	4.0	7.6	255
2008	12	19	1.6	12.3	87	1017.9	0.7	12.2	2.5	7.4	225
2008	12	20	1.7	9.0	91	1022.4	0.6	12.1	8.8	10.5	255
2008	12	21	2.2	10.4	95	1026.5	0.5	12.3	10.1	11.2	245
2008	12	22	0.3	6.9	93	1031.9	0.4	11.1	5.9	8.5	195
2008	12	23	0.0	5.7	86	1033.4	0.5	9.2	6.7	8.0	190
2008	12	24	0.0	3.6	84	1034.1	0.5	8.4	6.2	7.3	190
2008	12	25	0.0	3.6	83	1034.6	0.5	7.8	2.9	5.4	135
2008	12	26	0.0	4.0	86	1037.3	0.5	6.1	-0.1	3.0	95
2008	12	27	0.0	5.0	93	1036.0	0.0	4.8	-2.6	1.1	65
2008	12	28	0.0	5.7	85	1029.0	0.1	6.3	-1.7	2.3	75
2008	12	29	0.0	6.0	88	1026.3	0.4	2.8	-2.4	0.2	130
2008	12	30	0.0	8.9	85	1026.0	0.5	6.5	2.3	4.4	150
2008	12	31	0.0	6.8	82	1025.8	0.5	6.0	0.6	3.3	145

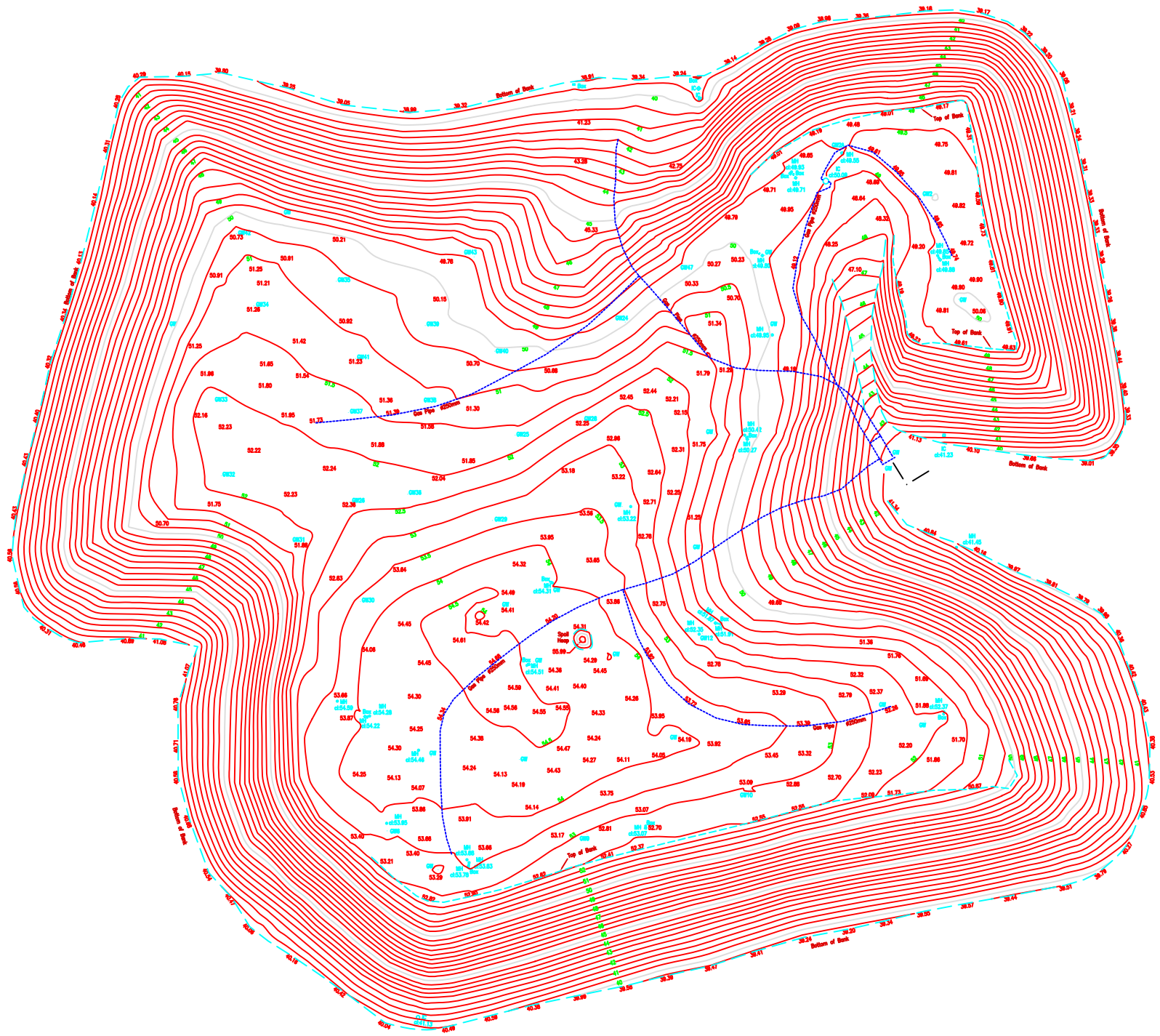
Appendix 7
Water Balance Calculation

Year	Year	Active Cell	Active area	Annual Rainfall	PE	A.E.	Effective Rainfall	Active area Infiltration	Restored Phase No.	Liquid Waste	Restored Area	Infiltration to restored area	Restored area infiltration (m3)	Annual Leachate
			m2	mm	mm	mm	mm	m3		m3	m2	(%)	m3	m3
2003	1	OL+1	86400	928	563	450.4	478	41265	OL	0	0	20	0	41265
2004	2	1	36000	928	563	450.4	478	17194	OL	0	61400	20	5,865	23059
2005	3	1	36000	928	563	450.4	478	17194	OL	0	61400	20	5865	23059
2006	4	none		928	563	450.4	478	0	OL & 1	0	61400	20	8635	8635
2007	5	none		928	563	450.4	478	0	OL & 1	0	90400	20	8635	8635
2008	6	none		928	563	450.4	478	0	OL & 1	0	90400	20	8635	8635
2009	7	none		928	563	450.4	478	0	OL & 1	0	90400	20	8635	8635
2010	8	none		928	563	450.4	478	0	OL & 1	0	125400	20	8635	8635
2011	9	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2012	10	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2013	11	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2014	12	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2015	13	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2016	14	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2017	15	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2018	16	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2019	17	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2020	18	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2021	19	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2022	20	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2023	21	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2024	22	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2025	23	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2026	24	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2027	25	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2028	26	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2029	27	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2030	28	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2031	29	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2032	30	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635
2033	31	none		928	563	450.4	478	0	OL & 1	0	150400	20	8635	8635

Annual Rainfall (mm)	**923**
Potential Evapotranspiration (mm)	**563**
Actual Evapotranspiration (mm) (assumed to be 80% PE)	**454**
Effective Rainfall (mm)	**469**
Waste Density (tonne/m3)	**0.8**

Landfill Cell areas: [61,400 (old cell) + 36,000 (Cell 1)]m^2 = **97,400m^2**

Appendix 8
Topographical Survey



L A N D S U R V E Y S
22 Mellifont Avenue, Dun Laoghaire, Co. Dublin.
Ph: 2805212 Fax: 2302535 info@landsurveys.ie

Site at:

Pollboy Landfill, Ballinasloe

Client: RPS	Scale: 1:1000 (A1)
	Contour: 0.5m Interval
	Datum: O.S. Malin Hd.
	Issued: 27/10/09
	Ref: D13297-F2D