ANNUAL ENVIRONMENTAL REPORT

By

Drogheda Borough Council

To

Environmental Protection Agency

For

Waste license Reference (W0033-01)

Reporting Period January – December 2008

DROGHEDA LANDFILL SITE COUNTY LOUTH

DROGHEDA BOROUGH COUNCIL

DROGHEDA LANDFILL SITE

JANUARY – DECEMBER 2008

ANNUAL ENVIRONMENTAL REPORT

DOCUMENT CONTROL SHEET

Prepared by:	Angela Mc Ginley
Office of Origin:	Letterkenny
Checked by:	Angela Mc Ginley
Office of Origin:	Letterkenny
Report Ref:	IBR0078/Reports
Status:	Final
Revision No:	*
Date of Release:	03 April 2009

Approved and authorised for issue:

Name Donal Doyle
Position Technical Director

CONTENTS

APPENDICES

1.0 INTRODUCTION

This Annual Environmental Report (AER) has been prepared to meet the requirements of Condition 2.8 of Waste Licence W0033-01 for Drogheda Landfill and includes the information listed in Schedule C of the Waste Licence. Drogheda Landfill Site has been in operation since 1983 and has ceased accepting waste for disposal since the waste licence was granted on 30th December 1999 as required by the Waste Management (Licensing) Regulations, 1997.

The site is located 600 metres north of the River Boyne on the north-west edge of Drogheda town. The site is adjacent to Leonards Cross at the junction of the R168 road to Collon (and there on to the newly constructed M1) and Cement Road, a minor road linking the Slane Road and the N1 primary road northwards from Drogheda to Dundalk. The site is approximately 32 hectares in extent and was formally a limestone quarry. The site has historically operated on a dilute and disperse principle.

REPORT PERIOD

The report period for this Annual Environmental Report (AER) is from January to December 2008.

2.0 WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

The licensed disposal activities, in accordance with the Third Schedule of the Waste Management Act, 1996, are restricted to those listed as follows:

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

Licensed waste recovery activities, in accordance with the Fourth Schedule of the Waste Management Act, 1996, are restricted to those listed as follows:

- Class 2 Recycling or reclamation of organic substances, which are not used as solvents (including composting and other biological transformation processes).
- Class 3 Recycling or reclamation of metals and metal compounds.
- Class 4 Recycling or reclamation of other inorganic materials.
- Class 10 The treatment of waste on land with a consequential benefit for an agricultural activity or ecological system.
- Class 11 Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.

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

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

Table 1 shows waste quantities accepted at Drogheda landfill site from 1997-2006. The site is closed.

Table 1 Waste Quantities Accepted (tonnes)

Waste Types	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total	*75,350	*86,000	*40,000	*58,506	*27,085	*21,288	-	8,744	-	**58,584

*Figures based on estimated.

**Capping material under the Capping and Restoration Contract.

Table 2 shows waste quantities accepted for recycling at Drogheda Civic Waste Facility in 2008

Table 2 Waste tonnages accepted at the Civic Waste Facility in 2008

	Paper Cardboard	Plastic	Glass	Clothes	Batteries	Fluorescent tubes	Greenery	Wood	Scrap Metal	WEEE Goods	Total Tonnage Per Month
EWC Code	**(20 01 01)**	**(20 01 39)**	**(20 01 02)**	**(20 01 10)**	**(20 01 33)**	**(20 01 21)**	**(20 02 01)**	**(20 01 38)**	**(20 01 40)**	**(20 01 35)**	
January	84500	3200	9020	11080	2260		18460	50080		48660	227.3
February	52900	8960	16940	11180	1620		37600	36500		41720	207.4
March	43760		21140	7040			29960	51320		46860	200.1
April	60340	11060	9700	9280	2520		58560	57900		48360	257.7
May	40760		9200		1560		86320	55380		48740	242.0
June	74940	11560	23900	10180	2280		64600	47380		46640	281.5
July	64520	14100	17280	9900	1420	200.0	103560	71520	40860	50780	374.1
August	52680	41640	10700	11040	3200		83240	54280	28060	47540	332.4
September	57940	5780	9540	10060	1420	0.2	116340	55920	34060	46280	337.3
October	41240	8120	21160	9320	1940	0.2	65480	53200	25080	36940	262.5
November	51200	20820		9060	820	0.2	46920	37780	26320	40220	233.1
December	52860	13600	18840		1280		10880	42060	26900	48100	214.5
Total kg	677640	138840	167420	98140	20320	200.6	721920	613320	181280	550840	
Total Tonnes	**677.6**	**138.8**	**167.4**	**98.1**	**20.3**	**0.2**	**721.9**	**613.3**	**181.3**	**550.8**	**3169.9**

4.0 METHODS OF DEPOSITION OF WASTE

4.1 LANDFILL

The site has ceased to accept waste for disposal since the waste licence was granted in December 1999. The only materials accepted at the site are inert wastes, which are utilised for capping at the site. Phase 1 capping works were completed in September 2007.

4.2 CIVIC WASTE FACILITY

All waste deposited at the CWF must be placed into:

- Into a hopper of the compactor for disposal
- Into a receptacle for recovery , or
- In the case where inspection is required, into a designated inspection area

The storage containers and storage areas are clearly labelled with yellow backgrounds and black/green writing to indicate their content.

There are samples or signage describing the type of waste which can deposited into each container.

5.0 SUMMARY REPORT ON EMISSIONS AND INTERPRETATION OF RESULTS

5.1 MONITORING LOCATIONS

Monitoring is carried out at locations and at frequencies as specified in Schedule F of the waste licence. Permanent access to all monitoring points is maintained.

The results contained in this report were assessed as follows:

- **Groundwater**: Assessed against the European Communities (Drinking Water) (No. 2) Regulations 2007 parametric value (DWR) and Interim Guideline Value (IGV) Towards Setting Guideline Values for the Protection of Ground Water in Ireland. The following substances defined by the European communities (Drinking Water) (No. 2) Regulations 2007 were monitored in April and are referred to in the report

- **Total pesticides** means the sum of all individual pesticides detected and quantified in the course of the monitoring procedure. The DWR is 0.50ug/l. (Only those pesticides which are likely to be present in a given supply require to be monitored- organic insecticides, organic herbicides, organic fungicides, organic nematocides, organic acaricides, organic

algicides, organic rodenticides, organic slimicides , related products (*inter alia*, growth regulators and their relevant metabolites, degradation and reaction products.)

- **Polycyclic aromatic hydrocarbons** are the sum of concentrations of specified compounds. The DWR is 0.10ug/l. The specified compounds are benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene and indeno(1,2,3-cd)pyrene.

- **Total trihalomethanes** are the sum of concentrations of specified compounds. The DWR is 100ug/l. The specified compounds are: chloroform, bromoform, dibrom-ochloromethane and bromodichloromethane

- **Surface Water**: Assessed against the Surface Water Quality Standards (SWQS) laid out in the European Communities (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations 1989.

  Boreholes BH4A and BH10A where installed in March 2000. Boreholes BH1A, BH2A, BH3A, BH5A, BH6A, BH7, BH8A, BH9A and BH11A where installed in August 2001. These points where surveyed in October 2001 and grid reference points are given below. LG1 to LG7 where installed in October 1998.

  Leachate monitoring points L1A to L5A where installed in February 2000. All monitoring points are shown in Drawing No IBL0006/01 Location of Monitoring Points in Appendix A.

Table 3 Grid References of Monitoring Points

Monitoring Points	Easting	Northing
Groundwater Boreholes		
BH1A	306777	276414
BH2A	306869	276471
BH3A	307055	276063
BH4A	306959	276523
BH5A	307047	276563
BH6A	307182	275918
BH7	307239	276620
BH8A	307246	275890
BH9A	307394	275853
BH10A	307500	275928
BH11A	307699	276158
Surface Water		
SW1	307164	276270
SW2	307414	276470
SW3	307388	275910
Gas Piezometers		
LG1	306773	276393
LG2	306820	276330
LG3	306867	276283
LG4	306913	276218
LG5	306949	276171
LG6	307564	276281
LG7	307580	276241
Leachate		
L1A	307021	276228
L2A	307028	276337
L3A	307216	276378
L4A	307291	276334
L5A	307359	276279
Noise		
N1	306786	276384
N2	306850	276238
N3	307311	275840
Dust		
DG1	306854	276352
DG2	307024	276073
DG3	307539	275993
DG4	307131	275903

5.2 GROUNDWATER

As required under the Waste Licence, groundwater monitoring has been undertaken at the borehole locations as set out in Table 3 of the waste licence. Schedule F of the waste licence requires the monitoring of certain parameters on either a monthly, quarterly or annual basis as shown in Table 4.

Table 4 Groundwater parameters monitoring frequencies

Monitoring Frequency	BH1A, BH4A, BH6A, BH9A, BH10A, BH11A	BH2A, BH3A, BH5A, BH7A, BH8A
Monthly	Visual Inspection and Odour, Groundwater Level, Ammoniacal Nitrogen, Chloride, Cadmium, Chromium, Electrical Conductivity, pH, Temperature, Iron, Lead, Manganese, Potassium, Sodium, Barium, Nickel, Nitrate, Nitrite, Phenol, Zinc	Groundwater Level, Ammoniacal Nitrogen, Electrical Conductivity, pH, Temperature
Quarterly	Dissolved Oxygen, Total Suspended Solids, TON, TOC, Zinc	Visual Inspection and Odour, Chloride, Dissolved Oxygen, Cadmium, Chromium, Iron, Lead, Manganese, Potassium, Sodium, TON, TOC, Barium, Nickel, Nitrate, Nitrite, Phenol
Annually	Boron, Calcium, Copper, Cyanide, Fluoride, Magnesium, Mercury, Sulphate, Total Alkalinity, Total Phosphorous, Residues on Evaporation, Faecal Coliforms, Total Coliforms List I & II substances monitored biannually from BH10, annually from other boreholes	Boron, Calcium, Copper, Cyanide, Fluoride, Magnesium, Mercury, Sulphate, Total Alkalinity, Total Phosphorous, Residues on Evaporation, Zinc, Faecal Coliforms, Total Coliforms

These results are presented graphically and in table format in Appendix B.

Parameters that are indicative of possible leachate contamination include Ammoniacal-N, Conductivity, Iron, Chloride and heavy metals.

The boreholes BH1A – BH5A and BH7 provide an indication of the up-gradient baseline groundwater characteristics whilst BH6A, BH8A and BH9A typify the down-gradient location for flow from the site. In addition BH11A provides information on the nature of the groundwater deep beneath the landfill site and BH10A provides down-gradient information in a borehole, which was penetrated through a karstic void and hence is potentially an area of relatively high groundwater flows emanating from the site.

5.3 UP-STREAM

The pH levels for all up-stream boreholes remain between the IGV and DWR of 6.5 and 9.5 pH units except for BH7 which exceeded the limits three times during monitoring. The highest pH value of 10.4 was recorded in BH7 in July of this monitoring period.

All up-stream boreholes recorded Electrical Conductivity levels below the IGV of 1,000µS/cm and DWR of 2,500µS/cm, except BH1A and BH5A which recorded levels above the IGV at different periods of the year.

TON levels are highest upstream in BH4A and BH5A. BH5A shows significant fluctuations over the year.

Ammonia levels were elevated for two of the up-stream boreholes (BH4A ad BH5A). BH5A has consistently recorded elevated Ammonia levels above IGV (0.15mg/l) and DWR (0.30mg/l) throughout the year, with the highest results recorded in February (10.94mg/l). BH4A (0.17mg/l) exceeded the IGV in November.

Potassium levels remained elevated at BH3A, BH5A and BH7, and occasionally in BH1A. The IGV of 5mg/l was exceeded for the entire monitoring period in BH3A and BH7. Potassium levels were highest in BH7A in July (145.08 mg/l).

Chromium, Cadmium, Lead and Sodium levels upstream were all equal to or below the relevant IGV and/or DWR for the monitoring period.

Nitrite is below the IGV and DWR except BH1A and BH4A in August which exceeds the IGV only.

Barium and Zinc levels exceed the IGV in BH4 in May. All other recordings are below the limits.

Nickel concentrations exceeded the IGV and DWR in BH1A, BH4A and BH5A at times during monitoring. Manganese concentrations exceed the IGV and DWR constantly in BH4A and BH5A and at times in BH1A and BH7A. Iron exceeded the IGV and DWR in all boreholes for a majority of the monitoring period.

Chloride levels exceed the IGV of 30 mg/l in BH1A, BH3A, BH4A, BH5A and BH7A. All boreholes up-gradient were below the DWR of 250 mg/l.

TON results show no abnormal change.

Trends for remaining parameters are presented in Appendix B. The results show that the groundwater has been contaminated upstream.

5.4 ANNUAL MONITORING RESULTS

Boron, Calcium, Copper, Cyanide, Fluoride, Magnesium, Mercury and Sulphate concentrations in all the boreholes are below DWR and/or IGV in this monitoring period.

Orthophosphate forms are produced by natural processes, but major man-influenced sources include: partially treated and untreated sewage, runoff from agricultural sites and application of some lawn fertilisers. Orthophosphate values up-gradient are equal to or exceed the IGV of 0.03mg/l in BH1A (0.03mg/l), BH2A (0.04mg/l), BH5A (0.04mg/l) and BH7A (0.03mg/l).

Total Coliforms were recorded in BH1A 36/100ml, BH2A 24/100ml, BH3A 133/100ml, BH4A 6/100ml and BH7A 13/100ml. Faecal coliforms were recorded in BH2A 1/100ml.

Annual analysis for List I and II substances were undertaken at BH1A and BH4A up-gradient of the site. These results are included in Appendix C.

Analysis for Polycyclic Aromatic Hydrocarbons (total 16 EPA PAHs) recorded <10ng/l and is below the DWR of 0.1μg/l for PAH.

Phenols levels were analysed by an external lab and were <0.01mg/l. These concentrations are lower than the limit of detection for the methodology used for Phenols however this is higher than the appropriate IGV of 0.5μg/l.

Pesticide analysis was carried out in BH1A and BH4A in April. These results are below the parametric value for individual pesticides of 0.1μg/l as per the Drinking Water Regulation and the IGV for those comparable. The IGV for Total pesticides is 0.5μg/l. Total pesticides means the sum of all individual pesticides detected and quantified in the course of the monitoring procedure. As these were all less than the lower detection limit used they cannot be quantified and therefore compared to the IGV.

Total-Trihalomethanes (THM) which is the sum of Dichloromethane, Chloroform, Bromodichloromethane and Bromoform levels were below the lower detection limit for the analytical methodology used (>0.1μg/l) and are below the DWR of 100μg/l total trihalomethanes.

Volatiles and semivolatiles parameters were either below the IGV/DWR or less than the detection limit for those comparable (the detection limit of 0.1μg/l is higher than the IGV/DWR for a number of parameters). Cis-1,2-dichloroethene was detected in BH4 (0.332μg/l) and is below the DWR of 30μg/l. Note: Cis-1,2-dichloroethene was also detected in this borehole in 2007.

5.5 DOWNSTREAM

The pH levels for all boreholes remain between the IGV and DWR of 6.5 to 9.5 pH units throughout the monitoring period.

Downstream boreholes Electrical Conductivity were below the DWR level in all locations. BH11A exceeded the IGV in January with a recording of 1531 µS/cm.

TON levels are highest downstream in BH11A (7.65mg/l) in January and the concentrations in each borehole show no significant fluctuations over the past year of monitoring.

Ammonia levels for the reporting period downstream have all been below the IGV of 0.15mg/l and the DWR of 0.3mg/l

Cadmium, Chromium, Sodium, Zinc, Nickel and Barium were below the relevant IGV and/or DWR throughout the monitoring period.

Nitrite is below the IGV and DWR except for BH6A and BH10A which exceed the IGV and DWR in August.

Manganese concentrations exceed the IGV and DWR in BH6A, BH9A, BH10A and BH11A at different periods of the year. Iron concentrations exceeded the IGV and DWR in all boreholes at different periods throughout the year.

Chloride levels do not exceed the DWR of 250 mg/l, however all boreholes except BH8A in January exceed the IGV of 30mg/l throughout the monitoring. Lead levels were below the DWR in this monitoring period and only BH6A exceeded the IGV in June and August.

Potassium levels are below the IGV in all boreholes except BH10A and BH11A throughout the monitoring period.

Trends for remaining parameters are presented in Appendix B. The results show that the groundwater has been contaminated downstream.

5.6 ANNUAL MONITORING RESULTS

In all the down-gradient boreholes, Boron, Calcium, Copper, Fluoride and Mercury values were all below the DWR and/ or IGV.

Sulphate concentrations are below IGV and DWR, except for BH11A which recorded 347.7mg/l.

Ortho-phosphate values down-gradient levels range from <0.02 to 0.03mg/l, below or equal to the IGV.

Cyanide concentrations of <0.05mg/l are recorded in all the boreholes and are below the lower limit of detection for the methodology; however these are higher than the appropriate IGV (0.001mg/l).

Total Coliforms were recorded in all down-gradient boreholes in April. Total Coliforms ranged from 5/100ml (BH9A) to 33/100ml (BH10A). Faecal Coliforms were also recorded in BH8A (2/100ml), BH11A (3/100ml) and BH10A (6/100ml).

Annual analysis for List I and II substances were undertaken at BH6A, BH9A, BH10A and BH11A down-gradient of the site. These results are included in Appendix C.

Analysis for Polycyclic Aromatic Hydrocarbons (total 16 EPA PAHs) recorded <10ng/l and is below the DWR of 0.1μg/l for PAH.

Phenols levels were analysed by an external lab and were <0.01mg/l. These concentrations are lower than the limit of detection for the methodology used for Phenols however this is higher than the appropriate IGV of 0.5μg/l.

Pesticide analysis was carried out in April. These results are below the parametric value for individual pesticides of 0.1μg/l as per the Drinking Water Regulation and the IGV for those comparable. The IGV for Total pesticides is 0.5μg/l. Total pesticides means the sum of all individual pesticides detected and quantified in the course of the monitoring procedure. As these were all less than the lower detection limit used they cannot be quantified and therefore compared to the IGV.

Total-Trihalomethanes (THM) were below the lower detection limit for the analytical methodology used (>0.1μg/l) and are below the DWR of 100μg/l (THM).

Volatiles and semivolatiles parameters were either below the IGV/DWR or less than the detection limit for those comparable. The detection limit of 0.1ug/l is higher than the IGV/DWR for a number of parameters.

5.7 SURFACE WATER

Schedule F of the waste licence requires the monitoring of certain parameters on either a quarterly or annual basis; the frequency of the monitoring of surface water parameters are shown in Table 5.

Table 5 Surface Water Monitoring Frequency

Monitoring Frequency	Parameter
Quarterly	Ammoniacal Nitrogen, BOD, COD, Chloride, Dissolved Oxygen, Electrical Conductivity, pH, Total Suspended Solids, Temperature, Cadmium, Chromium, Iron, Lead, Potassium, Total Phosphorous, Barium, Nickel, Nitrate, Nitrite, and Phenol
Annually	Calcium, Copper, Magnesium, Manganese, Mercury, Sulphate, Sodium, Total Alkalinity, TON, and Zinc

Chloride, Conductivity, Total suspended solids, Cadmium, Chromium, Nickel and Nitrite were all below the SWQS and/or IGV in all surface water locations. pH was recorded outside the SWQS limit of 5.5-9.0 pH units in SW3 in July.

Surface water results are presented in Appendix D.

5.8 QUARRY LAKE

Monitoring points SW1 and SW3 are within the Quarry Lake. BOD is an indicator of the deoxygenating potential of waste in water. BOD has been classified as SWQS A1 in both monitoring locations. COD was highest in October at 42mg/l in SW3. The highest Potassium level recorded was 39.48mg/l in SW1 during the month of January. The highest Ammonia level was 0.13mg/l in SW3 in January therefore all recordings fall into the A1 SWQS classification. The highest Barium Level recorded was 79.5mg/l in SW3 in January, fitting into the SWQS A1 Classification. Dissolved Oxygen levels show over saturation in SW1 in April and July and in SW3 in January and April, this may have been due to photosynthesis. Phenol levels in SW1 and SW3 were less than the lower detection limit during the year except in January and October.

5.9 POND

SW2 sample is taken from the cement works pond, which is adjacent and up gradient of the site. The highest Ammonia levels recorded during the monitoring period was 0.13mg/l. Potassium levels remain high in SW2 showing a peak value of 35.50mg/l. Phenol levels in SW2 were less than the lower detection limit during the year except in January and October where the readings were 0.020mg/l and 0.030mg/l respectively. The highest Barium level recorded in SW2 was 80.50mg/l in January. Dissolved oxygen ranged from 74% in January to 112% in April. BOD falls into the SWQS A1 classification with the highest reading being 2.9mg/l. COD is above the SWQS in October at 54mg/l.

5.10 CAPPED AREA

SW4 and SW5 monitor the surface water arising from the capped area. BOD ranged from <1.5mg/l to <2.0mg/l fitting into the SWQS A1 Classification. The highest COD recording was in SW5 in October, 57mg/l which is above the SWQS of 40mg/l. SW5 in October is below the IGV of 5mg/l for potassium, all other recording are above the IGV. All Ammonia results fall into the SWQS A1 classifications of 0.2mg/l. Barium had a recording of <50µg/l for both locations which is below the SWQS. Phenol levels in SW4 and SW5 were less than the lower detection limit in April. In October the readings were both 0.03mg/l. Dissolved oxygen ranged from 80% to 92%.

5.11 ANNUALLY

Annual analysis for List I and II substances were undertaken at SW1 in April. These results are included in Appendix D.

Analysis for Polycyclic Aromatic Hydrocarbons (total 16 EPA PAHs) recorded <10ng/l and is below the DWR of 0.1µg/l for PAH.

Phenols levels were analysed by an external lab and were <0.01mg/l. These concentrations are lower than the limit of detection for the methodology used for Phenols however this is higher than the appropriate IGV of 0.5µg/l.

Pesticide analysis was carried out in April. These results are below the parametric value for individual pesticides of 0.1µg/l as per the Drinking Water Regulation and the IGV for those comparable. The IGV for Total pesticides is 0.5µg/l. Total pesticides means the sum of all individual pesticides detected and quantified in the course of the monitoring procedure. As these were all less than the lower detection limit used they cannot be quantified and therefore compared to the IGV.

Total-Trihalomethanes (THM) were below the lower detection limit for the analytical methodology used (>0.1μg/l) and are below the DWR of 100μg/l total trihalomethanes.

Volatiles and semivolatiles parameters were either below the IGV or less than the detection limit for those comparable. The detection limit of 0.1ug/l is higher than the IGV for a number of parameters.

5.12 DISCHARGE TO SEWER

There are two discharge points to sewer, treated condensate from the methane stripper (S1) and the discharge point to sewer from Civic Waste Facility (S2).

Monitoring at S1 during the year indicated a reduction of pH and increase in sulphate concentrations which exceeded licence requirement. Further sampling of condensate within the gas extraction system (condensate traps) indicated similar concentrations. Condensate is now being tankered from site following agreement with EPA and Waste Water Treatment Plant Operator.

5.13 PERIMETER GAS MONITORING

The licence requirements of the following landfill gases are greater than or equal to 1.0% v/v Methane and greater than or equal to 1.5% v/v Carbon dioxide. Landfill gas monitoring results have been provided for the period and are shown in Appendix E.

Methane was recorded along the perimeter of the site (LG1 – LG7) throughout the monitoring period except in June, July and November. Methane levels ranged from 0.1%v/v – 0.2%v/v which is below the trigger level.

Carbon Dioxide levels from LG1, LG2, LG3, LG4, LG5 and LG6 were above 1.5% v/v at various stages of the monitoring period. LG5 recorded the highest Carbon Dioxide level of 6.9% v/v. in November The results do not correspond with increase of methane levels, nor is the exceedances in results in the direction of groundwater flow, however landfill gas can migrate in all directions away from the site above the groundwater flow.

High naturally occurring Carbon Dioxide levels can occur due to microbial activity with the roots of many types of vegetation, which can be found at shallow depths of up to 2 metres. These can provide concentration of up to 7% v/v by volume in certain soils (silty clays). Borehole logs for piezometers installed at the site (LG1-LG7) indicate the presence of silty clays. Other sources of Carbon Dioxide at greater depths may arise from the action of acidic water on limestone rocks.

An active landfill gas collection and flaring system has been installed and has been commissioned.

5.14 DUST MONITORING

Dust monitoring was carried out on three occasions during this monitoring period. Table 6 details the results of the dust monitors installed on site. The waste licence requires dust deposition limits to be no more than **350** mg/m^2/day. The results are all below the required limit of the licence requirements except in June in DG4, which exceed the licence requirements. Capping works at the site were completed in 2007. No complaints in relation to dust were recorded in this monitoring period.

Table 6 Results from Dust Monitoring Analysis, Drogheda Landfill Site (mg/m^2/day)

Sampling Period	DG1 (mg/m^2/day)	DG2 (mg/m^2/day)	DG3 (mg/m^2/day)	DG4 (mg/m^2/day)
06/06/2008				
07/07/2008	76.8		98.8	1231.3
30/07/2008				
28/08/2008	107.3	56.8	14.3	
01/12/2008				
30/12/2008	47		5.7	7.4

5.15 METEOROLOGICAL MONITORING

A summary of meteorological monitoring for the reporting period is presented in Table 7.

Table 7 Summary of Meteorological Monitoring for the Reporting Period

Total rainfall in millimetres for Dublin Airport													
Year	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
2008	97.4	14.7	101.8	27.6	32.7	76.4	111.4	189.9	114.1	92.5	44.7	39.4	942.6
mean	69.5	50.4	53.5	51.1	54.8	55.8	50.0	71.1	66.4	70.1	64.3	75.8	732.7

Mean temperature in degrees C. for Dublin Airport													
Year	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
2008	6.4	5.8	6.0	7.6	11.6	12.8	14.8	15.2	12.4	8.9	6.9	4.4	9.4
mean	5.0	5.0	6.3	7.9	10.5	13.4	15.1	14.9	13.1	10.6	7.0	5.9	9.6

6.0 VOLUME OF LEACHATE PRODUCED

The site was permanently capped during 2007 except for an area along boundary of the site (approximately 3,000m^2). No leachate is collected from the facility. A water balance calculation for 2008 is presented in Appendix F. Infiltration in restored areas would be in the range of 2-10% in the worst case scenario for a geosynthetic clay liner cap. This estimates the leachate production for 2008 will be in the range of 2,781 m^3 at 11,076 m^3.

7.0 REPORT ON RESTORATION

Phase 1 of the Restoration Capping Works for Drogheda Landfill Site has been completed satisfactorily in accordance with the contract specification, the licence conditions and EPA correspondence Ref W0033-01/AK17EM. The CQA report has been completed and is available on site for inspection.

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

A topographical survey was undertaken at the site in 2007 following the completion of Phase 1 restoration. This survey was submitted to EPA in December 2007.

9.0 ESTIMATED ANNUAL AND CUMULATIVE QUANTITIES OF LANDFILL GAS (LFG) EMITTED FROM THE SITE

A 750m^3/hr flare has been installed at the facility. Field balancing is undertaken at the facility as required. The average flow rate from the flare is approximately 240m^3/hr at 24% methane.

Condition 7.1 of Waste Licence W0033-01 notes that no specified emission from the facility shall exceed the emission limit values set out in Schedule G. There is however no reference made to emissions from the landfill gas flare in Schedule G. In the absence of any licence limits for emissions to atmosphere from the flare unit in Waste Licence W0033-01, monitored emissions have been compared to guideline values given in the *TA Luft: Technical Guidelines for Air Pollution Control (TA Luft), 2002*. All measured parameters were found to be below the relevant guideline values given in *TA Luft, 2002*.

10.0 ESTIMATED ANNUAL AND CUMULATIVE QUANTITY OF INDIRECT EMISSIONS TO GROUNDWATER

As previously stated in 6.0 a water balance calculation has been carried out and is presented in Appendix F. The estimated annual leachate production for 2008 will be in the range of 2,781 m^3 and 11,076 m^3.

11.0 MONTHLY WATER BALANCE CALCULATION AND INTERPRETATION

A monthly water balance calculation has not been carried out as the site is closed. Refer to Section 6.0.

The meteorological data used in the calculations are from Dublin Airport. Rainfall can vary significantly over short distances and therefore the data may have resulted in the under/over estimation of the leachate production.

12.0 REPORT ON ENVIRONMENTAL MANAGEMENT PROGRAMME

The Environmental Management Programme (EMP) for the facility was updated in 2007 to take into consideration works undertaken at the site. This has been forwarded to the OEE under a separate cover.

13.0 SCHEDULE OF ENVIRONMENTAL OBJECTIVES AND TARGETS FOR THE FORTHCOMING YEAR

Objectives and targets undertaken in 2008 for Drogheda Landfill Site were as follows:

- Completion of a compactor at the site

Objectives and targets to be undertaken in 2009 for Drogheda Landfill Site are as follows:

- Completion of a canopy for WEEE goods

14.0 FULL TITLE AND A WRITTEN SUMMARY OF ANY PROCEDURES DEVELOPED BY THE LICENSEE IN THE YEAR, WHICH RELATES TO THE FACILITY OPERATION

The Environmental Management System (EMS) for the facility was updated in 2007 to take into consideration works undertaken at the site. This has been forwarded to the OEE under a separate cover.

15.0 REPORTED INCIDENTS AND COMPLAINTS SUMMARIES, CORRESPONDENCE TO/FROM EPA

No complaints or incidents were reported to the EPA during the monitoring period. One site inspections were carried out in 2008. A number of observations were noted in the site inspections.

Table 8 Summary Audit Observations noted during Audits/Landfill Site Inspections undertaken during the Reporting Period by EPA

Date and Reference	Summary of Inspection Report/Audit	Correspondence to EPA
13/10/2008 W0033/01/08/ S117EM Date of Inspection	**Date of Inspection 05/09/2008** **Inspection observations** 1. Landfill Gas Collection System. 2. Waste Deposited Outside the Facility Boundary. 3. Road sweeper Waste Acceptance and handling Area	Correspondence DBC 13th December 2007. Correspondence DBC 30th July 2008.

16.0 REVIEW OF NUISANCE CONTROLS

16.1 LITTER

As the facility is currently not taking in waste for disposal there is no windblown litter arising from active working faces and so there is no requirement to remove and dispose of waste on a daily basis.

16.2 BIRDS

As the facility is not operational, and all areas formerly used for placement of municipal waste have been covered by clay and topsoil materials, there is no incidence of scavenging birds.

16.3 PEST CONTROL (FLIES AND VERMIN)

Bate traps are positioned around the Civic Waste Facility.

The bait traps are checked weekly and topped up with poison if necessary.

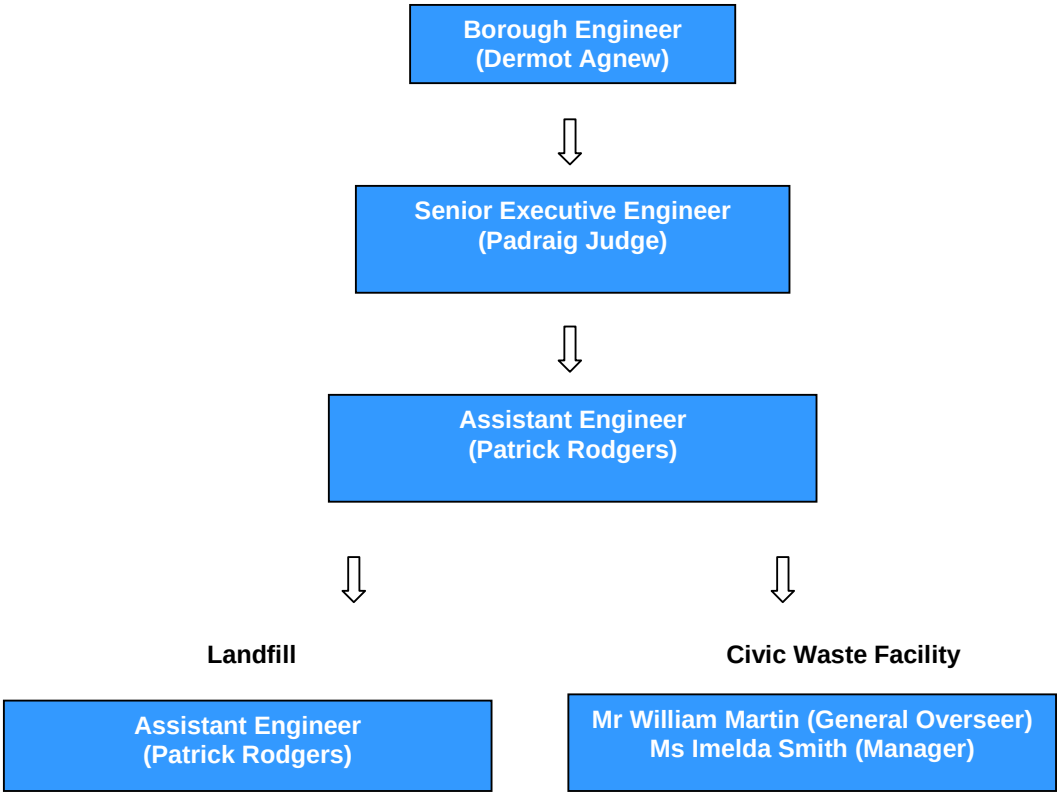
16.4 ODOUR

The occurrence of odour is significantly reduced as the facility is closed. An active landfill gas collection and flaring system has been installed. This was commissioned in May, 2006.

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

The management and staffing structure for the facility is as follows:

MANAGEMENT STRUCTURE AT DROGHEDA LANDFILL SITE



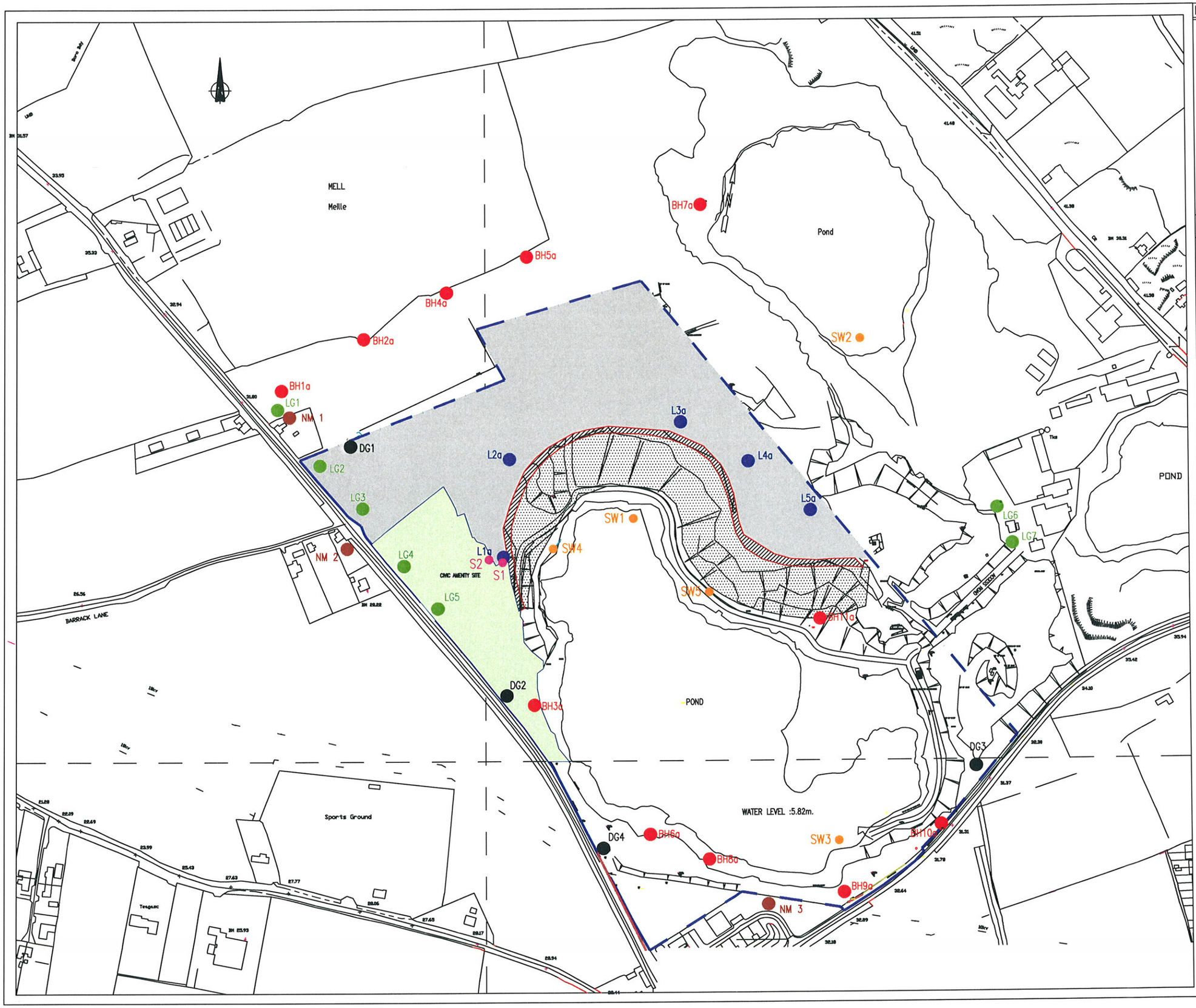
The public information programme is provided in the Environmental Management System for the site.

18.0 PRTR REPORTING

Under EPA licensing and following the coming into force of the PRTR Regulations on 22 March 2007, there is now an obligation on all EPA-licensed facilities, and on operators in certain other industrial sectors, to make returns, in the form and content specified by the EPA, of their annual Releases (emissions) and Off-Site Waste Transfers for each calendar year. PRTR reporting was undertaken for 2008. A copy of the PRTR EPA returns worksheet is provided in Appendix G.

APPENDIX A

DRAWINGS



NOTES

1. Verifying Dimensions.
   The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.

2. Existing Services.
   Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.

3. Issue of Drawings.
   Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipients own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error by the recipient, listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipients drawing production, or setting out on site.

5. DATUM:

- SITE BOUNDARY
- L — LEACHATE BOREHOLE
- LG — LANDFILL GAS MONITOR
- DG — DUST MONITORING GUAGE
- BH — GROUNDWATER BOREHOLES
- NM — NOISE MONITOR
- SW — SURFACE WATER MONITORING POINT
- S1 — SEWER

Rev	Amendments	Drawn Date	Checked Date

RPS

Enterprise Fund Business Centre
Ballyraine
Letterkenny
Co. Donegal

T +353 74 9161927
F +353 74 9161928
W www.rpsgroup.com/ireland
E ireland@rpsgroup.com

Client
DROGHEDA BOROUGH COUNCIL

Project
DROGHEDA LANDFILL SITE

Title
LOCATION OF MONITORING POINTS

Architect

Drawing Status	Sheet Size	Drawing Scale
PRELIM	A3	1:4000

Drawing Number	Rev
IBL0006/01	0

Drawn By	Date	Checked By	Date	Approved By	Date
AMB	AUG '08	AMcG	AUG '08	DD	AUG '08

APPENDIX B

GROUNDWATER RESULTS

Drogheda Landfill Site Groundwater Quality

Monitoring Point:		BH1A																	
Date Collected		31-Jul-07	28-Aug-07	25-Sep-07	24-Oct-07	28-Nov-07	18-Dec-07	22-Jan-08	26-Feb-08	19-Mar-08	29-Apr-08	27-May-08	26-Jun-08	31-Jul-08	27-Aug-08	30-Sep-08	20-Oct-08	26-Nov-08	16-Dec-08
Alkalinity	mg/l CaCO3										360								
Ammonia	mg/l N	0.07	0.07	0.06	<0.03	0.03	<0.03	<0.03	<0.03	0.03	0.05	0.03	<0.03	0.13	0.06	0.03	0.04	0.04	<0.03
Barium	ug/l	58.7	58.3	<50	<50	nm	<50	<50	<50	<50	<50	<50	<50	<50	<50	57.2	66.5	<50	
B.O.D.	mg/l O2																		
Boron	µg/l										<50								
Cadmium	µg/l	<0.10	<0.10	<0.10	0.2	<0.10	0.4	0.4	0.6	0.5	0.3	0.3	1.1	0.5	0.4	0.2	<0.10	0.5	0.4
Calcium	mg/l Ca										135.57								
C.O.D.	mg/l O2																		
Chloride	mg/l Cl	25	24	29	30	30	33	32	30	32	28	28	36	33	35	30	28	32	31
Chromium	µg/l	<1	<1	<1	2.3	<1	2.4	<1	<1	3.5	<1	2.4	11.4	<1	<1	<1	<1	<1	<1
Conductivity	µS/cm @ 25	710	675	690	684	727	1577	816	840	929	725	716	824	765	760	752	709	812	796
Copper	µg/l										4								
Cyanide	mg/l										<0.05								
Depth	m	21.4	24.1	27.1	23.1	24.6	24.3	25.1	24.6	24.3	24.4	24.1	23.4	24	24.4	24.8	nm	24.8	24.3
D.O.	% Saturation	66			53			50			45			34			47		
Faecal Coliforms	No/100 ml										0								
Fluoride	mg/l										<0.150								
Iron	µg/l	396.4	357.7	354.5	308.8	291.2	236	186	285	293.3	212.5	376.6	375.3	262.1	292.6	245.5	329.2	220.4	180.1
Lead	µg/l	3.4	2.8	2.2	2.6	2.8	<1	<1	3	2.5	2.7	4.4	4.6	3.2	5	3.1	5.6	2.8	2
Magnesium	mg/l Mg										9.75								
Manganese	µg/l	254.9	64.2	26.5	31.7	39.8	54.4	27.1	91.3	76	58.2	70.9	255.4	119.1	93.4	40.6	70.8	66.4	30.7
Mercury	µg/l										<0.10								
Nickel	µg/l	26.2	4.4	5.8	5.8	7.5	13.1	10.6	13.3	13.1	9	8.4	38.3	11.3	9.4	5.5	6.5	10.8	10.6
Nitrite	mg/l N	0.018	0.011	0.014	0.011	0.013	0.004	0.007	0.006	0.007	0.019	0.009	0.004	0.024	0.149	0.01	0.01	0.003	0.003
o-Phosphate	mg/l P										0.03								
pH		7.1	7.0	7.1	7.2	7.2	7	6.9	6.9	7	7	7.2	6.9	7	7.2	7.1	7.2	6.9	7.1
Phenol	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.02	<0.01	<0.01	<0.01	nm	0.03	<0.01	0.03	<0.01	
Potassium	mg/l	3.95	2.69	3.36	4.19	4.83	7.52	6.33	6.6	6.72	4.92	4.04	6.59	5.34	5.72	3.83	3.41	6.76	6.24
Residue on Evaporation	mg/l										497								
Sodium	mg/l	14.46	15.31	14.46	16.49	19.08	23.76	19.57	18.82	20.98	16.44	14.21	18.55	16.52	17.76	16.69	16.28	17.81	18.34
Sulphate	mg/l SO4										20.9								
Temp	°C	19.6	15.0	10.0	12.6	12	11	9	11	11	12	nm	15.6	15.5	14	13	8.3		10
Time sampled		11.15	11.20	11.35	11.25	10	11.55	nt	11.35	11.3	11.3	11.15	11.15	11.1	11.25	11.35	11	11.3	10.55
Total Coliforms	No/ 100 ml										36								
T.O.C.	mg/l	2.3			<1.5			1.7			2.9			1.7			<1.5		
T.O.N	mg/l N	2.95	1.96	2.34	2.95	3.41	5.29	4.7	4.88	4.46	3.38	3.31	5.56	4.3	4.01	2.7	2.27	5.1	4.31
Total S Solids	mg/l																		
Zinc	µg/l	6.6	16.2	10.7	38.3	31.7	32.6	30.2	29	29.8	25.3	6.8	59.4	23.4	29.3	27.1	50.9	23.6	29.7

		Drogheda Landfill Site Groundwater Quality																	
Monitoring Point:		**BH2**																	
Date Collected		**31-Jul-07**	**28-Aug-07**	**26-Sep-07**	**24-Oct-07**	**28-Nov-07**	**18-Dec-07**	**22-Jan-08**	**26-Feb-08**	**19-Mar-08**	**29-Apr-08**	**27-May-08**	**26-Jun-08**	**31-Jul-08**	**27-Aug-08**	**30-Sep-08**	**30-Oct-08**	**26-Nov-08**	**16-Dec-08**
Alkalinity	**mg/l CaCO3**										368								
Ammonia	**mg/l N**	0.09	0.06	<0.03	<0.03	<0.03	0.06	0.03	<0.03	<0.03	<0.03	0.03	<0.03	0.04	0.04	<0.03	<0.03	0.04	<0.03
Barium	**ug/l**	61.4			64.5			65			58.8			63.7			65.6		
B.O.D.	**mg/l O2**																		
Boron	**µg/l**										<50								
Cadmium	**µg/l**	<0.10			<0.10			<0.10			<0.10			<0.10			<0.10		
Calcium	**mg/l Ca**										140.69								
C.O.D.	**mg/l O2**																		
Chloride	**mg/l Cl**	12			13			17			18			20			18		
Chromium	**µg/l**	<1			2.5			3			<1			<1			<1		
Conductivity	**µS/cm @ 25**	644	668	676	700	826	737	654	651	652	691	726	760	752	727	740	737	754	742
Copper	**µg/l**										3.2								
Cyanide	**mg/l**										<0.05								
Depth	**m**	22.5	26.2	26.5	24.1	25.2	27.6	24.2	24.3	25.4	24.2	24.8	14.9	29.9	24.7	24.2	nm	22.8	22.8
D.O.	**% Saturation**	74			46			70			58			48			39		
Faecal Coliforms	**No/100 ml**										1								
Fluoride	**mg/l**										<0.150								
Iron	**µg/l**	227.1			242.6			165			192			160.9			157.3		
Lead	**µg/l**	3.0			2.6			<1			3.6			2.3			<1		
Magnesium	**mg/l Mg**										10.77								
Manganese	**µg/l**	28.1			17.6			7.5			35.5			37.5			7.5		
Mercury	**µg/l**										<0.10								
Nickel	**µg/l**	2.5			<1			<1			<1			<1			<1		
Nitrite	**mg/l N**	0.015			0.007			0.008			0.007			0.008			0.003		
o-Phosphate	**mg/l P**										0.04								
pH		7.2	7.0	7.0	7.1	7.1	7.2	7	7.1	7.1	7	7	6.9	7	7	7	7	7	7.1
Phenol	**mg/l**	<0.01			<0.01			0.03			<0.01			0.01			0.03		
Potassium	**mg/l**	2.47			2.72			2.82			2.88			2.72			2.8		
Residue on Evaporation	**mg/l**										992								
Sodium	**mg/l**	8.66			10.67			10.35			11.08			11.49			10.89		
Sulphate	**mg/l SO4**										21.5								
Temp	**°C**	18.7	14.0	9.0	12.3	12	11	9	11	12	12	nm	14.8	15.6	15	13	8.6	11	11
Time sampled		11.30	11.45	11.50	11.40	10.2	12.15	nt	11.5	11.5	11.5	11.35	11.4	11.35	11.45	11.5	11.2	11.45	11.2
Total Coliforms	**No/ 100 ml**	7.2									24								
T.O.C.	**mg/l**	2.00			3.5			4.4			2.9			2.7			2.5		
T.O.N	**mg/l N**				2.39			1.42			2.22			3.02			2.52		
Total S Solids	**mg/l**																		
Zinc	**µg/l**	4.2	<1		12.2			6.6			9.7			8.8			12.5		

Drogheda Landfill Site Groundwater Quality

Monitoring Point:		BH3																	
Date Collected		31-Jul-07	28-Aug-07	26-Sep-07	24-Oct-07	28-Nov-07	18-Dec-07	22-Jan-08	26-Feb-08	19-Mar-08	29-Apr-08	27-May-08	26-Jun-08	31-Jul-08	27-Aug-08	30-Sep-08	30-Oct-08	26-Nov-08	16-Dec-08
Alkalinity	mg/l CaCO3										304								
Ammonia	mg/l N	0.04	0.07	<0.03	<0.03	<0.03	<0.03	0.06	<0.03	<0.03	0.03	0.03	<0.03	0.05	0.06	<0.03	0.05	0.04	<0.03
Barium	ug/l	<50			<50			53			<50			<50			51.4		
B.O.D.	mg/l O2																		
Boron	µg/l										68.4								
Cadmium	µg/l	<0.10			<0.10			<0.10			<0.10			<0.10			<0.10		
Calcium	mg/l Ca										140.98								
C.O.D.	mg/l O2																		
Chloride	mg/l Cl	30			34			36			40			39			40		
Chromium	µg/l	2.7			3.1			<1			<1			<1			<1		
Conductivity	µS/cm @ 25	668	765	781	746	797	791	799	787	824	830	864	813	805	805	824	812	833	820
Copper	µg/l										3.6								
Cyanide	mg/l										<0.05								
Depth	m	27.0	29.0	28.7	26.8	27.9	28.9	25.1	27.9	26.3	29	28.3	28.7	28.7	28.4	26.8	28.3	28.8	28.9
D.O.	% Saturation	76			62			58			61			57			61		
Faecal Coliforms	No/100 ml										0								
Fluoride	mg/l										<0.150								
Iron	µg/l	346.0			204.0			309.5			284.7			174.2			313.9		
Lead	µg/l	7.8			2.2			3.2			4.4			2.5			3.6		
Magnesium	mg/l Mg										8.73								
Manganese	µg/l	69.9			15.0			17.4			33.7			32.7			28.1		
Mercury	µg/l										<0.10								
Nickel	µg/l	2.9			<1			<1			<1			<1			<1		
Nitrite	mg/l N	0.007			0.005			0.023			0.012			0.009			0.004		
o-Phosphate	mg/l P										0.02								
pH		7.5	7.2	7.2	7.3	7.2	7.3	7.1	7.2	7.1	7.2	7.2	7.1	7.2	7.2	7.1	7.1	7.1	7.2
Phenol	mg/l	<0.01			<0.01			0.02			<0.01			<0.01			0.03		
Potassium	mg/l	17.02			23.26			28.12			28.4			23.97			25.41		
Residue on Evaporation	mg/l										557								
Sodium	mg/l	15.31			20.09			22.14			21.6			19.92			19.54		
Sulphate	mg/l SO4										81.7								
Temp	°C	14.0	13.0	10.0	11.4	12	11	9.1	11	12	11	13	13.5	12.1	14	13	9.8	11	10
Time sampled		10.30	13.35	13.20	14.00	12.15	13.4	nt	13.1	13.3	14.2	13.2	13.3	14	13.15	13.15	13.3	13.05	12.2
Total Coliforms	No/ 100 ml										133								
T.O.C.	mg/l	3.3			1.8			3.5			1.8			2			1.7		
T.O.N	mg/l N	4.57			5.06			4.85			5.67			4.07			4.29		
Total S Solids	mg/l																		
Zinc	µg/l				12.5			15.6			14.8			10.9			13.3		

	Drogheda Landfill Site Groundwater Quality																	
Monitoring Point:		**BH4**																
Date Collected		**31-Jul-07**	**28-Aug-07**	**25-Sep-07**	**24-Oct-07**	**28-Nov-07**	**18-Dec-07**	**22-Jan-08**	**26-Feb-08**	**19-Mar-08**	**29-Apr-08**	**27-May-08**	**26-Jun-08**	**31-Jul-08**	**27-Aug-08**	**30-Sep-08**	**30-Oct-08**	**26-Nov-08**	**16-Dec-08**
Alkalinity	**mg/l CaCO3**										336								
Ammonia	**mg/l N**	0.22	0.08	0.03	0.04	0.19	0.26	0.03	0.07	0.04	0.04	0.11	<0.03	0.11	0.11	0.03	0.04	0.17	0.07
Barium	**ug/l**	<50	57.1	<50	<50	nm	<50	<50	<50	<50	<50	125.3	<50	<50	<50	<50	<50	<50	
B.O.D.	**mg/l O2**																		
Boron	**µg/l**										<50								
Cadmium	**µg/l**	0.3	1.0	0.4	0.5	0.3	1.3	<0.10	<0.10	0.3	1.3	3.8	1.1	0.5	0.9	<0.10	<0.10	0.5	0.6
Calcium	**mg/l Ca**										162.99								
C.O.D.	**mg/l O2**																		
Chloride	**mg/l Cl**	55	49	50	54	59	66	48	46	47	47	47	36	56	59	53	49	58	52
Chromium	**µg/l**	<1	3.5	<1	<1	<1	3	<1	3.2	5.6	7.2	3.5	11.4	<50	5.8	<1	2.4	3.9	<1
Conductivity	**µS/cm @ 25**	876	878	878	810	922	892	892	882	879	864	877	824	876	863	896	890	902	905
Copper	**µg/l**										5.8								
Cyanide	**mg/l**										<0.05								
Depth	**m**	24.0	26.2	25.9	25.2	24.8	26.2	24.5	25.2	24.8	23.9	24	23.4	23.9	25.9	26.1	nm	20.4	20.9
D.O.	**% Saturation**	78			74			38			74			101			63		
Faecal Coliforms	**No/100 ml**										0								
Fluoride	**mg/l**										<0.150								
Iron	**µg/l**	594.6	2167.7	628.4	302.1	299.8	1557.3	229.5	1086.5	1657.1	727.9	2828.3	375.3	345	491.3	359.7	530	1373.8	1004.6
Lead	**µg/l**	<1	<1	<1	<1	<1	<1	<1	<1	3.2	<1	<1	4.6	<1	<1	<1	<1	<1	<1
Magnesium	**mg/l Mg**										13.31								
Manganese	**µg/l**	277.6	908.2	179.9	155.6	234.9	796.9	57.1	475.6	269.5	665.5	1432.1	255.4	179.2	290.1	152.8	220.8	566.8	467.1
Mercury	**µg/l**										<0.10								
Nickel	**µg/l**	8.1	22.9	7.5	5.5	6.4	27	<1	9.6	11.9	21.3	80.1	38.3	9.1	15.8	3.3	4.1	12.1	12
Nitrite	**mg/l N**	0.094	0.074	<0.003	0.030	0.045	0.096	0.016	0.02	0.011	0.013	0.047	0.004	0.039	0.221	0.036	0.008	0.016	0.009
o-Phosphate	**mg/l P**										0.02								
pH		7.2	7.1	7.3	7.2	6.9	7.4	7.1	7.2	7.2	7.2	7.3	6.9	7.3	7.5	7.1	7.2	7.2	7.1
Phenol	**mg/l**	<0.01	1.190	<0.01	<0.01	<0.01	<0.01	0.03	0.02	<0.01	<0.01	<0.01	<0.01	nm	0.03	<0.01	0.03	<0.01	
Potassium	**mg/l**	1.04	1.02	1.13	1.14	1.33	1.32	1.27	1.17	1.5	1.21	1.01	6.59	1.08	1.21	1.14	1.13	1.35	1.25
Residue on Evaporation	**mg/l**										841								
Sodium	**mg/l**	16.33	17.13	15.32	17.30	20.57	21.72	20.84	19.73	22.65	19.28	16.8	18.55	18.07	17.38	18.29	18.59	20.19	22.33
Sulphate	**mg/l SO4**										47.4								
Temp	**°C**	19.1	14.0	10.0	12.3	13	10	9.4	10	12	12	nm	15.6	15.4	14	12	8.9	11	10
Time sampled		11.45	12.05	12.10	12.00	11	12.45	nt	12.1	12.1	12.15	11.55	11.15	12	12.05	12.1	11.45	12.05	11.4
Total Coliforms	**No/ 100 ml**										0								
T.O.C.	**mg/l**	3.0			1.8			1.5			2.1			1.6			<1.5		
T.O.N	**mg/l N**	5.73	5.63	6.01	5.85	6.12	5.81	5.63	5.57	5.18	5.62	5.66	5.56	5.76	4.94	5.47	5.47	5.39	4.99
Total S Solids	**mg/l**																		
Zinc	**µg/l**	15.1	25.7	4.1	13.1	9.4	34.8	2.5	11.3	14.8	31.5	100.5	59.4	13.7	24.5	5.1	6.5	15.8	15.6

Drogheda Landfill Site Groundwater Quality

Monitoring Point:		BH5																	
Date Collected		31-Jul-07	28-Aug-07	26-Sep-07	24-Oct-07	28-Nov-07	18-Dec-07	22-Jan-08	26-Feb-08	19-Mar-08	29-Apr-08	27-May-08	26-Jun-08	31-Jul-08	27-Aug-08	30-Sep-08	30-Oct-08	26-Nov-08	16-Dec-08
Alkalinity	mg/l CaCO3										288								
Ammonia	mg/l N	3.71	3.89	0.20	3.32	2.96	2.82	7.35	10.94	5.36	3.63	2.89	2.49	2.59	2.09	5.88	8.18	9.58	<0.03
Barium	ug/l	<50			<50			76.2			<50			<50			63		
B.O.D.	mg/l O2										125.3								
Boron	µg/l																		
Cadmium	µg/l	0.4			<0.10			0.5			<0.10			<0.10			0.6		
Calcium	mg/l Ca										100.45								
C.O.D.	mg/l O2																		
Chloride	mg/l Cl	54			55			68			52			47			72		
Chromium	µg/l	5.9			6.6			5.6			6			<1			<1		
Conductivity	µS/cm @ 25	744	762	780	693	696	696	952	1068	884	743	715	687	664	670	884	998	1038	725
Copper	µg/l										2.5								
Cyanide	mg/l										<0.05								
Depth	m	26.4	28.0	28.7	27.2	28.1	27.2	27.9	26.1	26.2	25	26.3	26.5	26.6	27	25.8	nm	25.7	25.8
D.O.	% Saturation	39			48			34			44			38			31		
Faecal Coliforms	No/100 ml										0								
Fluoride	mg/l										<0.150								
Iron	µg/l	319.7			166.5			315.6			171.2			106.5			314		
Lead	µg/l	3.0			<1			6.8			<1			<1			5.2		
Magnesium	mg/l Mg										13.56								
Manganese	µg/l	263.8			73.9			463.5			173.8			54.4			524.9		
Mercury	µg/l										<0.10								
Nickel	µg/l	11.4			8.4			30.3			9.1			5.5			31		
Nitrite	mg/l N	0.026			0.013			0.309			0.02			0.013			0.029		
o-Phosphate	mg/l P										0.04								
pH		7.2	7.0	7.1	7.2	7.1	7.4	6.9	7.1	7	7.2	7.1	7.1	7.1	7.1	7.1	7.1	7	8
Phenol	mg/l	<0.01			<0.01			0.02			<0.01			<0.01			0.03		
Potassium	mg/l	6.28			6.39			12.51			6.96			4.46			11.73		
Residue on Evaporation	mg/l										431								
Sodium	mg/l	26.98			28.60			45.36			28.07			22.72			44.36		
Sulphate	mg/l SO4										19								
Temp	°C	18.8	14.0	9.0	12.8	12	11	9.2	11	11	13	nm	15.5	15.5	15	13	8.9	11	10
Time sampled		12.30	12.30	12.20	12.20	11.2	13.1	nt	12.3	12.35	12.45	12.15	12.35	12.25	12.2	14.1	12.1	12.3	12
Total Coliforms	No/ 100 ml										6								
T.O.C.	mg/l	3.0			1.6			3.4			<1.5			<1.5			3		
T.O.N	mg/l N	7.50			6.99			10.75			10.31			6.57			9.77		
Total S Solids	mg/l																		
Zinc	µg/l	2.4	3.3	14.7	8.0			33.8			4.1			5.9			38		

		Drogheda Landfill Site Groundwater Quality																	
Monitoring Point:		**BH6**																	
Date Collected		**31-Jul-07**	**28-Aug-07**	**25-Sep-07**	**24-Oct-07**	**28-Nov-07**	**18-Dec-07**	**22-Jan-08**	**26-Feb-08**	**19-Mar-08**	**29-Apr-08**	**27-May-08**	**26-Jun-08**	**31-Jul-08**	**27-Aug-08**	**30-Sep-08**	**30-Oct-08**	**26-Nov-08**	**16-Dec-08**
Alkalinity	**mg/l CaCO3**										162								
Ammonia	**mg/l N**	<0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.08	0.03	<0.03	<0.03	0.04	<0.03
Barium	**ug/l**	<50	<50	<50	<50	nm	<50	51.4	51.4	<50	<50	<50	<50	<50	<50	<50	<50	<50	
B.O.D.	**mg/l O2**																		
Boron	**µg/l**										63.4								
Cadmium	**µg/l**	<0.10	<0.10	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Calcium	**mg/l Ca**										77.49								
C.O.D.	**mg/l O2**																		
Chloride	**mg/l Cl**	25	26	30	38	41	48	49	49	42	40	45	49	54	54	61	53	47	45
Chromium	**µg/l**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	6	<1	3.4	<1	<1	<1	<1
Conductivity	**µS/cm @ 25**	463	465	480	439	486	514	531	531	506	480	490	510	516	522	556	537	514	506
Copper	**µg/l**										2.6								
Cyanide	**mg/l**										<0.05								
Depth	**m**	28.4	29.0	29.4	28.7	29.3	30.1	29.6	29.6	29	29.9	28.5	28.1	28.5	28.1	28.9	29	29	28.9
D.O.	**% Saturation**	82			50			51	51		80			52			53		
Faecal Coliforms	**No/100 ml**										0								
Fluoride	**mg/l**										0.16								
Iron	**µg/l**	166.9	192.7	169.7	137.7	175.1	212.1	240.2	240.2	102.8	113.4	103.4	227.4	125.1	115	139.9	158.4	137.4	87
Lead	**µg/l**	18.0	12.7	4.9	6.0	9	9.5	9.4	9.4	5.5	9.6	4.2	17.4	8.5	11.6	6.7	6.4	7.5	<1
Magnesium	**mg/l Mg**										2.73								
Manganese	**µg/l**	48.4	56.9	8.8	16.1	35.9	35.5	36.4	36.4	9	15.6	6.1	43.4	18.6	37.9	174.2	19	16.2	9.4
Mercury	**µg/l**										<0.10								
Nickel	**µg/l**	<1	<1	<1	<1	2.1	2.6	2.3	2.3	<1	<1	<1	2.3	<1	<1	<1	<1	<1	<1
Nitrite	**mg/l N**	0.003	0.005	0.003	0.005	<0.003	0.006	0.006	0.006	<0.003	0.006	<0.003	0.006	0.005	0.777	0.055	<0.003	<0.003	<0.003
o-Phosphate	**mg/l P**										0.03								
pH		7.5	7.5	7.4	7.6	7.5	7.6	7.4	7.4	7.5	7.6	7.6	7.5	7.5	7.6	7.5	7.5	7.5	7.5
Phenol	**mg/l**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.03	0.02	<0.01	<0.01	<0.01	nm	0.02	<0.01	0.05	<0.01	
Potassium	**mg/l**	<1	<1	<1	<1	<1	<1	1.89	1.89	<1	<1	<1	<1	<1	0.96	<1	<1	<1	<1
Residue on Evaporation	**mg/l**										289								
Sodium	**mg/l**	15.81	16.79	15.10	19.03	23.18	25.78	25.1	25.1	27.54	23.82	20.1	23.99	23.92	25.75	26.12	26.21	26.89	28.36
Sulphate	**mg/l SO4**										21.8								
Temp	**°C**	18.4	14.0	10.0	10.4	13	11	6.8	6.8	12	11	12	15.9	15.8	14	11	8.9	11	10
Time sampled		11.30	11.10	11.15	11.10	9.15	11.3	nt	nt	11.15	11.15	11	11	11.15	11	11.15	10.5	11.05	10.15
Total Coliforms	**No/ 100 ml**										22								
T.O.C.	**mg/l**	<1.5			<1.5			<1.5	<1.5		<1.5			<1.5			<1.5		
T.O.N	**mg/l N**	1.08	1.30	1.12	0.79	0.65	0.52	0.73	0.73	1.19	1.09	0.9	0.68	0.7	0.5	0.49	0.83	0.92	0.95
Total S Solids	**mg/l**																		
Zinc	**µg/l**				6.0	8.6	7.3	15.5	15.5	8.9	12.4	<1	18.1	13.9	18.7	16.1	12.3	8.5	6.5

		Drogheda Landfill Site Groundwater Quality																	
Monitoring Point:		**BH7**																	
Date Collected		**31-Jul-07**	**28-Aug-07**	**26-Sep-07**	**24-Oct-07**	**28-Nov-07**	**18-Dec-07**	**22-Jan-08**	**26-Feb-08**	**19-Mar-08**	**29-Apr-08**	**27-May-08**	**26-Jun-08**	**31-Jul-08**	**27-Aug-08**	**30-Sep-08**	**30-Oct-08**	**26-Nov-08**	**16-Dec-08**
Alkalinity	**mg/l CaCO3**										89								
Ammonia	**mg/l N**	<0.03	0.09	0.04	<0.03	0.05	<0.03	0.04	0.04	0.03	0.03	0.03	<0.03	0.04	0.04	<0.03	0.04	0.04	0.03
Barium	**ug/l**	<50			<50			<50			<50			<50			<50		
B.O.D.	**mg/l O2**																		
Boron	**µg/l**										<50								
Cadmium	**µg/l**	<0.10			0.2			<0.10			<0.10			0.2			<0.10		
Calcium	**mg/l Ca**										48.62								
C.O.D.	**mg/l O2**																		
Chloride	**mg/l Cl**	25			77			38			59			91			22		
Chromium	**µg/l**	5.0			18.1			10.1			14.7			25.1			5.1		
Conductivity	**µS/cm @ 25**	577	535	539	632	754	632	543	585	691	633	734	741	761	661	617	513	475	452
Copper	**µg/l**										5.1								
Cyanide	**mg/l**										<0.05								
Depth	**m**	13.5	14.2	12.9	12.4	12.2	12.2	12.2	12.2	12.2	12.8	12.2	12	12	12.2	12.2	nm	9	9.1
D.O.	**% Saturation**	109			65			87			76			58			93		
Faecal Coliforms	**No/100 ml**										0								
Fluoride	**mg/l**										0.41								
Iron	**µg/l**	189.0			87.0			95.7			244.7			<50			149.9		
Lead	**µg/l**	<1			<1			<1			4.1			<1			<1		
Magnesium	**mg/l Mg**										5.14								
Manganese	**µg/l**	65.6			51.2			8.7			99.6			13.2			45.3		
Mercury	**µg/l**										<0.10								
Nickel	**µg/l**	2.5			2.5			<1			2.9			<1			<1		
Nitrite	**mg/l N**	<0.003			0.009			0.005			0.007			0.004			0.004		
o-Phosphate	**mg/l P**										0.03								
pH		7.9	7.8	7.8	8.2	7.1	8.7	8.2	8.1	8.2	8.3	9.7	9.9	10.4	8.6	8	7.9	7.9	7.3
Phenol	**mg/l**	<0.01			<0.01			0.02			<0.01			<0.01			0.03		
Potassium	**mg/l**	11.01			107.29			38.91			79.42			145.08			12.12		
Residue on Evaporation	**mg/l**										413								
Sodium	**mg/l**	11.29			21.01			13.59			15.05			22.58			10.3		
Sulphate	**mg/l SO4**										96.7								
Temp	**°C**	16.9	14.0	10.0	12.6	13	11	9.4	11	12	11	nm	13.6	14.9	15	14	9.1	11	10
Time sampled		12.45	13.10	12.50	12.45	12	13.4	nt	13.1	13.1	13.15	12.5	13	13.2	12.5	12.45	12.4	13.05	12.2
Total Coliforms	**No/ 100 ml**										13								
T.O.C.	**mg/l**	3.9			2.2			2.2			2.2			1.5			2.2		
T.O.N	**mg/l N**	0.26			0.82			0.33			0.71			1.29			0.24		
Total S Solids	**mg/l**																		
Zinc	**µg/l**				5.7			5.6			4.7			3.7			9.2		

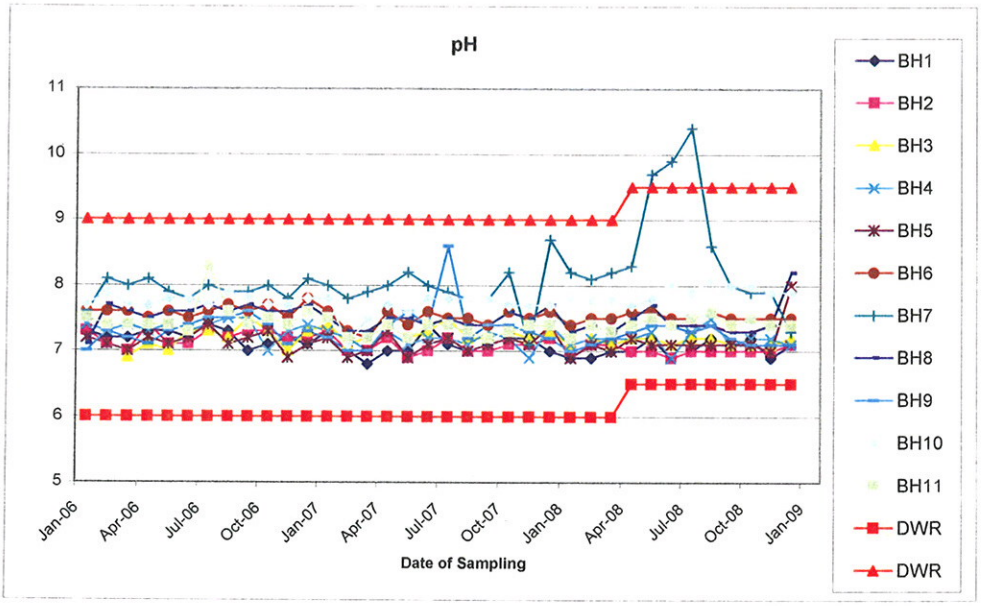
Drogheda Landfill Site Groundwater Quality

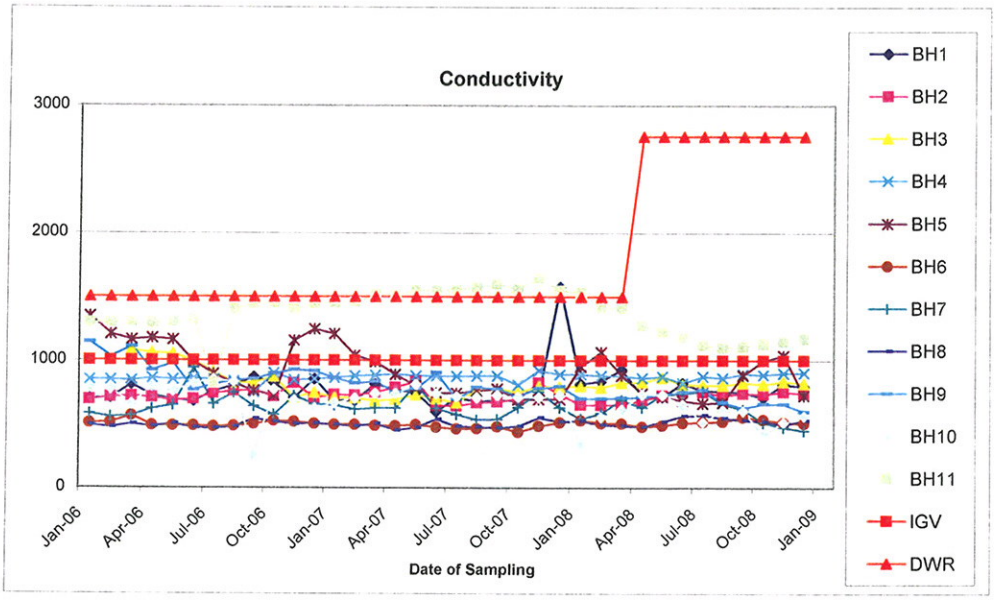
Monitoring Point:		BH8																	
Date Collected		31-Jul-07	28-Aug-07	26-Sep-07	24-Oct-07	28-Nov-07	18-Dec-07	22-Jan-08	26-Feb-08	19-Mar-08	29-Apr-08	27-May-08	26-Jun-08	31-Jul-08	27-Aug-08	30-Sep-08	30-Oct-08	26-Nov-08	16-Dec-08
Alkalinity	mg/l CaCO3										196								
Ammonia	mg/l N	0.03	0.05	<0.03	<0.03	<0.03	<0.03	0.03	<0.03	<0.03	<0.03	0.03	<0.03	0.07	0.04	<0.03	<0.03	0.03	<0.03
Barium	ug/l	<50			<50			<50			<50			<50			<50		
B.O.D.	mg/l O2																		
Boron	µg/l										<50								
Cadmium	µg/l	<0.10			<0.10			<0.10			<0.10			<0.10			<0.10		
Calcium	mg/l Ca										83.58								
C.O.D.	mg/l O2																		
Chloride	mg/l Cl	13			41			13			31			64			21		
Chromium	µg/l	<1			<1			<1			<1			<1			<1		
Conductivity	µS/cm @ 25	484	478	472	483	550	520	526	495	489	481	521	566	570	549	534	522	498	528
Copper	µg/l										<1								
Cyanide	mg/l										<0.05								
Depth	m	28.8	29.1	29.7	29.2	30.1	30.3	29.7	29.9	28.9	29.7	29.5	29.7	29.6	29.3	29	29.4	29.1	29.2
D.O.	% Saturation	98			70			82			91			81			80		
Faecal Coliforms	No/100 ml										2								
Fluoride	mg/l										<0.150								
Iron	µg/l	206.4			145.6			164.6			99.2			96.7			255.3		
Lead	µg/l	3.6			<1			2.3			<1			<1			7.8		
Magnesium	mg/l Mg										2.91								
Manganese	µg/l	28.0			7.9			11.4			10.4			6.1			33.3		
Mercury	µg/l										<0.10								
Nickel	µg/l	<1			<1			<1			<1			<1			<1		
Nitrite	mg/l N	<0.003			0.003			0.008			0.004			0.003			<0.003		
o-Phosphate	mg/l P										<0.02								
pH		7.5	7.4	7.4	7.6	7.5	7.7	7.3	7.4	7.3	7.5	7.7	7.4	7.4	7.4	7.3	7.3	7.4	8.2
Phenol	mg/l	<0.01			<0.01			0.02			<0.01			<0.01			0.03		
Potassium	mg/l	<1			<1			1.36			<1			<1			<1		
Residue on Evaporation	mg/l										282								
Sodium	mg/l	11.72			19.24			15.32			13.52			30.19			13.95		
Sulphate	mg/l SO4										15.6								
Temp	°C	17.6	14.0	11.0	10.5	13	11	6.5	12	11	12	12	15.5	15.7	14	11	9	11	10
Time sampled		11.50	11.25	11.35	11.35	9.35	11.5	nt	11.2	11.4	11.4	11.2	11.3	11.45	11.2	11.35	11.1	11.2	10.35
Total Coliforms	No/ 100 ml										26								
T.O.C.	mg/l	2.1			1.6			1.5			<1.5			<1.5			<1.5		
T.O.N	mg/l N	0.57			0.33			0.97			0.65			0.55			1.13		
Total S Solids	mg/l																		
Zinc	µg/l		27.2	7.5	2.8			4.3			<1			3.3			14.4		

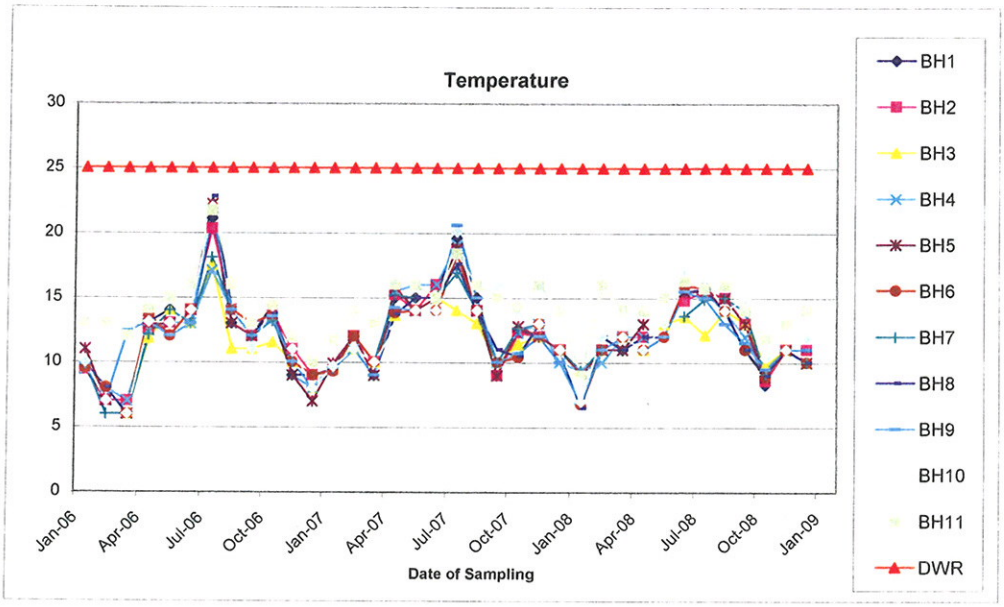
	Drogheda Landfill Site Groundwater Quality																	
Monitoring Point:		**BH9**																
Date Collected		**31-Jul-07**	**28-Aug-07**	**25-Sep-07**	**24-Oct-07**	**28-Nov-07**	**22-Jan-08**	**26-Feb-08**	**19-Mar-08**	**29-Apr-08**	**27-May-08**	**26-Jun-08**	**31-Jul-08**	**27-Aug-08**	**30-Sep-08**	**30-Oct-08**	**26-Nov-08**	**16-Dec-08**
Alkalinity	**mg/l CaCO3**									238								
Ammonia	**mg/l N**	0.13	0.06	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.03	<0.03	<0.03	0.09	0.08	<0.03	0.03	0.04	0.03
Barium	**ug/l**	55.9	<50	<50	<50	nm	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	
B.O.D.	**mg/l O2**																	
Boron	**µg/l**									76.5								
Cadmium	**µg/l**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.4	<0.10	<0.10	<0.10	<0.10
Calcium	**mg/l Ca**									120.78								
C.O.D.	**mg/l O2**																	
Chloride	**mg/l Cl**	136	81	95	108	87	57	58	68	71	79	79	82	65	44	50	49	33
Chromium	**µg/l**	<1	<1	<1	<1	<1	<1	2.4	4.1	<1	<1	7.9	<1	5.8	<1	<1	<1	<1
Conductivity	**µS/cm @ 25**	697	790	777	723	782	701	700	709	713	733	755	772	673	629	661	659	599
Copper	**µg/l**									<1								
Cyanide	**mg/l**									<0.05								
Depth	**m**	28.5	28.5	27.9	28.2	28.9	27.7	28.1	27.2	28.8	28.1	28	28	27.8	27.8	27.3	28.2	28.2
D.O.	**% Saturation**	107			48		96			77			69			76		
Faecal Coliforms	**No/100 ml**									0								
Fluoride	**mg/l**									<0.150								
Iron	**µg/l**	91.1	212.3	237.9	175.7	146.2	227.3	146.3	164.7	121.2	174.7	176	129	548.7	183	468.1	136.2	165.8
Lead	**µg/l**	<1	4.0	2.5	<1	<1	5.2	<1	<1	4.1	2.7	2.3	<1	5.3	<1	6.4	<1	<1
Magnesium	**mg/l Mg**									5.87								
Manganese	**µg/l**	96.9	29.6	9.8	5.9	11.7	17.5	11.5	11	14.9	12.2	10.7	7.4	170.1	18.9	164.2	14.3	27.2
Mercury	**µg/l**									<0.10								
Nickel	**µg/l**	8.7	<1	3.7	2.2	2.9	<1	<1	<1	<1	<1	2.3	2.4	12.7	<1	6	<1	<1
Nitrite	**mg/l N**	0.010	0.004	0.004	0.003	<0.003	0.007	<0.003	0.003	0.004	<0.003	<0.003	<0.003	0.019	0.005	0.005	<0.003	0.003
o-Phosphate	**mg/l P**									<0.02								
pH		8.6	7.2	7.4	7.4	7.3	7	7.1	7.2	7.3	7.4	7.4	7.3	7.4	7.2	7.1	7.1	7.1
Phenol	**mg/l**	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.02	0.01	<0.01	<0.01	<0.01	nm	0.03	<0.01	0.02	<0.01	
Potassium	**mg/l**	13.92	1.62	2.82	2.72	2.05	<1	<1	1.34	1.17	<1	1.25	2.13	<1	<1	<1	<1	<1
Residue on Evaporation	**mg/l**									488								
Sodium	**mg/l**	68.71	26.86	33.83	42.44	42.56	8.29	11.09	24.68	22.52	21.71	26.9	38.05	8.91	8.14	9.55	9.48	7.29
Sulphate	**mg/l SO4**									15.7								
Temp	**°C**	20.6	15.0	10.0	10.7	12	6.9	11	12	11	12	15.5	15	13	11.5	9.5	11	11
Time sampled		12.15	11.45	11.55	11.5	10	nt	11.5	11.55	12	11.45	11.5	12.05	11.5	11.55	11.35	11.4	11
Total Coliforms	**No/ 100 ml**									5								
T.O.C.	**mg/l**	11.2			2.4		<1.5			2.2			1.9			<1.5		
T.O.N	**mg/l N**	<0.05	0.13	<0.05	<0.05	<0.05	0.15	0.08	0.11	0.12	0.14	0.11	0.12	0.13	0.12	0.09	0.05	0.1
Total S Solids	**mg/l**																	
Zinc	**µg/l**	3.5	2.2		3.8	2.7	3.1	2.6	6.1	3.4	<1	6.3	3.1	18.3	3.6	15.7	2.3	4.2

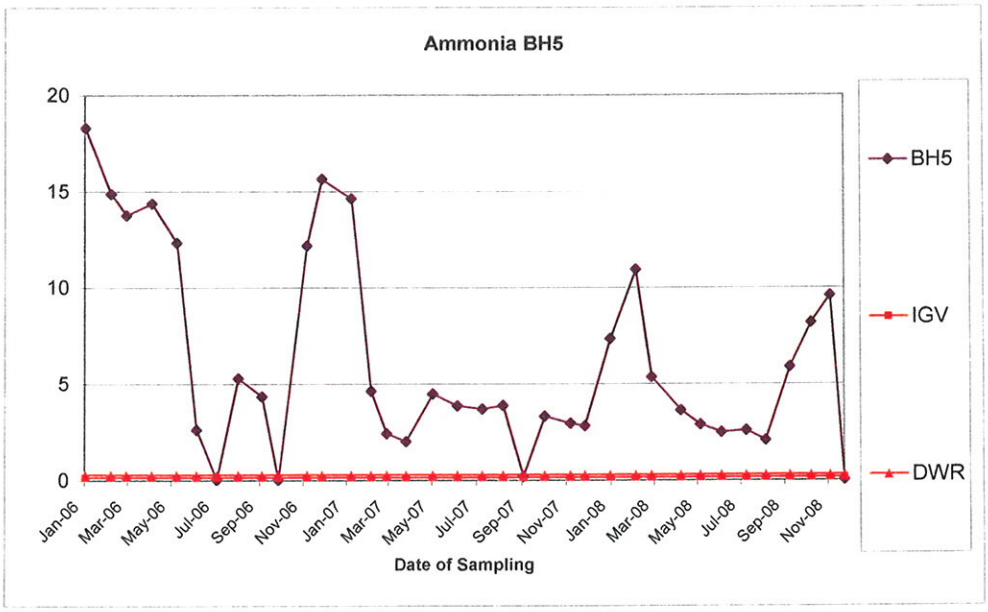
		Drogheda Landfill Site Groundwater Quality																	
Monitoring Point:		**BH10**																	
Date Collected		**31-Jul-07**	**28-Aug-07**	**25-Sep-07**	**24-Oct-07**	**28-Nov-07**	**18-Dec-07**	**22-Jan-08**	**26-Feb-08**	**19-Mar-08**	**29-Apr-08**	**27-May-08**	**26-Jun-08**	**31-Jul-08**	**27-Aug-08**	**30-Sep-08**	**30-Oct-08**	**26-Nov-08**	**16-Dec-08**
Alkalinity	**mg/l CaCO3**										140								
Ammonia	**mg/l N**	0.09	0.08	<0.03	<0.03	<0.03	<0.03	0.11	0.03	0.05	<0.03	0.03	<0.03	0.04	0.05	<0.03	0.04	0.07	0.04
Barium	**ug/l**	69.4	54.8	<50	62.6	nm	<50	<50	<50	54	80	70.3	<50	<50	<50	<50	<50	<50	
B.O.D.	**mg/l O2**																		
Boron	**µg/l**										302.2								
Cadmium	**µg/l**	<0.10	<0.10	<0.10	0.6	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Calcium	**mg/l Ca**										58.76								
C.O.D.	**mg/l O2**																		
Chloride	**mg/l Cl**	135	107	109	134	92	125	39	63	99	125	133	>80	76	124	118	60	76	93
Chromium	**µg/l**	2.3	<1	<1	<1	<1	<1	3.3	<1	3.4	<1	<1	3.6	<1	2.4	<1	<1	<1	<1
Conductivity	**µS/cm @ 25**	717	711	728	714	712	727	344	555	616	736	730	655	516	609	605	418	515	567
Copper	**µg/l**										5.4								
Cyanide	**mg/l**										<0.05								
Depth	**m**	26.0	26.8	23.5	26.9	24.8	27.6	25.9	26.4	26.1	27.4	27.8	27.5	27.5	25.9	25.1	26.9	27.1	27
D.O.	**% Saturation**	60			41			91			73			51			64		
Faecal Coliforms	**No/100 ml**										6								
Fluoride	**mg/l**										<0.150								
Iron	**µg/l**	1114.7	273.7	154.7	151.7	287.2	210.8	1403.6	290	688.6	407.3	545	230.4	278.3	448.4	105.8	435.5	416.5	223.1
Lead	**µg/l**	4.4	<1	<1	2.0	<1	<1	4.3	<1	3	2.7	<1	<1	<1	2.7	<1	2.3	3.1	<1
Magnesium	**mg/l Mg**										13.34								
Manganese	**µg/l**	316.8	124.0	15.4	22.5	43	36	56.9	27.1	57.1	120.3	190.1	93.8	46.1	213.8	18.3	58	56	22.8
Mercury	**µg/l**										<0.10								
Nickel	**µg/l**	13.4	7.2	8.2	7.4	8.6	7.7	6.3	4.1	7.6	8.8	9.2	8.5	5.3	8.6	5.3	4.6	5	5.6
Nitrite	**mg/l N**	0.013	0.004	0.004	0.007	0.003	0.006	0.089	0.012	0.027	0.006	0.004	0.009	0.013	0.762	<0.003	0.02	0.017	0.008
o-Phosphate	**mg/l P**										0.02								
pH		7.8	7.8	7.8	7.7	7.7	7.7	7.8	7.8	7.8	7.7	7.8	8	7.9	8.1	8	8	7.9	7.9
Phenol	**mg/l**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.02	0.01	<0.01	<0.01	<0.01	nm	0.03	<0.01	0.03	<0.01	
Potassium	**mg/l**	13.36	12.98	12.79	13.99	15.06	13.69	4.55	6.81	10.07	13.29	10.21	11.4	9.38	13.07	11.31	7.4	8.84	9.65
Residue on Evaporation	**mg/l**										470								
Sodium	**mg/l**	70.49	70.87	71.02	74.70	76.73	77.08	27.1	41.36	66.44	69.47	56.82	64.44	45.74	67.51	59.14	34.23	45.4	57.79
Sulphate	**mg/l SO4**										42.9								
Temp	**°C**	20.1	14.0	16.0	14.1	13	11	7	12	12	11	13	16.8	16.5	14	15	10.4	11	12
Time sampled		12.45	12.15	12.20	12.15	10.2	12.35	nt	12.1	12.15	12.2	12.15	12.25	12.45	12.15	12.2	11.55	12.05	11.2
Total Coliforms	**No/ 100 ml**										33								
T.O.C.	**mg/l**	9.5			7.0			2.2			6.7			<1.5			3.3		
T.O.N	**mg/l N**	0.31	0.23	0.23	0.22	0.81	0.84	0.88	1.63	1.47	0.84	0.32	0.14	0.82	0.13	0.23	0.57	0.38	0.29
Total S Solids	**mg/l**																		
Zinc	**µg/l**	29.5	9.7	5.4	6.4	3.6	<1	10.7	3.4	7.1	6.7	<1	10.9	3.5	8.2	2.1	11.6	5.9	5

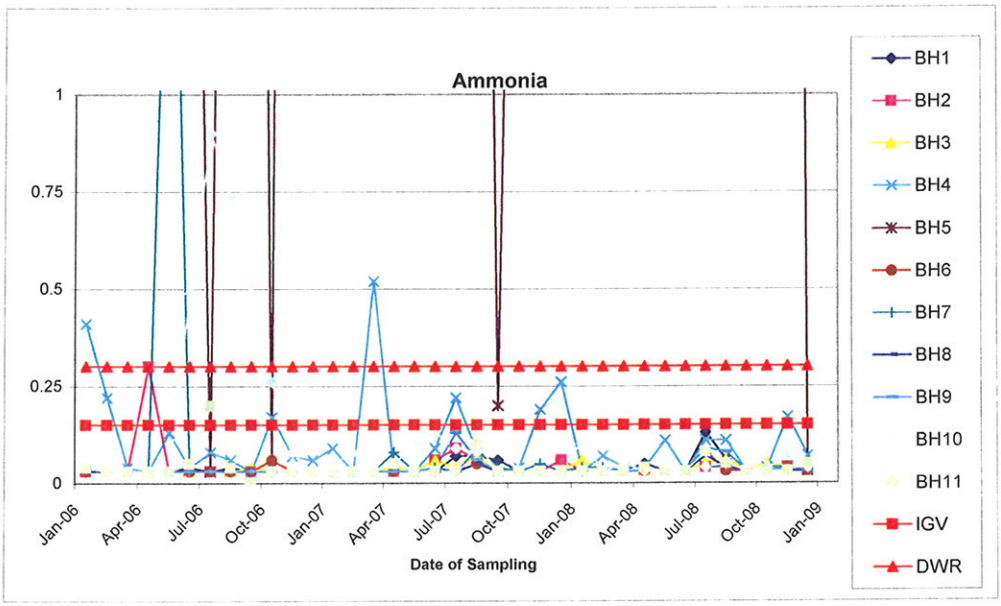
		Drogheda Landfill Site Groundwater Quality																	
Monitoring Point:		**BH11A**																	
Date Collected		**31-Jul-07**	**28-Aug-07**	**25-Sep-07**	**24-Oct-07**	**28-Nov-07**	**18-Dec-07**	**22-Jan-08**	**26-Feb-08**	**19-Mar-08**	**29-Apr-08**	**27-May-08**	**26-Jun-08**	**31-Jul-08**	**27-Aug-08**	**30-Sep-08**	**30-Oct-08**	**26-Nov-08**	**16-Dec-08**
Alkalinity	**mg/l CaCO3**										232								
Ammonia	**mg/l N**	<0.03	0.10	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.04	<0.03	<0.03	0.08	0.05	<0.03	<0.03	0.03	0.05
Barium	**ug/1**	53.0	62.7	<50	58.2	nm	<50	55.5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	
B.O.D.	**mg/l O2**																		
Boron	**µg/l**										309.7								
Cadmium	**µg/l**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Calcium	**mg/l Ca**										158.01								
C.O.D.	**mg/l O2**																		
Chloride	**mg/l Cl**	88	82	100	112	92	101	77	70	71	67	65	65	72	62	58	58	57	59
Chromium	**µg/l**	2.8	3.3	<1	2.3	2.2	3.5	5.5	3.5	4.7	7.6	4.5	8.3	<50	6.6	4.1	4.4	3.5	3.5
Conductivity	**µS/cm @ 25**	1555	1576	1600	1561	1650	1549	1531	1414	1408	1275	1222	1179	1120	1098	1110	1130	1149	1170
Copper	**µg/l**										4.4								
Cyanide	**mg/l**										<0.05								
Depth	**m**	16.0	15.8	nm	16.1	15.3	15	15.1	15.9	15.2	15.1	15.3	14.9	15	15.1	15.2	15.1	15.2	15.3
D.O.	**% Saturation**	74			37			68			72			83			65		
Faecal Coliforms	**No/100 ml**										3								
Fluoride	**mg/l**										<0.150								
Iron	**µg/l**	532.2	1081.9	400.4	319.9	394.9	388.2	391.7	226.4	293.3	466.1	516.4	305.8	270.2	256.7	172.4	277.5	169.2	116.1
Lead	**µg/l**	4.5	4.1	<1	<1	2.6	<1	2.2	<1	<1	5.1	4	2.6	<1	3.9	<1	2.6	<1	<1
Magnesium	**mg/l Mg**										92.07								
Manganese	**µg/l**	54.6	135.7	10.8	9.2	29.3	29.1	22.9	13.7	19.1	76.8	58.4	40.5	28.6	28.3	11.8	29.8	13.9	5.4
Mercury	**µg/l**										<0.10								
Nickel	**µg/l**	4.7	5.0	3.8	2.2	4.4	4.6	3.4	2.7	2.7	3.8	3.8	5.9	2.4	2.5	2.1	2.7	<1	<1
Nitrite	**mg/l N**	0.005	0.003	0.006	0.006	<0.003	0.008	0.009	0.004	0.004	0.011	<0.003	0.011	0.016	0.017	0.008	0.004	0.031	<0.003
o-Phosphate	**mg/l P**										<0.02								
pH		7.4	7.3	7.2	7.3	7.4	7.4	7.2	7.4	7.3	7.4	7.5	7.4	7.5	7.6	7.4	7.5	7.4	7.4
Phenol	**mg/l**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.02	0.02	<0.01	<0.01	<0.01	nm	0.03	0.01	0.03	<0.01	
Potassium	**mg/l**	22.09	20.85	22.52	24.86	28.6	27.34	28.64	28.19	27.27	27.76	25.13	23.47	22.53	24.02	21.84	23.16	22.2	23.13
Residue on Evaporation	**mg/l**										439								
Sodium	**mg/l**	63.88	63.53	69.66	78.24	83.42	91.25	76.35	66.42	64.19	54.56	44.75	46.50	43.81	41.56	39.54	41.89	44.31	49.61
Sulphate	**mg/l SO4**										347.7								
Temp	**°C**	18.4	16.0	15.0	14.3	16	14	9	16	14	14	15	16.3	15.7	16	14	11.8	13	14
Time sampled		13.30	12.45	12.55	12.50	11	13	nt	12.4	12.45	13.3	12.55	12.55	13	12.55	13	12.3	12.2	11.45
Total Coliforms	**No/ 100 ml**										20								
T.O.C.	**mg/l**	5.3			4.5			4.7			2.9			2			2.6		
T.O.N	**mg/l N**	7.82	9.21	8.61	9.58	10.36	8.44	7.65	7.4	7.09	6.05	5.04	4.59	3.84	3.47	3.89	4.31	4.64	4.34
Total S Solids	**mg/l**																		
Zinc	**µg/l**	2.1	9.9	16.1	14.1	14.4	17	21.3	16.4	13.5	15	<1	13.1	10.1	13.3	9.2	18.9	7.6	10.7

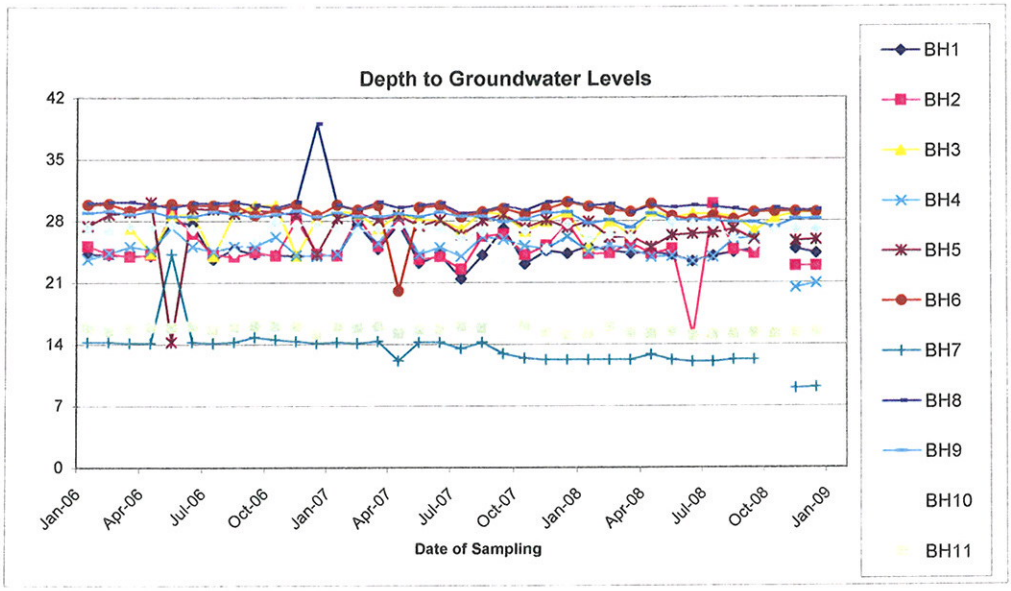

pH
11
10
9
8
7
6
5
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date of Sampling
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR
DWR

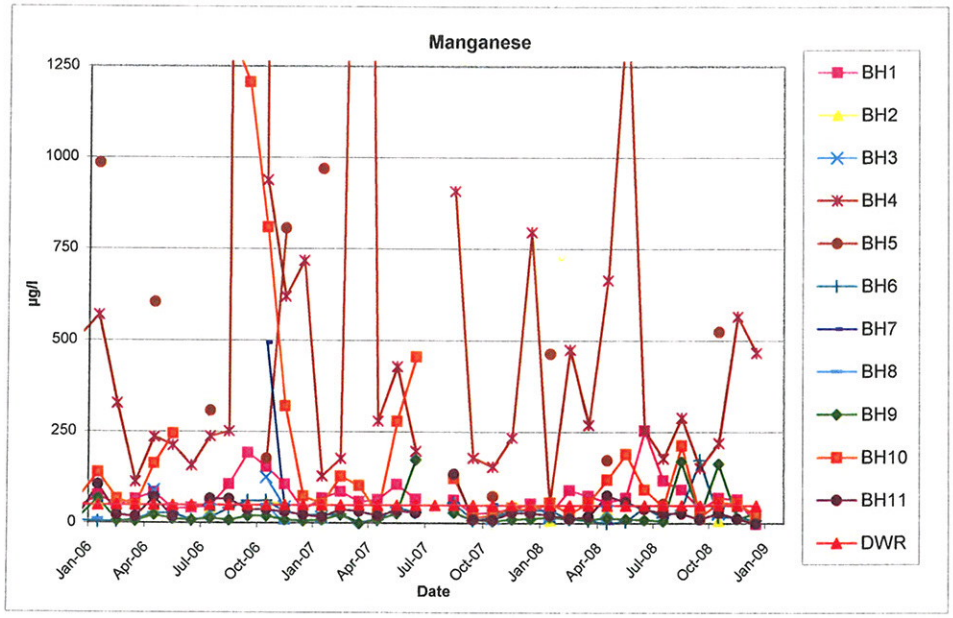

Conductivity
3000
2000
1000
0
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date of Sampling
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
IGV
DWR

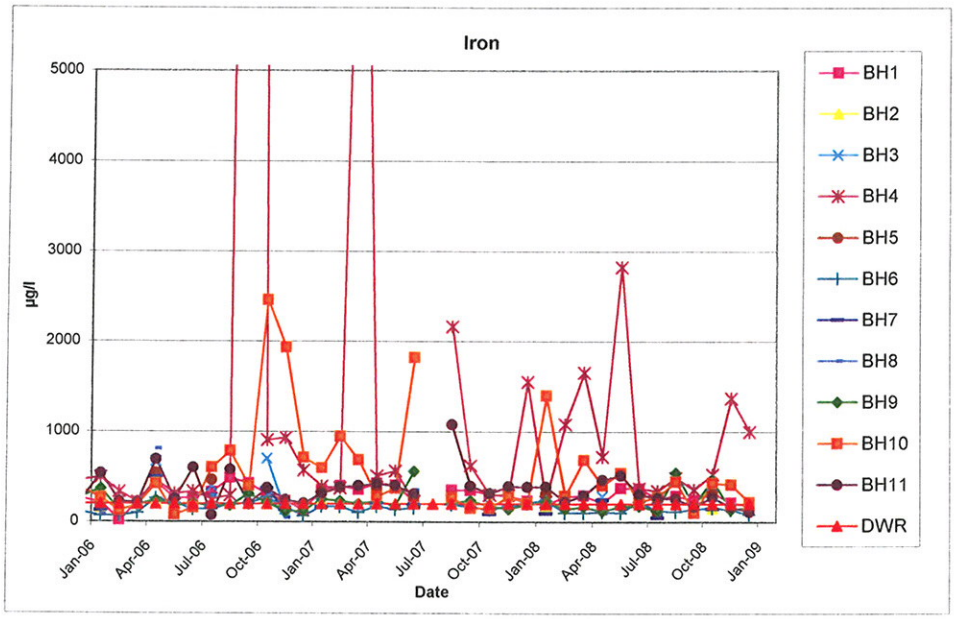

Temperature
30
25
20
15
10
5
0
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date of Sampling
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR

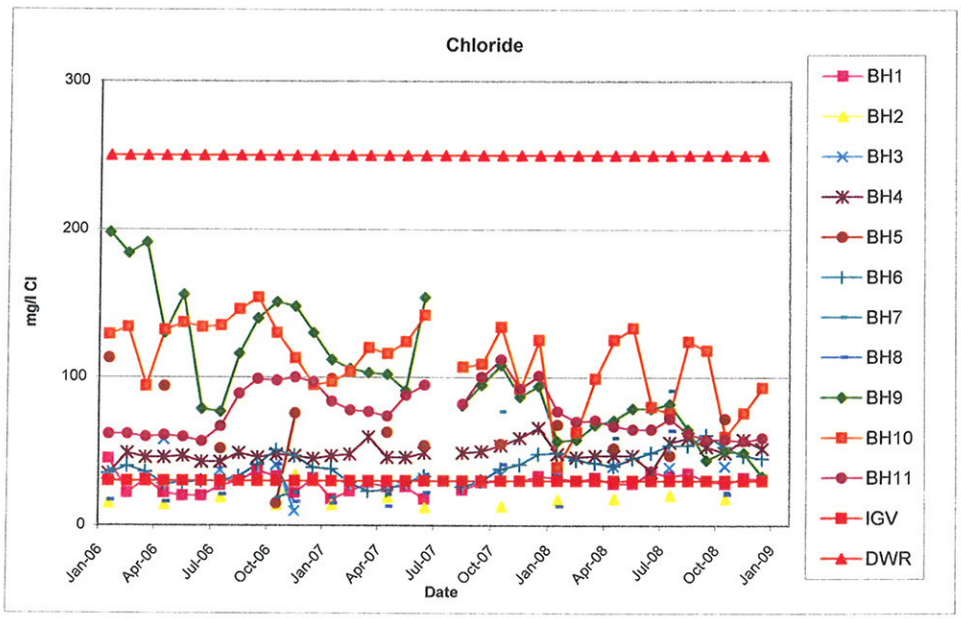

Ammonia BH5
20
15
10
5
0
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07
Nov-07
Jan-08
Mar-08
May-08
Jul-08
Sep-08
Nov-08
Date of Sampling
BH5
IGV
DWR

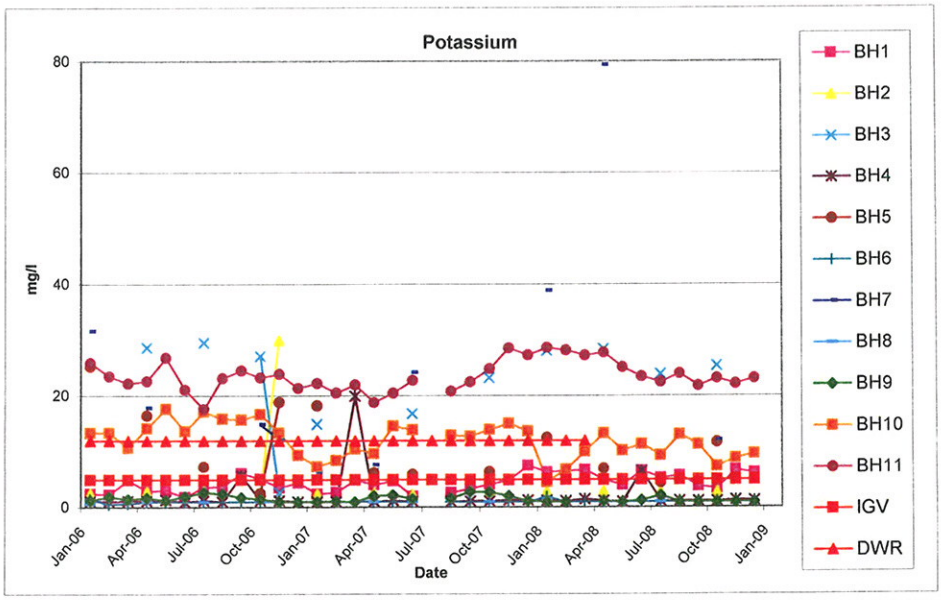

Ammonia
1
0.75
0.5
0.25
0
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date of Sampling
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
IGV
DWR

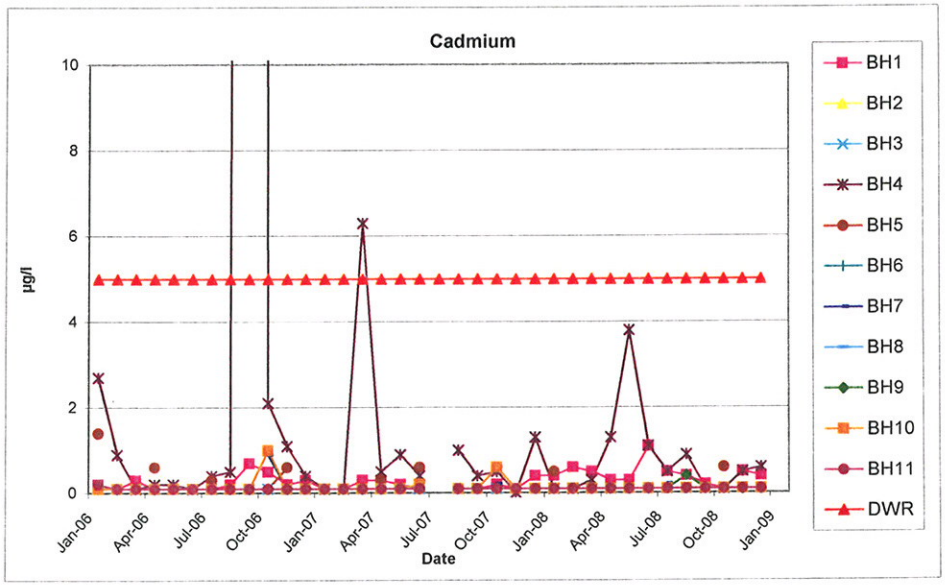

Depth to Groundwater Levels
42
35
28
21
14
7
0
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date of Sampling
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11

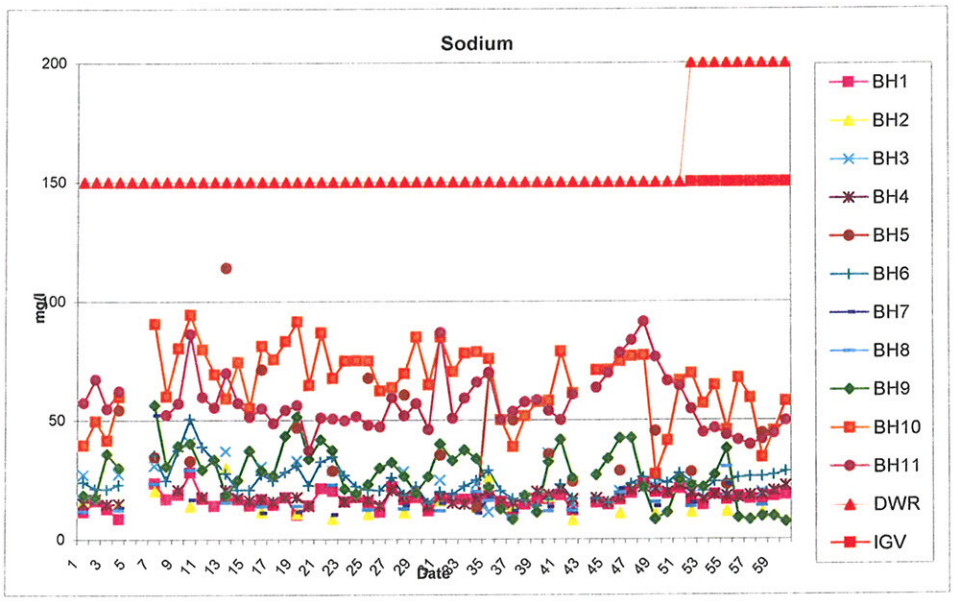

Manganese
1250
1000
750
500
250
0
µg/l
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR

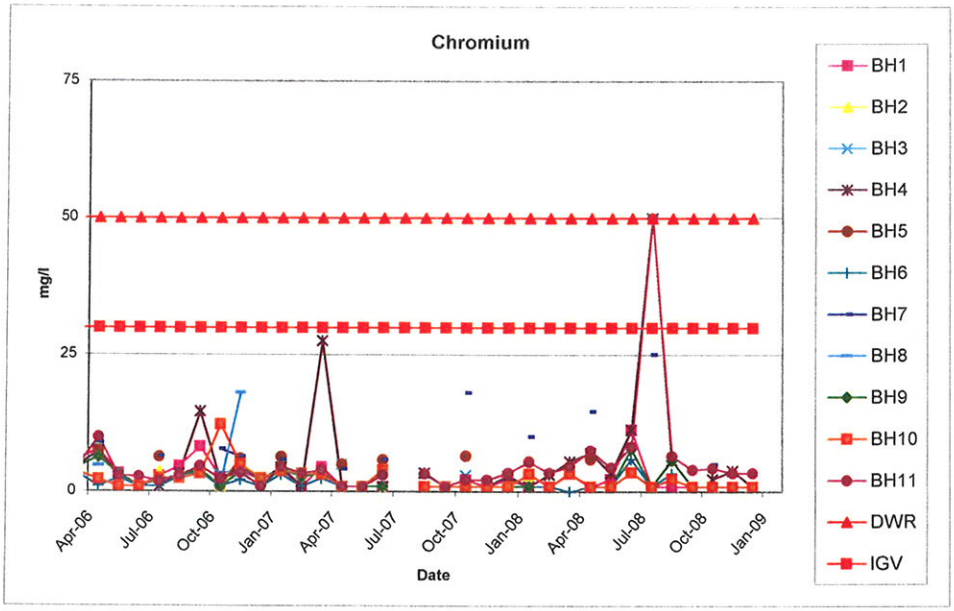

Iron
5000
4000
3000
2000
1000
0
µg/l
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR

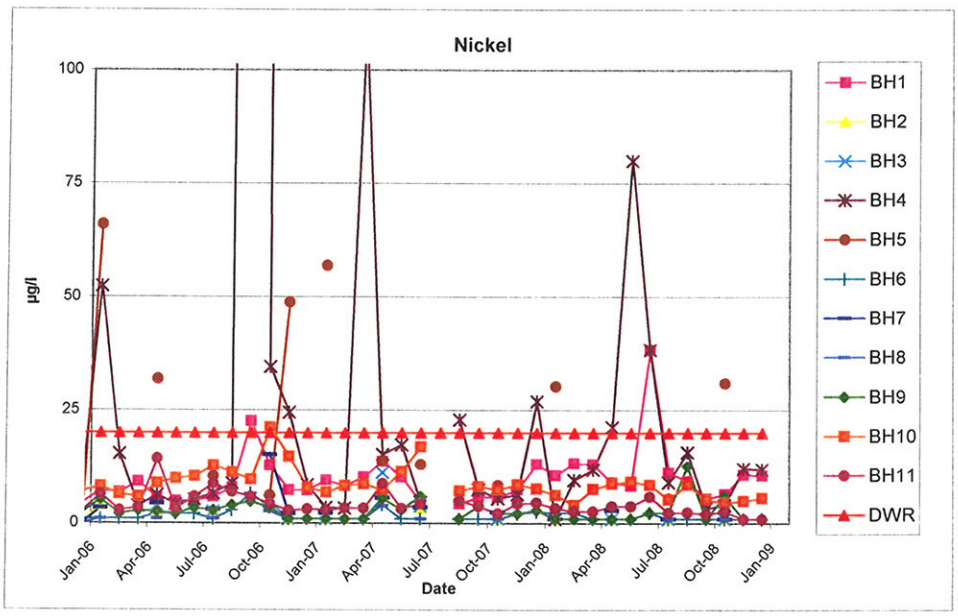

Chloride
300
200
100
0
mg/l Cl
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
IGV
DWR

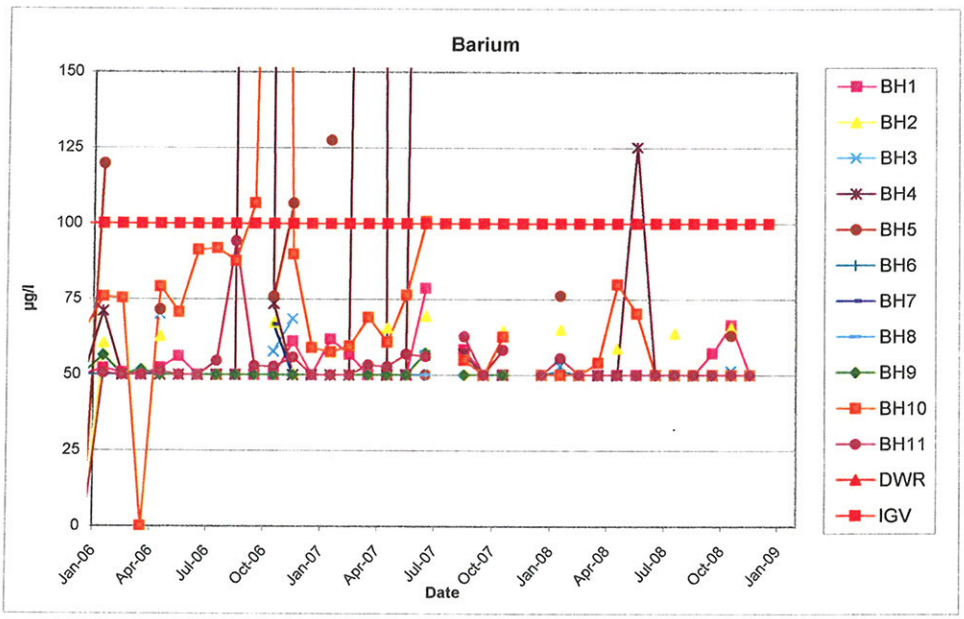

Potassium
mg/l
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
IGV
DWR

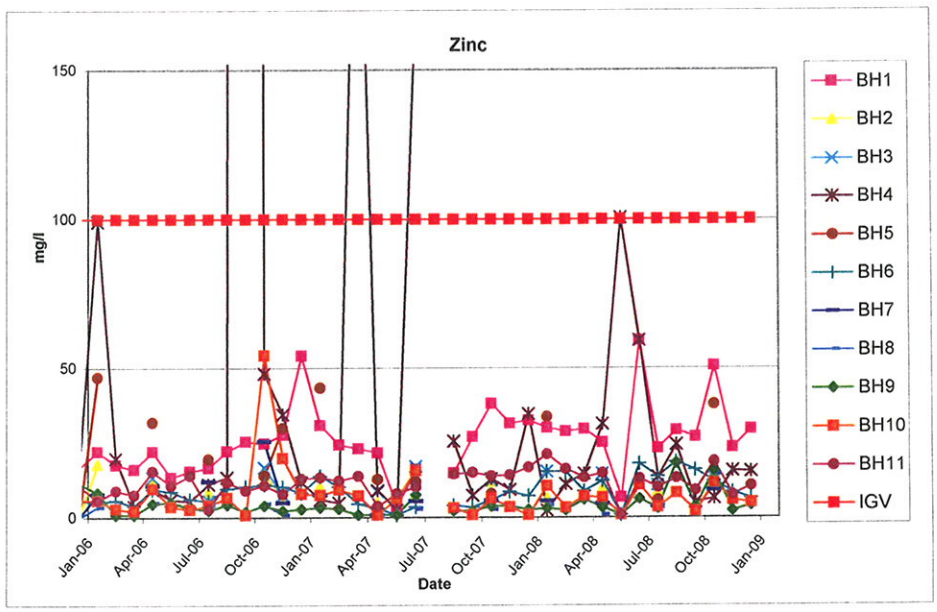

Cadmium
µg/l
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR

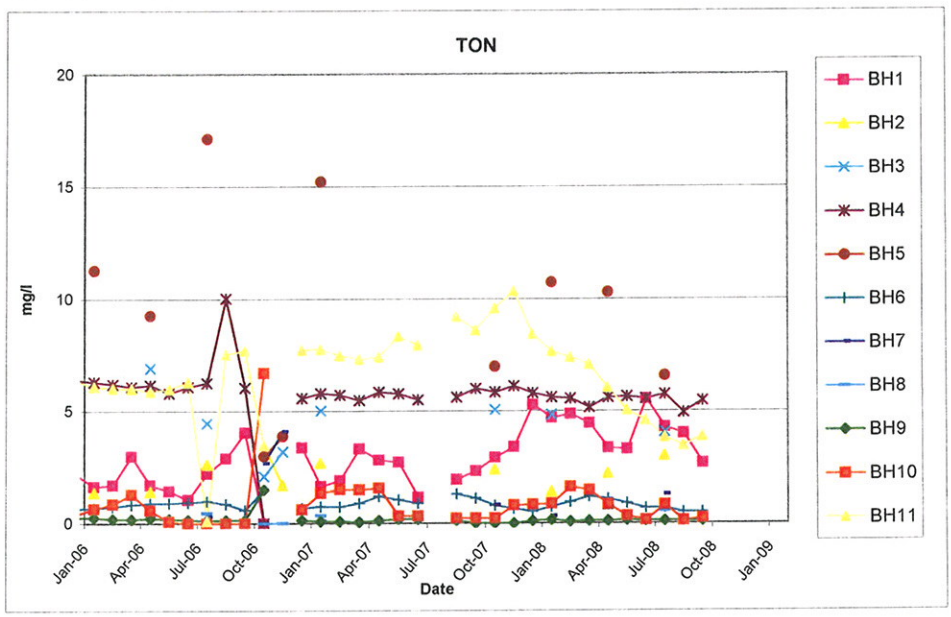

Sodium
mg/l
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR
IGV

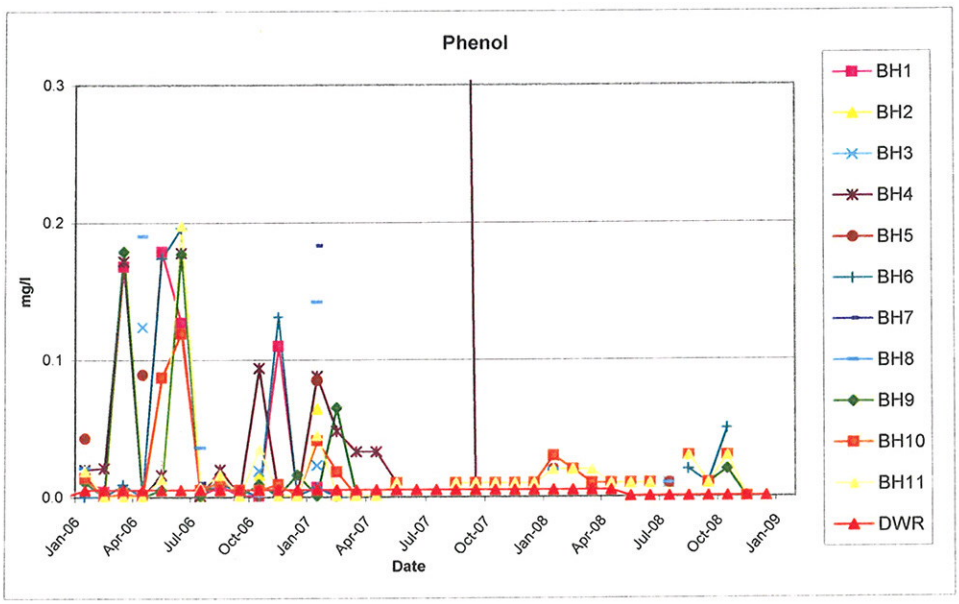

Chromium
mg/l
75
50
25
0
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR
IGV

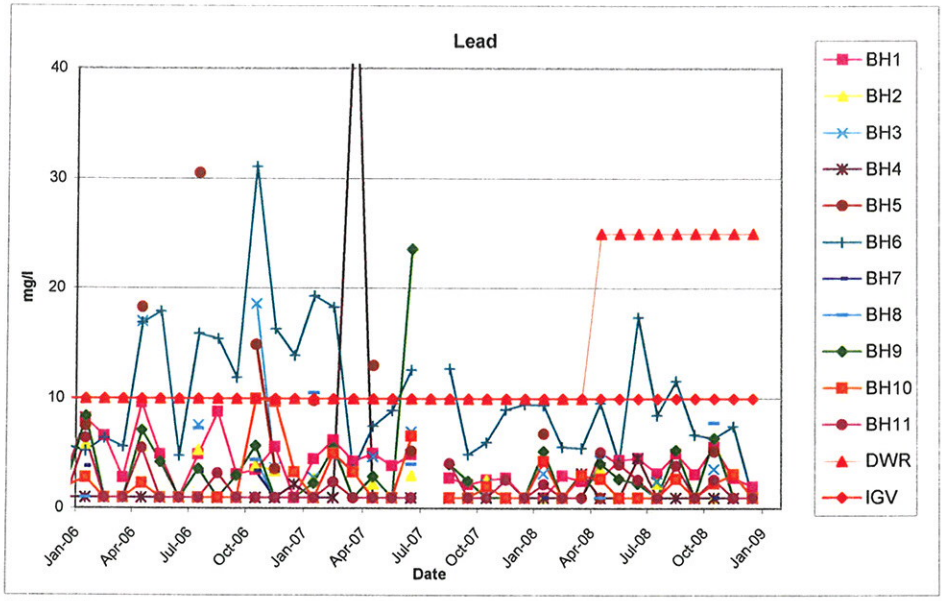

Nickel
µg/l
100
75
50
25
0
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR

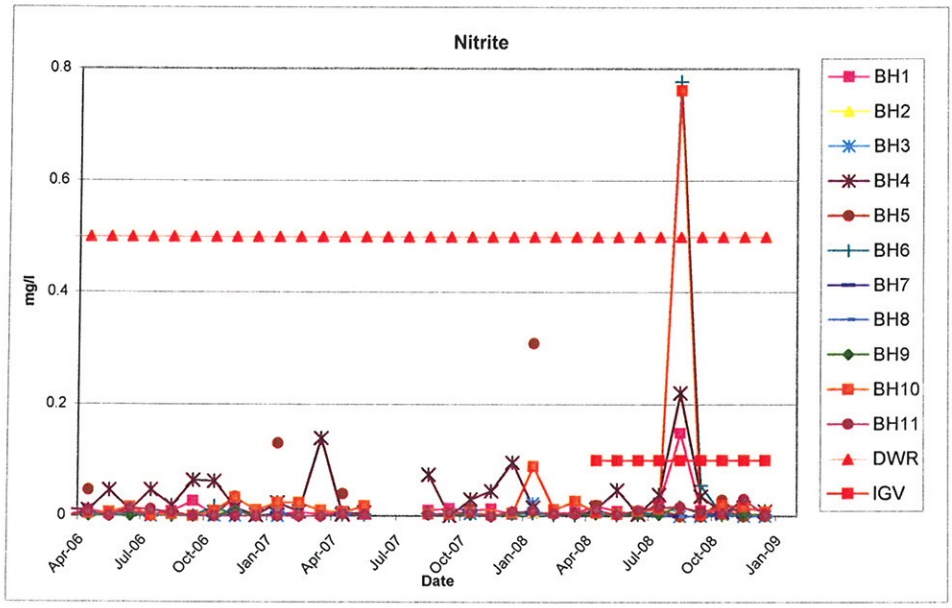

Barium
µg/l
150
125
100
75
50
25
0
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR
IGV

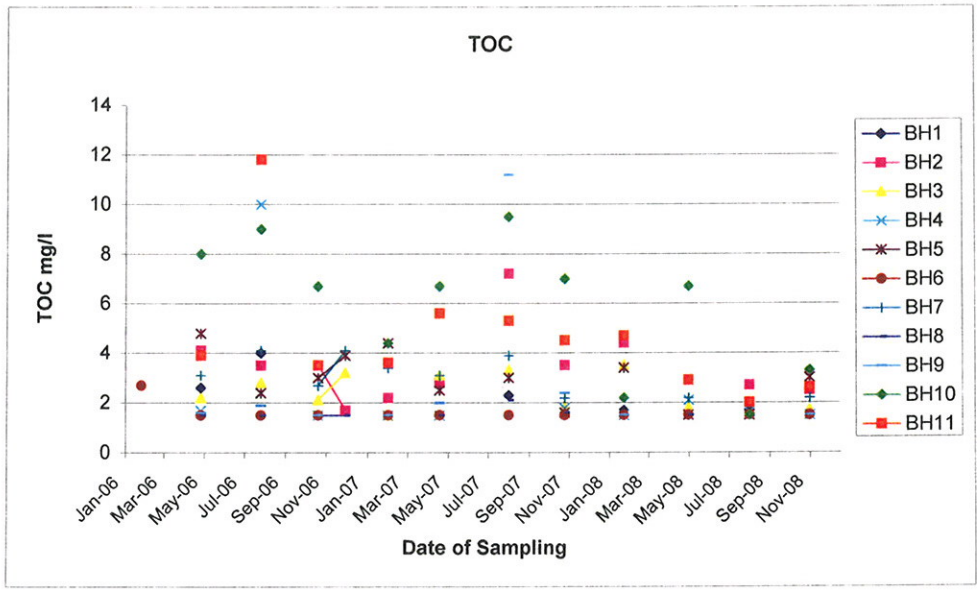

Zinc
150
100
50
0
mg/l
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
IGV

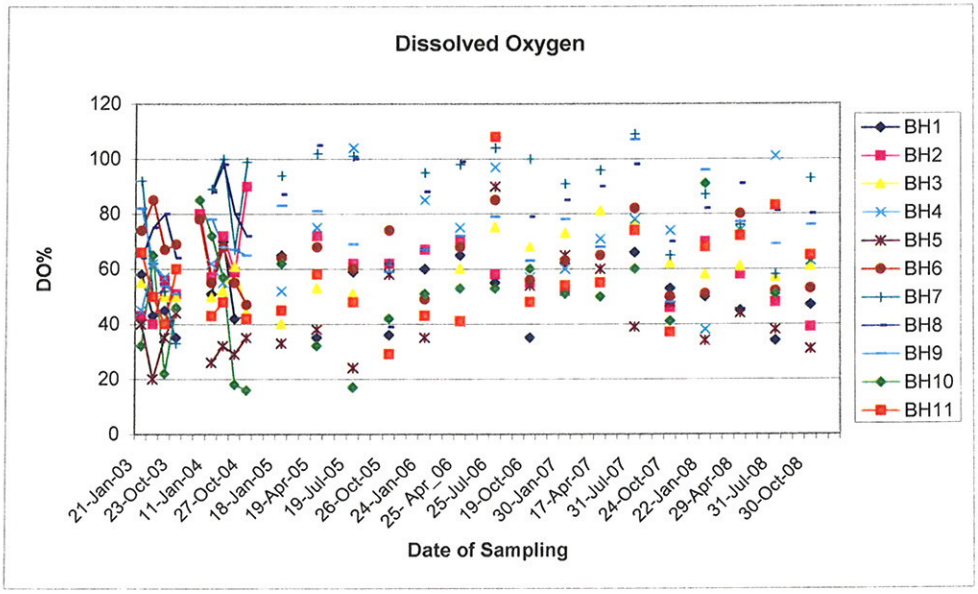

TON
20
15
10
5
0
mg/l
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11

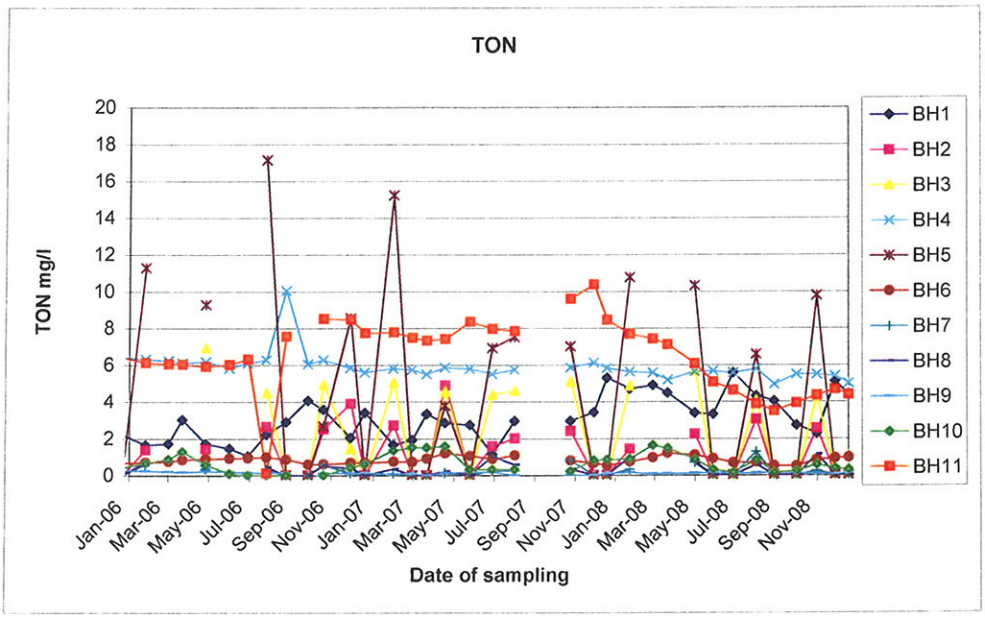

Phenol
0.3
0.2
0.1
0.0
mg/l
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR


Lead
mg/l
40
30
20
10
0
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR
IGV


Nitrite
mg/l
0.8
0.6
0.4
0.2
0
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Date
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
DWR
IGV


TOC
TOC mg/l
0
2
4
6
8
10
12
14
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07
Nov-07
Jan-08
Mar-08
May-08
Jul-08
Sep-08
Nov-08
Date of Sampling
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11


Dissolved Oxygen
DO%
0
20
40
60
80
100
120
21-Jan-03
23-Oct-03
11-Jan-04
27-Oct-04
18-Jan-05
19-Apr-05
19-Jul-05
26-Oct-05
24-Jan-06
25- Apr_06
25-Jul-06
19-Oct-06
30-Jan-07
17-Apr-07
31-Jul-07
24-Oct-07
22-Jan-08
29-Apr-08
31-Jul-08
30-Oct-08
Date of Sampling
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11


TON
TON mg/l
0
2
4
6
8
10
12
14
16
18
20
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07
Nov-07
Jan-08
Mar-08
May-08
Jul-08
Sep-08
Nov-08
Date of sampling
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11

APPENDIX C

ANNUAL LIST I &II MONITORING RESULTS

Environmental Protection Agency, Regional Inspectorate, Monaghan

Results of VOC Analysis

A Report To: Office of Environmental Enforcement **VOC-2008-29**

Laboratory Reference Number	2801280
Sampling Location	Drogheda Corporation, Drogheda Landfill Site.
	DA_LFS_BH_G1_Annual BH1
Date Sampled & Sampled By	29/04/08 G Crawley
Date Reported	15/05/08

VOC	Detection Limit (µg/l)	Result (µg/l)
1,1-dichloroethene	0.1	<0.1
Dichloromethane	0.1	<0.1
trans-1,2-dichloroethene	0.1	<0.1
1,1-dichloroethene	0.1	<0.1
2,2-dichloropropane	0.1	<0.1
cis-1,2-dichloroethene	0.1	<0.1
bromochloromethane	0.1	<0.1
Chloroform	0.1	<0.1
1,1,1-trichloroethane	0.1	<0.1
carbon tetrachloride	0.1	<0.1
1,1-dichloropropene	0.1	<0.1
Benzene	0.1	<0.1
1,2-dichloroethane	0.1	<0.1
trichloroethene	0.1	<0.1
1,2-dichloropropane	0.1	<0.1
dibromomethane	0.1	<0.1
bromodichloromethane	0.1	<0.1
cis-1,3-dichloropropene	0.1	<0.1
Toluene	0.1	<0.1
trans-1,3-dichloropropene	0.1	<0.1
1,1,2,-trichloroethane	0.1	<0.1
tetrachloroethene	0.1	<0.1
1,3-dichloropropane	0.1	<0.1
dibromochloromethane	0.1	<0.1
1,2-dibromoethane	0.1	<0.1
chlorobenzene	0.1	<0.1
1,1,1,2-tetrachloroethane	0.1	<0.1
ethylbenzene	0.1	<0.1
m,p-xylene	0.1	<0.1
o-xylene	0.1	<0.1
styrene	0.1	<0.1
bromoform	0.1	<0.1
isopropylbenzene	0.1	<0.1

Environmental Protection Agency, Regional Inspectorate, Monaghan

A Report To: Office of Environmental Enforcement **VOC-2008-29**

VOC	Detection Limit (µg/l)	Result (µg/l)
bromobenzene	0.1	<0.1
1,1,2,2-tetrachloroethane	0.1	<0.1
1,2,3-trichloropropane	0.1	<0.1
n-propylbenzene	0.1	<0.1
2-chlorotoluene	0.1	<0.1
4-chlorotoluene	0.1	<0.1
1,3,5-trimethylbenzene	0.1	<0.1
t-butylbenzene	0.1	<0.1
1,2,4-trimethylbenzene	0.1	<0.1
sec-butylbenzene	0.1	<0.1
1,3-dichlorobenzene	0.1	<0.1
1,4-dichlorobenzene	0.1	<0.1
p-isopropyltoluene	0.1	<0.1
1,2-dichlorobenzene	0.1	<0.1
n-butylbenzene	0.1	<0.1
1,2-dibromo-3-chloropropane	0.1	<0.1
1,2,4-trichlorobenzene	0.1	<0.1
Naphthalene	0.1	<0.1
hexachlorobutadiene	0.1	<0.1
1,2,3-trichlorobenzene	0.1	<0.1

Notes:
(1) Samples were analysed by Purge & Trap & GC-MS.

(2) MAC (European Communities (Quality of Water Intended for Human Consumption) Regulations, 1988) is 100ug/l total trihalomethanes.

Regina McGinn Date: 18/7/08

Regina McGinn B.Sc.,M.Sc
Analytical Chemist

Environmental Protection Agency, Regional Inspectorate, Monaghan

Results of VOC Analysis

A Report To: Office of Environmental Enforcement **VOC-2008-30**

Laboratory Reference Number	2801281
Sampling Location	Drogheda Corporation, Drogheda Landfill Site.
	DA_LFS_BH_G1_Annual BH4
Date Sampled & Sampled By	29/04/08 G Crawley
Date Reported	15/05/08

VOC	Detection Limit (µg/l)	Result (µg/l)
1,1-dichloroethene	0.1	<0.1
Dichloromethane	0.1	<0.1
trans-1,2-dichloroethene	0.1	<0.1
1,1-dichloroethene	0.1	<0.1
2,2-dichloropropane	0.1	<0.1
cis-1,2-dichloroethene	0.1	0.332
bromochloromethane	0.1	<0.1
Chloroform	0.1	<0.1
1,1,1-trichloroethane	0.1	<0.1
carbon tetrachloride	0.1	<0.1
1,1-dichloropropene	0.1	<0.1
Benzene	0.1	<0.1
1,2-dichloroethane	0.1	<0.1
trichloroethene	0.1	<0.1
1,2-dichloropropane	0.1	<0.1
dibromomethane	0.1	<0.1
bromodichloromethane	0.1	<0.1
cis-1,3-dichloropropene	0.1	<0.1
Toluene	0.1	<0.1
trans-1,3-dichloropropene	0.1	<0.1
1,1,2,-trichloroethane	0.1	<0.1
tetrachloroethene	0.1	<0.1
1,3-dichloropropane	0.1	<0.1
dibromochloromethane	0.1	<0.1
1,2-dibromoethane	0.1	<0.1
chlorobenzene	0.1	<0.1
1,1,1,2-tetrachloroethane	0.1	<0.1
ethylbenzene	0.1	<0.1
m,p-xylene	0.1	<0.1
o-xylene	0.1	<0.1
styrene	0.1	<0.1
bromoform	0.1	<0.1
isopropylbenzene	0.1	<0.1

Environmental Protection Agency, Regional Inspectorate, Monaghan

A Report To: Office of Environmental Enforcement **VOC-2008-30**

VOC	Detection Limit (µg/l)	Result (µg/l)
bromobenzene	0.1	<0.1
1,1,2,2-tetrachloroethane	0.1	<0.1
1,2,3-trichloropropane	0.1	<0.1
n-propylbenzene	0.1	<0.1
2-chlorotoluene	0.1	<0.1
4-chlorotoluene	0.1	<0.1
1,3,5-trimethylbenzene	0.1	<0.1
t-butylbenzene	0.1	<0.1
1,2,4-trimethylbenzene	0.1	<0.1
sec-butylbenzene	0.1	<0.1
1,3-dichlorobenzene	0.1	<0.1
1,4-dichlorobenzene	0.1	<0.1
p-isopropyltoluene	0.1	<0.1
1,2-dichlorobenzene	0.1	<0.1
n-butylbenzene	0.1	<0.1
1,2-dibromo-3-chloropropane	0.1	<0.1
1,2,4-trichlorobenzene	0.1	<0.1
Naphthalene	0.1	<0.1
hexachlorobutadiene	0.1	<0.1
1,2,3-trichlorobenzene	0.1	<0.1

Notes:
(1) Samples were analysed by Purge & Trap & GC-MS.

(2) MAC (European Communities (Quality of Water Intended for Human Consumption) Regulations, 1988) is 100ug/l total trihalomethanes.

Regina Mc Ginn Date: 15/5/08

Regina McGinn B.Sc.,M.Sc
Analytical Chemist

Environmental Protection Agency, Regional Inspectorate, Monaghan

Results of VOC Analysis

A Report To: Office of Environmental Enforcement **VOC-2008-31**

Laboratory Reference Number	2801282
Sampling Location	Drogheda Corporation, Drogheda Landfill Site.
	DA_LFS_BH_G1_Annual BH6
Date Sampled & Sampled By	29/04/08 G Crawley
Date Reported	15/05/08

VOC	Detection Limit (µg/l)	Result (µg/l)
1,1-dichloroethene	0.1	<0.1
Dichloromethane	0.1	<0.1
trans-1,2-dichloroethene	0.1	<0.1
1,1-dichloroethene	0.1	<0.1
2,2-dichloropropane	0.1	<0.1
cis-1,2-dichloroethene	0.1	<0.1
bromochloromethane	0.1	<0.1
Chloroform	0.1	<0.1
1,1,1-trichloroethane	0.1	<0.1
carbon tetrachloride	0.1	<0.1
1,1-dichloropropene	0.1	<0.1
Benzene	0.1	<0.1
1,2-dichloroethane	0.1	<0.1
trichloroethene	0.1	<0.1
1,2-dichloropropane	0.1	<0.1
dibromomethane	0.1	<0.1
bromodichloromethane	0.1	<0.1
cis-1,3-dichloropropene	0.1	<0.1
Toluene	0.1	<0.1
trans-1,3-dichloropropene	0.1	<0.1
1,1,2,-trichloroethane	0.1	<0.1
tetrachloroethene	0.1	<0.1
1,3-dichloropropane	0.1	<0.1
dibromochloromethane	0.1	<0.1
1,2-dibromoethane	0.1	<0.1
chlorobenzene	0.1	<0.1
1,1,1,2-tetrachloroethane	0.1	<0.1
ethylbenzene	0.1	<0.1
m,p-xylene	0.1	<0.1
o-xylene	0.1	<0.1
styrene	0.1	<0.1
bromoform	0.1	<0.1
isopropylbenzene	0.1	<0.1

Environmental Protection Agency, Regional Inspectorate, Monaghan

A Report To: Office of Environmental Enforcement **VOC-2008-31**

VOC	Detection Limit (µg/l)	Result (µg/l)
bromobenzene	0.1	<0.1
1,1,2,2-tetrachloroethane	0.1	<0.1
1,2,3-trichloropropane	0.1	<0.1
n-propylbenzene	0.1	<0.1
2-chlorotoluene	0.1	<0.1
4-chlorotoluene	0.1	<0.1
1,3,5-trimethylbenzene	0.1	<0.1
t-butylbenzene	0.1	<0.1
1,2,4-trimethylbenzene	0.1	<0.1
sec-butylbenzene	0.1	<0.1
1,3-dichlorobenzene	0.1	<0.1
1,4-dichlorobenzene	0.1	<0.1
p-isopropyltoluene	0.1	<0.1
1,2-dichlorobenzene	0.1	<0.1
n-butylbenzene	0.1	<0.1
1,2-dibromo-3-chloropropane	0.1	<0.1
1,2,4-trichlorobenzene	0.1	<0.1
Naphthalene	0.1	<0.1
hexachlorobutadiene	0.1	<0.1
1,2,3-trichlorobenzene	0.1	<0.1

Notes:
(1) Samples were analysed by Purge & Trap & GC-MS.

(2) MAC (European Communities (Quality of Water Intended for Human Consumption) Regulations, 1988) is 100ug/l total trihalomethanes.

Regina Mc Ginn Date: 15/5/08

Regina McGinn B.Sc.,M.Sc
Analytical Chemist

Environmental Protection Agency, Regional Inspectorate, Monaghan

Results of VOC Analysis

A Report To: Office of Environmental Enforcement **VOC-2008-32**

Laboratory Reference Number	2801283
Sampling Location	Drogheda Corporation, Drogheda Landfill Site.
	DA_LFS_BH_G1_Annual BH9
Date Sampled & Sampled By	29/04/08 G Crawley
Date Reported	15/05/08

VOC	Detection Limit (µg/l)	Result (µg/l)
1,1-dichloroethene	0.1	<0.1
Dichloromethane	0.1	<0.1
trans-1,2-dichloroethene	0.1	<0.1
1,1-dichloroethene	0.1	<0.1
2,2-dichloropropane	0.1	<0.1
cis-1,2-dichloroethene	0.1	<0.1
bromochloromethane	0.1	<0.1
Chloroform	0.1	<0.1
1,1,1-trichloroethane	0.1	<0.1
carbon tetrachloride	0.1	<0.1
1,1-dichloropropene	0.1	<0.1
Benzene	0.1	<0.1
1,2-dichloroethane	0.1	<0.1
trichloroethene	0.1	<0.1
1,2-dichloropropane	0.1	<0.1
dibromomethane	0.1	<0.1
bromodichloromethane	0.1	<0.1
cis-1,3-dichloropropene	0.1	<0.1
Toluene	0.1	<0.1
trans-1,3-dichloropropene	0.1	<0.1
1,1,2,-trichloroethane	0.1	<0.1
tetrachloroethene	0.1	<0.1
1,3-dichloropropane	0.1	<0.1
dibromochloromethane	0.1	<0.1
1,2-dibromoethane	0.1	<0.1
chlorobenzene	0.1	<0.1
1,1,1,2-tetrachloroethane	0.1	<0.1
ethylbenzene	0.1	<0.1
m,p-xylene	0.1	<0.1
o-xylene	0.1	<0.1
styrene	0.1	<0.1
bromoform	0.1	<0.1
isopropylbenzene	0.1	<0.1

Environmental Protection Agency, Regional Inspectorate, Monaghan

A Report To: Office of Environmental Enforcement **VOC-2008-32**

VOC	Detection Limit (µg/l)	Result (µg/l)
bromobenzene	0.1	<0.1
1,1,2,2-tetrachloroethane	0.1	<0.1
1,2,3-trichloropropane	0.1	<0.1
n-propylbenzene	0.1	<0.1
2-chlorotoluene	0.1	<0.1
4-chlorotoluene	0.1	<0.1
1,3,5-trimethylbenzene	0.1	<0.1
t-butylbenzene	0.1	<0.1
1,2,4-trimethylbenzene	0.1	<0.1
sec-butylbenzene	0.1	<0.1
1,3-dichlorobenzene	0.1	<0.1
1,4-dichlorobenzene	0.1	<0.1
p-isopropyltoluene	0.1	<0.1
1,2-dichlorobenzene	0.1	<0.1
n-butylbenzene	0.1	<0.1
1,2-dibromo-3-chloropropane	0.1	<0.1
1,2,4-trichlorobenzene	0.1	<0.1
Naphthalene	0.1	<0.1
hexachlorobutadiene	0.1	<0.1
1,2,3-trichlorobenzene	0.1	<0.1

Notes:
(1) Samples were analysed by Purge & Trap & GC-MS.

(2) MAC (European Communities (Quality of Water Intended for Human Consumption) Regulations, 1988) is 100ug/l total trihalomethanes.

Regina Mc Ginn

Regina McGinn B.Sc.,M.Sc
Analytical Chemist

Date: 15/5/08

Environmental Protection Agency, Regional Inspectorate, Monaghan

Results of VOC Analysis

A Report To: Office of Environmental Enforcement **VOC-2008-33**

Laboratory Reference Number	2801284
Sampling Location	Drogheda Corporation, Drogheda Landfill Site.
	DA_LFS_BH_G1_Annual BH10
Date Sampled & Sampled By	29/04/08 G Crawley
Date Reported	15/05/08

VOC	Detection Limit (µg/l)	Result (µg/l)
1,1-dichloroethene	0.1	<0.1
Dichloromethane	0.1	<0.1
trans-1,2-dichloroethene	0.1	<0.1
1,1-dichloroethene	0.1	<0.1
2,2-dichloropropane	0.1	<0.1
cis-1,2-dichloroethene	0.1	<0.1
bromochloromethane	0.1	<0.1
Chloroform	0.1	<0.1
1,1,1-trichloroethane	0.1	<0.1
carbon tetrachloride	0.1	<0.1
1,1-dichloropropene	0.1	<0.1
Benzene	0.1	<0.1
1,2-dichloroethane	0.1	<0.1
trichloroethene	0.1	<0.1
1,2-dichloropropane	0.1	<0.1
dibromomethane	0.1	<0.1
bromodichloromethane	0.1	<0.1
cis-1,3-dichloropropene	0.1	<0.1
Toluene	0.1	<0.1
trans-1,3-dichloropropene	0.1	<0.1
1,1,2,-trichloroethane	0.1	<0.1
tetrachloroethene	0.1	<0.1
1,3-dichloropropane	0.1	<0.1
dibromochloromethane	0.1	<0.1
1,2-dibromoethane	0.1	<0.1
chlorobenzene	0.1	<0.1
1,1,1,2-tetrachloroethane	0.1	<0.1
ethylbenzene	0.1	<0.1
m,p-xylene	0.1	<0.1
o-xylene	0.1	<0.1
styrene	0.1	<0.1
bromoform	0.1	<0.1
isopropylbenzene	0.1	<0.1

Environmental Protection Agency, Regional Inspectorate, Monaghan

A Report To: Office of Environmental Enforcement **VOC-2008-33**

VOC	Detection Limit (µg/l)	Result (µg/l)
bromobenzene	0.1	<0.1
1,1,2,2-tetrachloroethane	0.1	<0.1
1,2,3-trichloropropane	0.1	<0.1
n-propylbenzene	0.1	<0.1
2-chlorotoluene	0.1	<0.1
4-chlorotoluene	0.1	<0.1
1,3,5-trimethylbenzene	0.1	<0.1
t-butylbenzene	0.1	<0.1
1,2,4-trimethylbenzene	0.1	<0.1
sec-butylbenzene	0.1	<0.1
1,3-dichlorobenzene	0.1	<0.1
1,4-dichlorobenzene	0.1	<0.1
p-isopropyltoluene	0.1	<0.1
1,2-dichlorobenzene	0.1	<0.1
n-butylbenzene	0.1	<0.1
1,2-dibromo-3-chloropropane	0.1	<0.1
1,2,4-trichlorobenzene	0.1	<0.1
Naphthalene	0.1	<0.1
hexachlorobutadiene	0.1	<0.1
1,2,3-trichlorobenzene	0.1	<0.1

Notes:
(1) Samples were analysed by Purge & Trap & GC-MS.

(2) MAC (European Communities (Quality of Water Intended for Human Consumption) Regulations, 1988) is 100ug/l total trihalomethanes.

Regina McGinn Date: 15/5/08

Regina McGinn B.Sc.,M.Sc
Analytical Chemist

Environmental Protection Agency, Regional Inspectorate, Monaghan

Results of VOC Analysis

A Report To: Office of Environmental Enforcement **VOC-2008-34**

Laboratory Reference Number	2801285
Sampling Location	Drogheda Corporation, Drogheda Landfill Site.
	DA_LFS_BH_G1_Annual BH11
Date Sampled & Sampled By	29/04/08 G Crawley
Date Reported	15/05/08

VOC	Detection Limit (µg/l)	Result (µg/l)
1,1-dichloroethene	0.1	<0.1
Dichloromethane	0.1	<0.1
trans-1,2-dichloroethene	0.1	<0.1
1,1-dichloroethene	0.1	<0.1
2,2-dichloropropane	0.1	<0.1
cis-1,2-dichloroethene	0.1	<0.1
bromochloromethane	0.1	<0.1
Chloroform	0.1	<0.1
1,1,1-trichloroethane	0.1	<0.1
carbon tetrachloride	0.1	<0.1
1,1-dichloropropene	0.1	<0.1
Benzene	0.1	<0.1
1,2-dichloroethane	0.1	<0.1
trichloroethene	0.1	<0.1
1,2-dichloropropane	0.1	<0.1
dibromomethane	0.1	<0.1
bromodichloromethane	0.1	<0.1
cis-1,3-dichloropropene	0.1	<0.1
Toluene	0.1	<0.1
trans-1,3-dichloropropene	0.1	<0.1
1,1,2,-trichloroethane	0.1	<0.1
tetrachloroethene	0.1	<0.1
1,3-dichloropropane	0.1	<0.1
dibromochloromethane	0.1	<0.1
1,2-dibromoethane	0.1	<0.1
chlorobenzene	0.1	<0.1
1,1,1,2-tetrachloroethane	0.1	<0.1
ethylbenzene	0.1	<0.1
m,p-xylene	0.1	<0.1
o-xylene	0.1	<0.1
styrene	0.1	<0.1
bromoform	0.1	<0.1
isopropylbenzene	0.1	<0.1

Environmental Protection Agency, Regional Inspectorate, Monaghan

A Report To: Office of Environmental Enforcement **VOC-2008-34**

VOC	Detection Limit (µg/l)	Result (µg/l)
bromobenzene	0.1	<0.1
1,1,2,2-tetrachloroethane	0.1	<0.1
1,2,3-trichloropropane	0.1	<0.1
n-propylbenzene	0.1	<0.1
2-chlorotoluene	0.1	<0.1
4-chlorotoluene	0.1	<0.1
1,3,5-trimethylbenzene	0.1	<0.1
t-butylbenzene	0.1	<0.1
1,2,4-trimethylbenzene	0.1	<0.1
sec-butylbenzene	0.1	<0.1
1,3-dichlorobenzene	0.1	<0.1
1,4-dichlorobenzene	0.1	<0.1
p-isopropyltoluene	0.1	<0.1
1,2-dichlorobenzene	0.1	<0.1
n-butylbenzene	0.1	<0.1
1,2-dibromo-3-chloropropane	0.1	<0.1
1,2,4-trichlorobenzene	0.1	<0.1
Naphthalene	0.1	<0.1
hexachlorobutadiene	0.1	<0.1
1,2,3-trichlorobenzene	0.1	<0.1

Notes:
(1) Samples were analysed by Purge & Trap & GC-MS.

(2) MAC (European Communities (Quality of Water Intended for Human Consumption) Regulations, 1988) is 100ug/l total trihalomethanes.

Regina Mc Ginn Date: 15/5/08

Regina McGinn B.Sc.,M.Sc
Analytical Chemist

☐ Interim
☑ Validated

ALcontrol Laboratories Ireland

Table Of Results

Ref Number: 08-B02819/01
Client: EPA (Monaghan)
Date of Receipt: 07/05/2008
(of first sample)

Sample Type: WATER
Location:
Client Contact: Maeve Quinn
Client Ref: 29/04/08

	Detection Method		GC FID														
	Method Detection Limit		<0.001mg/l														
UKAS Accredited [Testing Laboratory] No. 1291																	
ALcontrol Reference	**Sample Identity**	**Other ID**	**Dissolved Methane as CH4****														
			mg/l														
08-B02819-S0011	280 1296	UNKNOWN	<0.001														
08-B02819-S0012	280 1297	UNKNOWN	0.004														

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

Checked By : Dylan Halpin

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

DROGHEDA LFS

☐ Interim
☑ Validated

ALcontrol Laboratories Ireland

Table Of Results

Ref Number: 08-B02817/01
Client: EPA (Monaghan)
Date of Receipt: 07/05/2008
(of first sample)

Sample Type: WATER
Location:
Client Contact: Maeve Quinn
Client Ref: 29/04/08

	Detection Method	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS
	Method Detection Limit	n/a	<1ug/l	<1ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l
UKAS Accredited [Testing Laboratory] No. 1291																
ALcontrol Reference	Sample Identity	Other ID	Semi Volatile Organics	Atrazine**	Simazine**	Dichlorvos**	Mevinphos**	alpha-BHC**	beta-BHC**	gamma-BHC (Lindane)**	Diazinon**	Methyl parathion**	Heptachlor**	Fenitrothion**	Malathion**	Aldrin**	Parathion**
				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
08-B02817-S0011	280 1291	UNKNOWN	Done	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
08-B02817-S0012	280 1285	UNKNOWN	Done	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
08-B02817-S0013	280 1281	UNKNOWN	Done	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
08-B02817-S0014	280 1280	UNKNOWN	Done	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
08-B02817-S0015	280 1282	UNKNOWN	Done	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
08-B02817-S0016	280 1283	UNKNOWN	Done	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
08-B02817-S0017	280 1284	UNKNOWN	Done	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
08-B02817-S0018	280 1286	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0019	280 1288	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0020	280 1290	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0021	280 1289	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0022	280 1287	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0023	280 1294	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0024	280 1295	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0025	280 1292	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0026	280 1293	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Checked By : Paul Barry

Printed at 15:56 on 29/05/2008

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

☐ Interim
☑ Validated

ALcontrol Laboratories Ireland

Table Of Results

Ref Number: 08-B02817/01
Client: EPA (Monaghan)
Date of Receipt: 07/05/2008
(of first sample)

Sample Type: WATER
Location:
Client Contact: Maeve Quinn
Client Ref: 29/04/08

	Detection Method	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS
	Method Detection Limit	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<0.01ug/l	<10ng/l	<10ng/l	<10ng/l
UKAS Accredited [Testing Laboratory] No. 1291																
ALcontrol Reference	Sample Identity	Other ID	Heptachlor epoxide**	Endosulfan 1**	p,p'-DDE**	Dieldrin**	Endrin**	Endosulfan 2**	p,p'-DDD**	Ethion**	p,p'-DDT**	Endosulfan sulphate**	p,p'-Methoxychlor**	Azinphos methyl**	Naphthalene	Acenaphthylene	Acenaphthene
			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ng/l	ng/l	ng/l
08-B02817-S0011	280 1291	UNKNOWN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<10	<10
08-B02817-S0012	280 1285	UNKNOWN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<10	<10
08-B02817-S0013	280 1281	UNKNOWN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<10	<10
08-B02817-S0014	280 1280	UNKNOWN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<10	<10
08-B02817-S0015	280 1282	UNKNOWN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<10	<10
08-B02817-S0016	280 1283	UNKNOWN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<10	<10
08-B02817-S0017	280 1284	UNKNOWN	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<10	<10
08-B02817-S0018	280 1286	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0019	280 1288	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0020	280 1290	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0021	280 1289	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0022	280 1287	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0023	280 1294	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0024	280 1295	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0025	280 1292	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-B02817-S0026	280 1293	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

NDP = NO DETERMINATION POSSIBLE

Checked By : Paul Barry

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

☐ Interim
☑ Validated

ALcontrol Laboratories Ireland

Table Of Results

Ref Number: 08-B02817/01
Client: EPA (Monaghan)
Date of Receipt: 07/05/2008
(of first sample)

Sample Type: WATER
Location:
Client Contact: Maeve Quinn
Client Ref: 29/04/08

	Detection Method	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS	HPLC	SPECTRO
	Method Detection Limit	<10ng/l	<10ng/l	<10ng/l	<10ng/l	<10ng/l	<10ng/l	<10ng/l	<10ng/l	<10ng/l	<10ng/l	<10ng/l	<10ng/l	<10ng/l	<0.01mg/l	<0.05mg/l
UKAS Accredited [Testing Laboratory] No. 1291															✓	✓
ALcontrol Reference	Sample Identity	Other ID	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)+Benzo(k) fluoranthene	Benzo(a)pyrene	Indeno(123cd)pyrene	Dibenzo(ah)anthracene	Benzo(ghi)perylene	Total Aqueous 16 EPA PAHs	Total Phenols	Total Cyanide
			ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	mg/l	mg/l
08-B02817-S0011	280 1291	UNKNOWN	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.01	<0.05
08-B02817-S0012	280 1285	UNKNOWN	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.01	<0.05
08-B02817-S0013	280 1281	UNKNOWN	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.01	<0.05
08-B02817-S0014	280 1280	UNKNOWN	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.01	<0.05
08-B02817-S0015	280 1282	UNKNOWN	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.01	<0.05
08-B02817-S0016	280 1283	UNKNOWN	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.01	<0.05
08-B02817-S0017	280 1284	UNKNOWN	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.01	<0.05
08-B02817-S0018	280 1286	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.05
08-B02817-S0019	280 1288	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.05
08-B02817-S0020	280 1290	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.05
08-B02817-S0021	280 1289	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.05
08-B02817-S0022	280 1287	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.05
08-B02817-S0023	280 1294	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-
08-B02817-S0024	280 1295	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-
08-B02817-S0025	280 1292	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-
08-B02817-S0026	280 1293	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-

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

NDP = NO DETERMINATION POSSIBLE

Checked By : Paul Barry

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

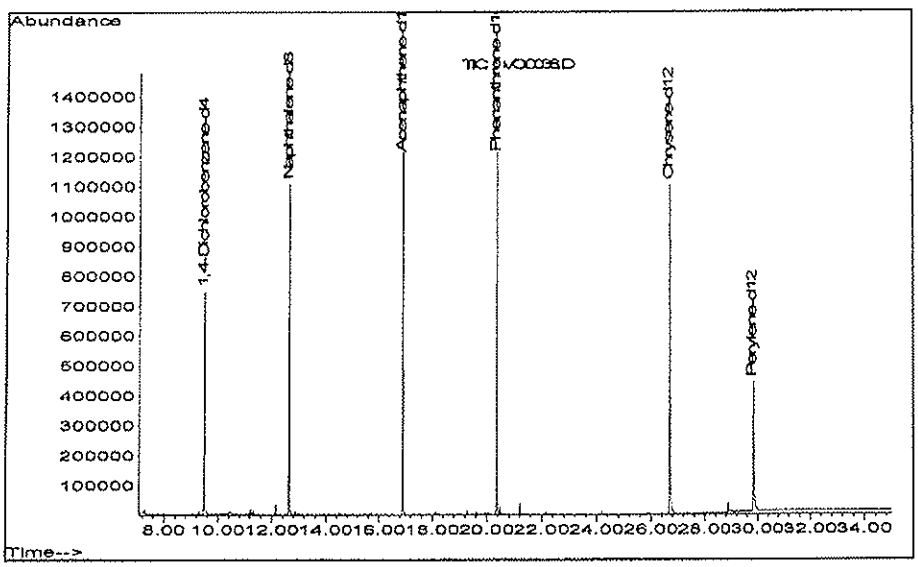
ALcontrol Geochem

Semivolatiles

Sample Identity - B02817-S0011 / 280 1291
Client / Sample matrix - EPA (Monaghan) / water
Units - µg/l

CAS No	Compound	Conc.
108-95-2	Phenol	<1
95-57-8	2-Chlorophenol	<1
95-48-7	2-Methylphenol	<1
106-44-5	4-Methylphenol	<1
88-75-5	2-Nitrophenol	<1
100-02-7	4-Nitrophenol	<1
120-83-2	2,4-Dichlorophenol	<1
105-67-9	2,4-Dimethylphenol	<1
59-50-7	4-Chloro-3-methylphenol	<1
88-06-2	2,4,6-Trichlorophenol	<1
95-95-4	2,4,5-Trichlorophenol	<1
87-86-5	Pentachlorophenol	<1
541-73-1	1,3-Dichlorobenzene	<1
106-46-7	1,4-Dichlorobenzene	<1
95-50-1	1,2-Dichlorobenzene	<1
120-82-1	1,2,4-Trichlorobenzene	<1
98-95-3	Nitrobenzene	<1
103-33-3	Azobenzene	<1
118-74-1	Hexachlorobenzene	<1
91-20-3	Naphthalene	<1
208-96-8	Acenaphthylene	<1
83-32-9	Acenaphthene	<1
86-73-7	Fluorene	<1
85-01-8	Phenanthrene	<1
120-12-7	Anthracene	<1
206-44-0	Fluoranthrene	<1
129-00-0	Pyrene	<1
56-55-3	Benzo(a)anthracene	<1
218-01-9	Chrysene	<1
205-99-2	Benzo(b)fluoranthrene	<1

CAS No	Compound	Conc.
207-08-9	Benzo(k)fluoranthrene	<1
50-32-8	Benzo(a)pyrene	<1
193-39-5	Indeno(1,2,3-cd)pyrene	<1
53-70-3	Dibenzo(a,h)anthracene	<1
191-24-2	Benzo(ghi)perylene	<1
91-58-7	2-Chloronaphthalene	<1
91-57-6	2-Methylnaphthalene	<1
86-74-8	Carbazole	<1
78-59-1	Isophorone	<1
132-64-9	Dibenzofuran	<1
131-11-3	Dimethyl phthalate	<1
84-66-2	Diethyl phthalate	<1
84-74-2	Di-n-butylphthalate	<1
117-84-0	Di-n-octylphthalate	<1
117-81-7	Bis(2-ethylhexyl)phthalate	<1
85-68-7	Butylbenzylphthalate	<1
106-47-8	4-Chloroaniline	<1
88-74-4	2-Nitroanaline	<1
99-09-2	3-Nitroaniline	<1
100-01-6	4-Nitroaniline	<1
121-14-2	2,4-Dinitrotoluene	<1
606-20-2	2,6-Dinitrotoluene	<1
111-44-4	Bis(2-chloroethyl)ether	<1
101-55-3	4-Bromophenylphenylether	<1
7005-72-3	4-Chlorophenylphenylether	<1
67-72-1	Hexachloroethane	<1
87-68-3	Hexachlorobutadiene	<1
77-47-4	Hexchlorocyclopentadiene	<1
111-91-1	Bis(2-chloroethoxy)methane	<1
621-64-7	N-nitrosodi-n-propylamine	<1



Date Extracted:___28/05/08
Authorised By: Colm O'Leary/Nicolas Sallaberry

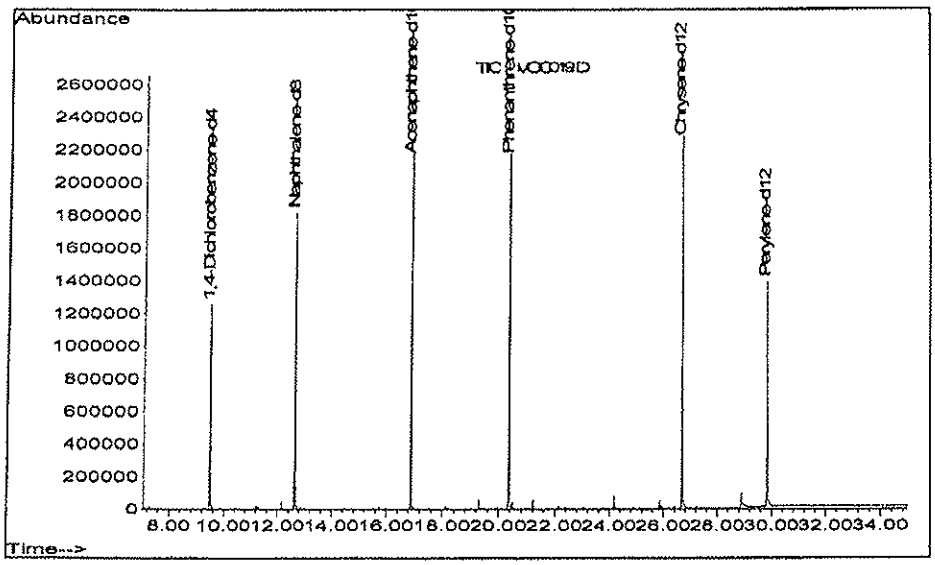
ALcontrol Geochem

Semivolatiles

Sample Identity - B02817-S00012 / 280 1285
Client / Sample matrix - EPA (Monaghan) / water
Units - µg/l

CAS No	Compound	Conc.
108-95-2	Phenol	<1
95-57-8	2-Chlorophenol	<1
95-48-7	2-Methylphenol	<1
106-44-5	4-Methylphenol	<1
88-75-5	2-Nitrophenol	<1
100-02-7	4-Nitrophenol	<1
120-83-2	2,4-Dichlorophenol	<1
105-67-9	2,4-Dimethylphenol	<1
59-50-7	4-Chloro-3-methylphenol	<1
88-06-2	2,4,6-Trichlorophenol	<1
95-95-4	2,4,5-Trichlorophenol	<1
87-86-5	Pentachlorophenol	<1
541-73-1	1,3-Dichlorobenzene	<1
106-46-7	1,4-Dichlorobenzene	<1
95-50-1	1,2-Dichlorobenzene	<1
120-82-1	1,2,4-Trichlorobenzene	<1
98-95-3	Nitrobenzene	<1
103-33-3	Azobenzene	<1
118-74-1	Hexachlorobenzene	<1
91-20-3	Naphthalene	<1
208-96-8	Acenaphthylene	<1
83-32-9	Acenaphthene	<1
86-73-7	Fluorene	<1
85-01-8	Phenanthrene	<1
120-12-7	Anthracene	<1
206-44-0	Fluoranthrene	<1
129-00-0	Pyrene	<1
56-55-3	Benzo(a)anthracene	<1
218-01-9	Chrysene	<1
205-99-2	Benzo(b)fluoranthrene	<1

CAS No	Compound	Conc.
207-08-9	Benzo(k)fluoranthrene	<1
50-32-8	Benzo(a)pyrene	<1
193-39-5	Indeno(1,2,3-cd)pyrene	<1
53-70-3	Dibenzo(a,h)anthracene	<1
191-24-2	Benzo(ghi)perylene	<1
91-58-7	2-Chloronaphthalene	<1
91-57-6	2-Methylnaphthalene	<1
86-74-8	Carbazole	<1
78-59-1	Isophorone	<1
132-64-9	Dibenzofuran	<1
131-11-3	Dimethyl phthalate	<1
84-66-2	Diethyl phthalate	<1
84-74-2	Di-n-butylphthalate	<1
117-84-0	Di-n-octylphthalate	<1
117-81-7	Bis(2-ethylhexyl)phthalate	<1
85-68-7	Butylbenzylphthalate	<1
106-47-8	4-Chloroaniline	<1
88-74-4	2-Nitroanaline	<1
99-09-2	3-Nitroaniline	<1
100-01-6	4-Nitroaniline	<1
121-14-2	2,4-Dinitrotoluene	<1
606-20-2	2,6-Dinitrotoluene	<1
111-44-4	Bis(2-chloroethyl)ether	<1
101-55-3	4-Bromophenylphenylether	<1
7005-72-3	4-Chlorophenylphenylether	<1
67-72-1	Hexachloroethane	<1
87-68-3	Hexachlorobutadiene	<1
77-47-4	Hexchlorocyclopentadiene	<1
111-91-1	Bis(2-chloroethoxy)methane	<1
621-64-7	N-nitrosodi-n-propylamine	<1



Date Extracted:___15/05/08
Authorised By: Nicolas Sallaberry / Colm O'Leary

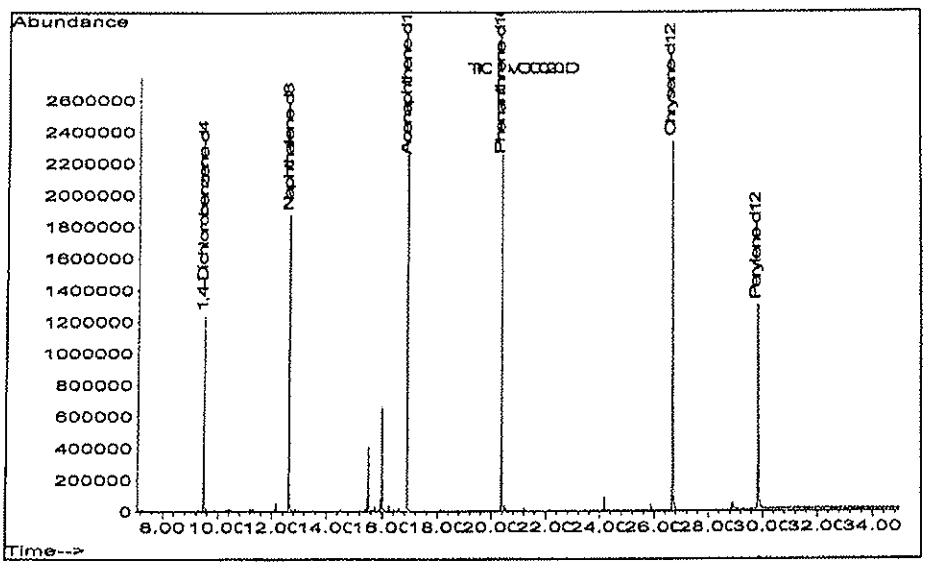
ALcontrol Geochem

Semivolatiles

Sample Identity - B02817-S00013 / 280 1281
Client / Sample matrix - EPA (Monaghan) / water
Units - µg/l

CAS No	Compound	Conc.
108-95-2	Phenol	<1
95-57-8	2-Chlorophenol	<1
95-48-7	2-Methylphenol	<1
106-44-5	4-Methylphenol	<1
88-75-5	2-Nitrophenol	<1
100-02-7	4-Nitrophenol	<1
120-83-2	2,4-Dichlorophenol	<1
105-67-9	2,4-Dimethylphenol	<1
59-50-7	4-Chloro-3-methylphenol	<1
88-06-2	2,4,6-Trichlorophenol	<1
95-95-4	2,4,5-Trichlorophenol	<1
87-86-5	Pentachlorophenol	<1
541-73-1	1,3-Dichlorobenzene	<1
106-46-7	1,4-Dichlorobenzene	<1
95-50-1	1,2-Dichlorobenzene	<1
120-82-1	1,2,4-Trichlorobenzene	<1
98-95-3	Nitrobenzene	<1
103-33-3	Azobenzene	<1
118-74-1	Hexachlorobenzene	<1
91-20-3	Naphthalene	<1
208-96-8	Acenaphthylene	<1
83-32-9	Acenaphthene	<1
86-73-7	Fluorene	<1
85-01-8	Phenanthrene	<1
120-12-7	Anthracene	<1
206-44-0	Fluoranthrene	<1
129-00-0	Pyrene	<1
56-55-3	Benzo(a)anthracene	<1
218-01-9	Chrysene	<1
205-99-2	Benzo(b)fluoranthrene	<1

CAS No	Compound	Conc.
207-08-9	Benzo(k)fluoranthrene	<1
50-32-8	Benzo(a)pyrene	<1
193-39-5	Indeno(1,2,3-cd)pyrene	<1
53-70-3	Dibenzo(a,h)anthracene	<1
191-24-2	Benzo(ghi)perylene	<1
91-58-7	2-Chloronaphthalene	<1
91-57-6	2-Methylnaphthalene	<1
86-74-8	Carbazole	<1
78-59-1	Isophorone	<1
132-64-9	Dibenzofuran	<1
131-11-3	Dimethyl phthalate	<1
84-66-2	Diethyl phthalate	<1
84-74-2	Di-n-butylphthalate	<1
117-84-0	Di-n-octylphthalate	<1
117-81-7	Bis(2-ethylhexyl)phthalate	<1
85-68-7	Butylbenzylphthalate	<1
106-47-8	4-Chloroaniline	<1
88-74-4	2-Nitroanaline	<1
99-09-2	3-Nitroaniline	<1
100-01-6	4-Nitroaniline	<1
121-14-2	2,4-Dinitrotoluene	<1
606-20-2	2,6-Dinitrotoluene	<1
111-44-4	Bis(2-chloroethyl)ether	<1
101-55-3	4-Bromophenylphenylether	<1
7005-72-3	4-Chlorophenylphenylether	<1
67-72-1	Hexachloroethane	<1
87-68-3	Hexachlorobutadiene	<1
77-47-4	Hexchlorocyclopentadiene	<1
111-91-1	Bis(2-chloroethoxy)methane	<1
621-64-7	N-nitrosodi-n-propylamine	<1



Date Extracted: 15/05/08
Authorised By: Nicolas Sallaberry / Colm O'Leary

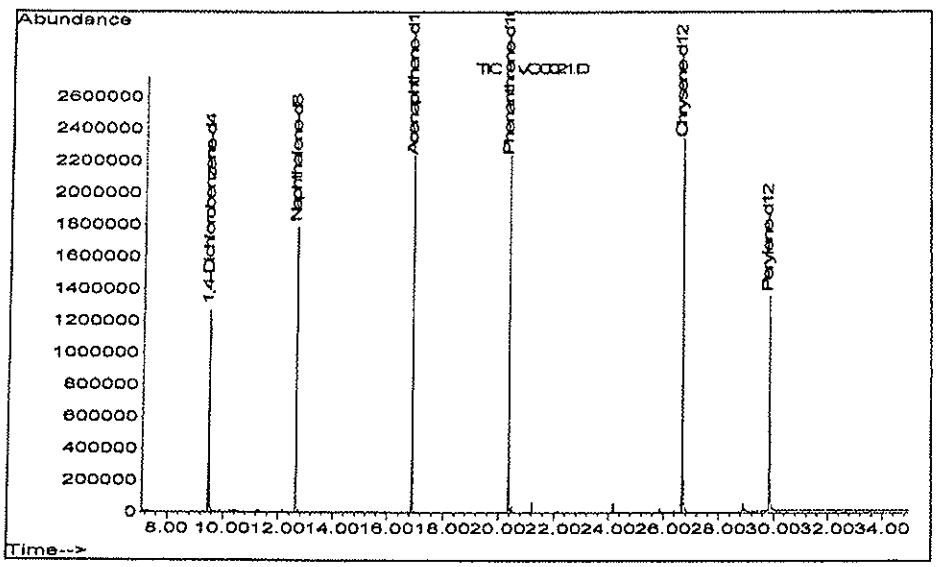
ALcontrol Geochem

Semivolatiles

Sample Identity - B02817-S00014 / 280 1280
Client / Sample matrix - EPA (Monaghan) / water
Units - µg/l

CAS No	Compound	Conc.
108-95-2	Phenol	<1
95-57-8	2-Chlorophenol	<1
95-48-7	2-Methylphenol	<1
106-44-5	4-Methylphenol	<1
88-75-5	2-Nitrophenol	<1
100-02-7	4-Nitrophenol	<1
120-83-2	2,4-Dichlorophenol	<1
105-67-9	2,4-Dimethylphenol	<1
59-50-7	4-Chloro-3-methylphenol	<1
88-06-2	2,4,6-Trichlorophenol	<1
95-95-4	2,4,5-Trichlorophenol	<1
87-86-5	Pentachlorophenol	<1
541-73-1	1,3-Dichlorobenzene	<1
106-46-7	1,4-Dichlorobenzene	<1
95-50-1	1,2-Dichlorobenzene	<1
120-82-1	1,2,4-Trichlorobenzene	<1
98-95-3	Nitrobenzene	<1
103-33-3	Azobenzene	<1
118-74-1	Hexachlorobenzene	<1
91-20-3	Naphthalene	<1
208-96-8	Acenaphthylene	<1
83-32-9	Acenaphthene	<1
86-73-7	Fluorene	<1
85-01-8	Phenanthrene	<1
120-12-7	Anthracene	<1
206-44-0	Fluoranthrene	<1
129-00-0	Pyrene	<1
56-55-3	Benzo(a)anthracene	<1
218-01-9	Chrysene	<1
205-99-2	Benzo(b)fluoranthrene	<1

CAS No	Compound	Conc.
207-08-9	Benzo(k)fluoranthrene	<1
50-32-8	Benzo(a)pyrene	<1
193-39-5	Indeno(1,2,3-cd)pyrene	<1
53-70-3	Dibenzo(a,h)anthracene	<1
191-24-2	Benzo(ghi)perylene	<1
91-58-7	2-Chloronaphthalene	<1
91-57-6	2-Methylnaphthalene	<1
86-74-8	Carbazole	<1
78-59-1	Isophorone	<1
132-64-9	Dibenzofuran	<1
131-11-3	Dimethyl phthalate	<1
84-66-2	Diethyl phthalate	<1
84-74-2	Di-n-butylphthalate	<1
117-84-0	Di-n-octylphthalate	<1
117-81-7	Bis(2-ethylhexyl)phthalate	<1
85-68-7	Butylbenzylphthalate	<1
106-47-8	4-Chloroaniline	<1
88-74-4	2-Nitroanaline	<1
99-09-2	3-Nitroaniline	<1
100-01-6	4-Nitroaniline	<1
121-14-2	2,4-Dinitrotoluene	<1
606-20-2	2,6-Dinitrotoluene	<1
111-44-4	Bis(2-chloroethyl)ether	<1
101-55-3	4-Bromophenylphenylether	<1
7005-72-3	4-Chlorophenylphenylether	<1
67-72-1	Hexachloroethane	<1
87-68-3	Hexachlorobutadiene	<1
77-47-4	Hexchlorocyclopentadiene	<1
111-91-1	Bis(2-chloroethoxy)methane	<1
621-64-7	N-nitrosodi-n-propylamine	<1



Date Extracted:___15/05/08
Authorised By: Nicolas Sallaberry / Colm O'Leary

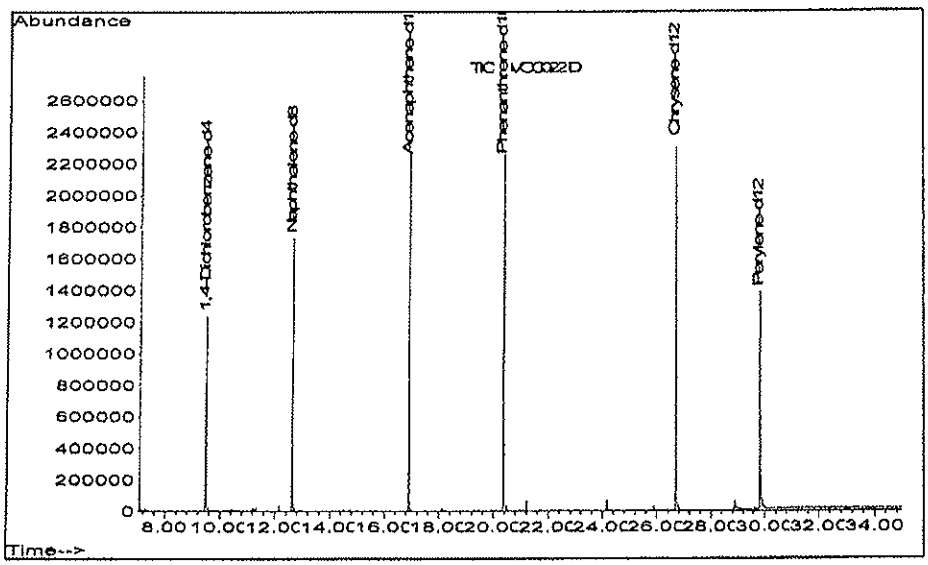
ALcontrol Geochem

Semivolatiles

Sample Identity - B02817-S00015 / 280 1282
Client / Sample matrix - EPA (Monaghan) / water
Units - µg/l

CAS No	Compound	Conc.
108-95-2	Phenol	<1
95-57-8	2-Chlorophenol	<1
95-48-7	2-Methylphenol	<1
106-44-5	4-Methylphenol	<1
88-75-5	2-Nitrophenol	<1
100-02-7	4-Nitrophenol	<1
120-83-2	2,4-Dichlorophenol	<1
105-67-9	2,4-Dimethylphenol	<1
59-50-7	4-Chloro-3-methylphenol	<1
88-06-2	2,4,6-Trichlorophenol	<1
95-95-4	2,4,5-Trichlorophenol	<1
87-86-5	Pentachlorophenol	<1
541-73-1	1,3-Dichlorobenzene	<1
106-46-7	1,4-Dichlorobenzene	<1
95-50-1	1,2-Dichlorobenzene	<1
120-82-1	1,2,4-Trichlorobenzene	<1
98-95-3	Nitrobenzene	<1
103-33-3	Azobenzene	<1
118-74-1	Hexachlorobenzene	<1
91-20-3	Naphthalene	<1
208-96-8	Acenaphthylene	<1
83-32-9	Acenaphthene	<1
86-73-7	Fluorene	<1
85-01-8	Phenanthrene	<1
120-12-7	Anthracene	<1
206-44-0	Fluoranthrene	<1
129-00-0	Pyrene	<1
56-55-3	Benzo(a)anthracene	<1
218-01-9	Chrysene	<1
205-99-2	Benzo(b)fluoranthrene	<1

CAS No	Compound	Conc.
207-08-9	Benzo(k)fluoranthrene	<1
50-32-8	Benzo(a)pyrene	<1
193-39-5	Indeno(1,2,3-cd)pyrene	<1
53-70-3	Dibenzo(a,h)anthracene	<1
191-24-2	Benzo(ghi)perylene	<1
91-58-7	2-Chloronaphthalene	<1
91-57-6	2-Methylnaphthalene	<1
86-74-8	Carbazole	<1
78-59-1	Isophorone	<1
132-64-9	Dibenzofuran	<1
131-11-3	Dimethyl phthalate	<1
84-66-2	Diethyl phthalate	<1
84-74-2	Di-n-butylphthalate	<1
117-84-0	Di-n-octylphthalate	<1
117-81-7	Bis(2-ethylhexyl)phthalate	<1
85-68-7	Butylbenzylphthalate	<1
106-47-8	4-Chloroaniline	<1
88-74-4	2-Nitroanaline	<1
99-09-2	3-Nitroaniline	<1
100-01-6	4-Nitroaniline	<1
121-14-2	2,4-Dinitrotoluene	<1
606-20-2	2,6-Dinitrotoluene	<1
111-44-4	Bis(2-chloroethyl)ether	<1
101-55-3	4-Bromophenylphenylether	<1
7005-72-3	4-Chlorophenylphenylether	<1
67-72-1	Hexachloroethane	<1
87-68-3	Hexachlorobutadiene	<1
77-47-4	Hexchlorocyclopentadiene	<1
111-91-1	Bis(2-chloroethoxy)methane	<1
621-64-7	N-nitrosodi-n-propylamine	<1



Date Extracted: 15/05/08
Authorised By: Nicolas Sallaberry / Colm O'Leary

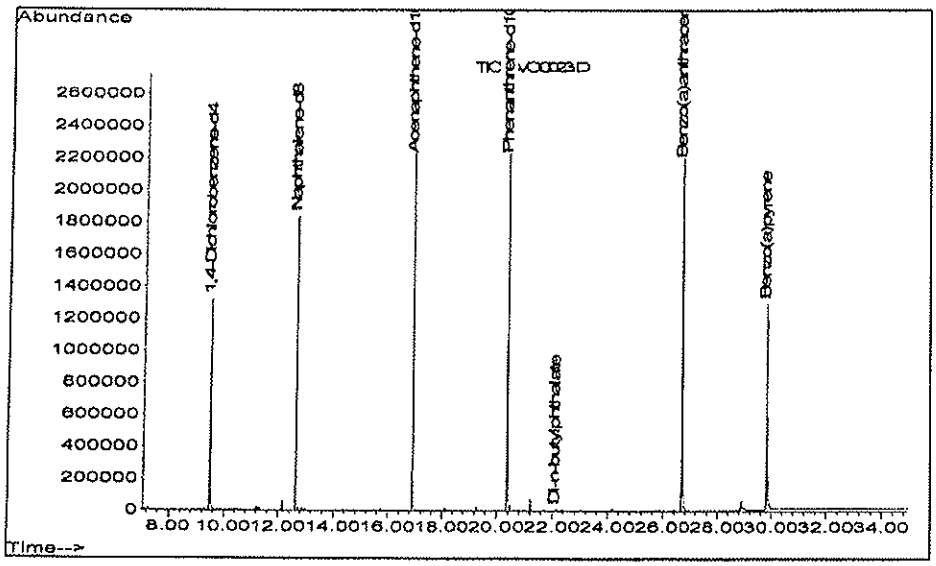
ALcontrol Geochem

Semivolatiles

Sample Identity - B02817-S00016 / 280 1283
Client / Sample matrix - EPA (Monaghan) / water
Units - µg/l

CAS No	Compound	Conc.
108-95-2	Phenol	<1
95-57-8	2-Chlorophenol	<1
95-48-7	2-Methylphenol	<1
106-44-5	4-Methylphenol	<1
88-75-5	2-Nitrophenol	<1
100-02-7	4-Nitrophenol	<1
120-83-2	2,4-Dichlorophenol	<1
105-67-9	2,4-Dimethylphenol	<1
59-50-7	4-Chloro-3-methylphenol	<1
88-06-2	2,4,6-Trichlorophenol	<1
95-95-4	2,4,5-Trichlorophenol	<1
87-86-5	Pentachlorophenol	<1
541-73-1	1,3-Dichlorobenzene	<1
106-46-7	1,4-Dichlorobenzene	<1
95-50-1	1,2-Dichlorobenzene	<1
120-82-1	1,2,4-Trichlorobenzene	<1
98-95-3	Nitrobenzene	<1
103-33-3	Azobenzene	<1
118-74-1	Hexachlorobenzene	<1
91-20-3	Naphthalene	<1
208-96-8	Acenaphthylene	<1
83-32-9	Acenaphthene	<1
86-73-7	Fluorene	<1
85-01-8	Phenanthrene	<1
120-12-7	Anthracene	<1
206-44-0	Fluoranthrene	<1
129-00-0	Pyrene	<1
56-55-3	Benzo(a)anthracene	<1
218-01-9	Chrysene	<1
205-99-2	Benzo(b)fluoranthrene	<1

CAS No	Compound	Conc.
207-08-9	Benzo(k)fluoranthrene	<1
50-32-8	Benzo(a)pyrene	<1
193-39-5	Indeno(1,2,3-cd)pyrene	<1
53-70-3	Dibenzo(a,h)anthracene	<1
191-24-2	Benzo(ghi)perylene	<1
91-58-7	2-Chloronaphthalene	<1
91-57-6	2-Methylnaphthalene	<1
86-74-8	Carbazole	<1
78-59-1	Isophorone	<1
132-64-9	Dibenzofuran	<1
131-11-3	Dimethyl phthalate	<1
84-66-2	Diethyl phthalate	<1
84-74-2	Di-n-butylphthalate	<1
117-84-0	Di-n-octylphthalate	<1
117-81-7	Bis(2-ethylhexyl)phthalate	<1
85-68-7	Butylbenzylphthalate	<1
106-47-8	4-Chloroaniline	<1
88-74-4	2-Nitroanaline	<1
99-09-2	3-Nitroaniline	<1
100-01-6	4-Nitroaniline	<1
121-14-2	2,4-Dinitrotoluene	<1
606-20-2	2,6-Dinitrotoluene	<1
111-44-4	Bis(2-chloroethyl)ether	<1
101-55-3	4-Bromophenylphenylether	<1
7005-72-3	4-Chlorophenylphenylether	<1
67-72-1	Hexachloroethane	<1
87-68-3	Hexachlorobutadiene	<1
77-47-4	Hexchlorocyclopentadiene	<1
111-91-1	Bis(2-chloroethoxy)methane	<1
621-64-7	N-nitrosodi-n-propylamine	<1



Date Extracted: 15/05/08
Authorised By: Nicolas Sallaberry / Colm O'Leary

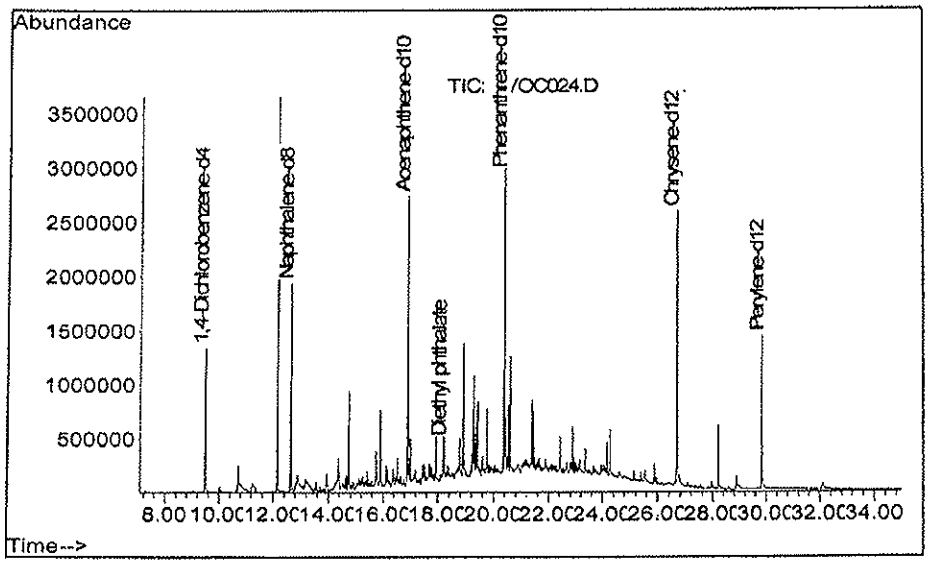
ALcontrol Geochem

Semivolatiles

Sample Identity - B02817-S00017 / 280 1284
Client / Sample matrix - EPA (Monaghan) / water
Units - µg/l

CAS No	Compound	Conc.
108-95-2	Phenol	<1
95-57-8	2-Chlorophenol	<1
95-48-7	2-Methylphenol	<1
106-44-5	4-Methylphenol	<1
88-75-5	2-Nitrophenol	<1
100-02-7	4-Nitrophenol	<1
120-83-2	2,4-Dichlorophenol	<1
105-67-9	2,4-Dimethylphenol	<1
59-50-7	4-Chloro-3-methylphenol	<1
88-06-2	2,4,6-Trichlorophenol	<1
95-95-4	2,4,5-Trichlorophenol	<1
87-86-5	Pentachlorophenol	<1
541-73-1	1,3-Dichlorobenzene	<1
106-46-7	1,4-Dichlorobenzene	<1
95-50-1	1,2-Dichlorobenzene	<1
120-82-1	1,2,4-Trichlorobenzene	<1
98-95-3	Nitrobenzene	<1
103-33-3	Azobenzene	<1
118-74-1	Hexachlorobenzene	<1
91-20-3	Naphthalene	<1
208-96-8	Acenaphthylene	<1
83-32-9	Acenaphthene	<1
86-73-7	Fluorene	<1
85-01-8	Phenanthrene	<1
120-12-7	Anthracene	<1
206-44-0	Fluoranthrene	<1
129-00-0	Pyrene	<1
56-55-3	Benzo(a)anthracene	<1
218-01-9	Chrysene	<1
205-99-2	Benzo(b)fluoranthrene	<1

CAS No	Compound	Conc.
207-08-9	Benzo(k)fluoranthrene	<1
50-32-8	Benzo(a)pyrene	<1
193-39-5	Indeno(1,2,3-cd)pyrene	<1
53-70-3	Dibenzo(a,h)anthracene	<1
191-24-2	Benzo(ghi)perylene	<1
91-58-7	2-Chloronaphthalene	<1
91-57-6	2-Methylnaphthalene	<1
86-74-8	Carbazole	<1
78-59-1	Isophorone	<1
132-64-9	Dibenzofuran	<1
131-11-3	Dimethyl phthalate	<1
84-66-2	Diethyl phthalate	3
84-74-2	Di-n-butylphthalate	<1
117-84-0	Di-n-octylphthalate	<1
117-81-7	Bis(2-ethylhexyl)phthalate	<1
85-68-7	Butylbenzylphthalate	<1
106-47-8	4-Chloroaniline	<1
88-74-4	2-Nitroanaline	<1
99-09-2	3-Nitroaniline	<1
100-01-6	4-Nitroaniline	<1
121-14-2	2,4-Dinitrotoluene	<1
606-20-2	2,6-Dinitrotoluene	<1
111-44-4	Bis(2-chloroethyl)ether	<1
101-55-3	4-Bromophenylphenylether	<1
7005-72-3	4-Chlorophenylphenylether	<1
67-72-1	Hexachloroethane	<1
87-68-3	Hexachlorobutadiene	<1
77-47-4	Hexchlorocyclopentadiene	<1
111-91-1	Bis(2-chloroethoxy)methane	<1
621-64-7	N-nitrosodi-n-propylamine	<1



Date Extracted: 15/05/08
Authorised By: Nicolas Sallaberry / Colm O'Leary

APPENDIX D

SURFACE WATER RESULTS

Drogheda Landfill Site Groundwater Quality

Monitoring Point:		SW1											
Date Collected		**24-Jan-06**	**25-Apr-06**	**25-Jul-06**	**09-Oct-06**	**30-Jan-07**	**17-Apr-07**	**31-Jul-07**	**24-Oct-07**	**22-Jan-08**	**29-Apr-08**	**31-Jul-08**	**30-Oct-08**
Alkalinity	mg/l CaCO3		101				158				138		
Ammonia	mg/l N	0.19	0.15	<0.03	0.04	0.49	0.29	<0.03	0.11	0.1	<0.03	0.04	<0.03
Barium	ug/l	67.9	67.6	<50	<50	66	71	<50	57.3	<50	68.7	<50	<50
B.O.D.	mg/l O2	<1.5	1.5	4.8	<1.5	<1.5	1.5	<1.5	<1.5	<1.5	1.5	<1.5	<2.0
Boron	ug/l												
Cadmium	µg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Calcium	mg/l Ca		42.43				51.87				53.12		
C.O.D.	mg/l O2	19	22	22	5	10	48	48	49	11	18	17	31
Chloride	mg/l Cl	136	133	62	78	137	140	73	118	69	125	74	117
Chromium	µg/l	4.4	3.2	<1	<1	2.9	<1	<1	<1	<1	<1	<1	<1
Conductivity	µS/cm @ 25	786	785	641	648	764	818	618	704	644	736	628	589
Copper	µg/l		6.7				5.1				3.4		
Cyanide	mg/l												
Depth	m												
D.O.	% Saturation	98	116	108	90	92	103	105	91	88	115	101	96
Faecal Coliforms	No/100 ml												
Fluoride	mg/l												
Iron	µg/l	38	95.8	73.1	73.9	121.2	118.6	102.7	87.8	<50	<50	79.3	<50
Lead	µg/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Magnesium	mg/l Mg		12.5				13.08				12.43		
Manganese	µg/l		31.7				21.7				6.7		
Mercury	µg/l		0.6				<0.10				<0.10		
Nickel	µg/l	8.2	7.8	2.5	4.1	9	11	2.7	7.6	2.5	7.3	2.5	5.8
Nitrite	mg/l N	0.022	0.011	0.006	<0.003	0.023	0.024	<0.003	0.007	0.011	0.01	0.004	<0.003
o-Phosphate	mg/l P	<0.02	<0.02	0.6	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	nm
pH		7.9	8.5	8.5	8.3	8.1	8.2	8.8	7.9	8.1	8.5	8.6	8.3
Phenol	mg/l	<0.001	0.086	0.009	0.048	0.067	<0.001	<0.01	<0.01	0.03	<0.01	<0.01	0.06
Potassium	mg/l	14.46	14.58	38.74	36.16	12.9	14.68	36.04	14.53	39.48	13.89	31.25	11.6
Residue on Evaporation	mg/l												
Sodium	mg/l		77.66				76				61.6		
Sulphate	mg/l SO4		35.7				41	21.4			44.8		
Temp	°C	6.5	13.4	26	14.4	6.8	15.6	14	11	8	13.2	18	7.4
Time sampled			12.3	13.45	13.1	13.15	13.1		13.3	nt	13	12.45	12.4
Total coliforms	No/ 100 ml												
T.O.C.	mg/l												
T.O.N	mg/l N	0.44	0.51	<0.05	<0.05	0.72	1.22	<0.05	<0.05	0.16	0.79	<0.05	<0.05
Total Suspended Solids	mg/l	<5	<5	6	<5	<5	9	<5	<5	6	<5	<5	
Zinc	µg/l		5.2				<1				<1		

	Drogheda Landfill Site Groundwater Quality												
Monitoring Point:		SW2											
Date Collected		24-Jan-06	25-Apr-06	25-Jul-06	19-Oct-06	30-Jan-07	17-Apr-07	31-Jul-07	24-Oct-07	22-Jan-08	29-Apr-08	31-Jul-08	30-Oct-08
Alkalinity	mg/l CaCO3		138				144				141		
Ammonia	mg/l N	<0.03	<0.03	0.19	0.04	0.5	<0.03		0.1	0.13	0.03	0.06	0.13
Barium	ug/l	<50	<50	54.2	76.1	64.6	<50		58.3	80.5	71.5	<50	<50
B.O.D.	mg/l O2	2	2	1.6	<1.5	<1.5	<1.5		<1.5	<1.5	<1.5	2.9	<2.0
Boron	ug/l												
Cadmium	µg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10
Calcium	mg/l Ca		41.87				38.55				52.24		
C.O.D.	mg/l O2	20	22	25	32	9	11		31	21	11	19	54
Chloride	mg/l Cl	76	78	161	153	133	73		134	124	125	131	68
Chromium	µg/l	4.4	3.5	<1	<1	2.7	<1		<1	<1	<1	<1	<1
Conductivity	µS/cm @ 25	688	678	818	761	777	657		715	731	729	610	626
Copper	µg/l		3.1				<1				3.8		
Cyanide	mg/l												
Depth	m												
D.O.	% Saturation	109	115	111	101	91	105		86	105	112	101	74
Faecal Coliforms	No/100 ml												
Fluoride	mg/l												
Iron	µg/l	<50	149.6	76.2	617.9	111	83.8		76	95.5	59.5	<50	63.1
Lead	µg/l	<1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<1
Magnesium	mg/l Mg		21.2				20.29				12.07		
Manganese	µg/l		18.8				8.7				8.8		
Mercury	µg/l		<0.10				<0.10				<0.10		
Nickel	µg/l	3.2	3.2	8.7	8.1	8.8	3.9		7.5	7.9	7.4	6.8	<1
Nitrite	mg/l N	0.004	<0.003	0.016	0.004	0.022	0.004		0.007	0.016	0.01	0.004	<0.003
o-Phosphate	mg/l P	0.03	<0.02	0.05	<0.02	<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	nm
pH		8.2	8.7	8.4	8.7	8.2	8.6		8.2	8.1	8.4	9.3	8.1
Phenol	mg/l	0.024	0.107	0.019	0.006	<0.001	<0.001		<0.01	0.02	<0.01	<0.01	0.03
Potassium	mg/l	37.67	36.61	17.48	14.15	12.88	35.07		14.75	15.22	13.73	12.08	35.5
Residue on Evaporation	mg/l												
Sodium	mg/l		29.9				29.88				61.27		
Sulphate	mg/l SO4		74				70				44.7		
Temp	°C	6.6	12.4	27.6	14.3	6.3	15.2		11.4	8	13.3	19.1	9.1
Time sampled			14.3	13.45	12.55	13.25	13.25		13.1	nt	13.5	12.15	13.1
Total coliforms	No/ 100 ml												
T.O.C.	mg/l												
T.O.N	mg/l N	0.07	<0.05	0.1	<0.05	0.72	<0.05		<0.05	1.07	0.78	<0.05	<0.05
Total Suspended Solids	mg/l	<5	<5	<5	5	<5	<5		<5	12	8	<5	<5
Zinc	µg/l		5.9				<1				<1		

Drogheda Landfill Site Groundwater Quality

Monitoring Point:		SW3											
Date Collected		**24-Jan-06**	**25-Apr-06**	**25-Jul-06**	**19-Oct-06**	**30-Jan-07**	**17-Apr-07**	**31-Jul-07**	**24-Oct-07**	**22-Jan-08**	**29-Apr-08**	**31-Jul-08**	**30-Oct-08**
Alkalinity	mg/l CaCO3		122				158				143		
Ammonia	mg/l N	0.19	0.1		0.03	0.04	0.03	0.12	<0.03	0.13	0.04	0.04	<0.03
Barium	ug/l	63.9	68.4		73.9	<50	68.5	53.8	<50	79.5	<50	<50	<50
B.O.D.	mg/l O2	2.7	<1.5		1.8	<1.5	<1.5	2.5	<1.5	<1.5	<1.5	1.6	<2.0
Boron	ug/l												
Cadmium	µg/l	<0.10	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Calcium	mg/l Ca		41.23				51.68				39.93		
C.O.D.	mg/l O2	21	67		31	23	32	50	17	19	<10	20	42
Chloride	mg/l Cl	141	132		149	74	139	135	74	124	65	132	117
Chromium	µg/l	4.4	4		<1	2.2	<1	<1	<1	<1	<1	<1	<1
Conductivity	µS/cm @ 25	779	784		758	658	815	698	606	732	628	613	588
Copper	µg/l		5.9				4.2				<1		
Cyanide	mg/l												
Depth	m												
D.O.	% Saturation	110	114		101	92	100	105	82	105	106	99	97
Faecal Coliforms	No/100 ml												
Fluoride	mg/l												
Iron	µg/l	<50	116.3		253.6	66.1	116.3	126.9	59.3	76.1	<50	64.9	<50
Lead	µg/l	<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1
Magnesium	mg/l Mg		15.31				13.15				19.59		
Manganese	µg/l		39.7				16.7				19.4		
Mercury	µg/l		0.9				<0.10				<0.10		
Nickel	µg/l	8.1	8.1		7.8	2.5	11.1	8.7	<1	7.8	2.1	7.3	5.9
Nitrite	mg/l N	0.017	0.011		<0.003	0.01	0.023	0.011	<0.003	0.014	0.003	0.003	<0.003
o-Phosphate	mg/l P	<0.02	<0.02		<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	nm
pH		8.4	8.5		8.8	8.3	8.3	8.6	8.3	8.1	8.5	9.1	8.5
Phenol	mg/l	0.033	0.069		0.019	0.083	<0.001	<0.01	<0.01	0.02	<0.01	<0.01	0.03
Potassium	mg/l	14.04	14.58		13.84	36.36	15.09	14.64	35.19	15.12	35.58	12.41	11.75
Residue on Evaporation	mg/l												
Sodium	mg/l		75.6				77.13				26.01		
Sulphate	mg/l SO4		36.3				41.5				64.5		
Temp	°C	7	13.3		14.3	7.3	16.5	21	12.5	8	13.1	19	7.3
Time sampled			13.15		13.15	13.15	13.3	14.3	13.25	nt	13.35	12.45	12.45
Total coliforms	No/ 100 ml												
T.O.C.	mg/l												
T.O.N	mg/l N	0.45	0.51		<0.05	0.28	1.21	0.06	<0.05	1.05	<0.05	<0.05	<0.05
Total Suspended Solids	mg/l	<5	7		<5	<5	<5	12	<5	<5	<5	<5	<5
Zinc	µg/l		4.7				<1				<1		

	Drogheda Landfill Site Groundwater Quality												
Monitoring Point:		SW4											
Date Collected		24-Jan-06	25-Apr-06	25-Jul-06	19-Oct-06	30-Jan-07	17-Apr-07	31-Jul-07	24-Oct-07	22-Jan-08	29-Apr-08	31-Jul-08	30-Oct-08
Alkalinity	mg/l CaCO3										176		
Ammonia	mg/l N										<0.03		0.04
Barium	ug/l										<50		<50
B.O.D.	mg/l O2										<1.5		<2.0
Boron	ug/l												
Cadmium	µg/l										<0.10		<0.10
Calcium	mg/l Ca										85.92		
C.O.D.	mg/l O2										<10		31
Chloride	mg/l Cl										10		10
Chromium	µg/l										<1		2.4
Conductivity	µS/cm @ 25										548		711
Copper	µg/l										4.2		
Cyanide	mg/l												
Depth	m												
D.O.	% Saturation										92		76
Faecal Coliforms	No/100 ml												
Fluoride	mg/l												
Iron	µg/l										84.1		135.5
Lead	µg/l										<1		<1
Magnesium	mg/l Mg										6.54		
Manganese	µg/l										2.5		
Mercury	µg/l										<0.10		
Nickel	µg/l										<1		<1
Nitrite	mg/l N										0.01		0.006
o-Phosphate	mg/l P										0.02		nm
pH											8.3		8.1
Phenol	mg/l										<0.01		0.03
Potassium	mg/l										11.65		7.09
Residue on Evaporation	mg/l												
Sodium	mg/l										11.96		
Sulphate	mg/l SO4										77.4		
Temp	°C										10		8.8
Time sampled											14.05		13
Total coliforms	No/ 100 ml												
T.O.C.	mg/l												
T.O.N	mg/l N										4.84		1.68
Total Suspended Solids	mg/l										5		<5
Zinc	µg/l										<1		

Drogheda Landfill Site Groundwater Quality

Monitoring Point:		SW5											
Date Collected		24-Jan-06	25-Apr-06	25-Jul-06	19-Oct-06	30-Jan-07	17-Apr-07	31-Jul-07	24-Oct-07	22-Jan-08	29-Apr-08	31-Jul-08	30-Oct-08
Alkalinity	mg/l CaCO3										216		
Ammonia	mg/l N										0.03		<0.03
Barium	ug/l										<50		<50
B.O.D.	mg/l O2										<1.5		<2.0
Boron	ug/l												
Cadmium	µg/l										<0.10		<0.10
Calcium	mg/l Ca										94.56		
C.O.D.	mg/l O2										<10		57
Chloride	mg/l Cl										9		10
Chromium	µg/l										<1		<1
Conductivity	µS/cm @ 25										541		791
Copper	µg/l										4		
Cyanide	mg/l												
Depth	m												
D.O.	% Saturation										89		80
Faecal Coliforms	No/100 ml												
Fluoride	mg/l												
Iron	µg/l										68		152.7
Lead	µg/l										<1		<1
Magnesium	mg/l Mg										6.07		
Manganese	µg/l										<1		
Mercury	µg/l										<0.10		
Nickel	µg/l										<1		<1
Nitrite	mg/l N										0.006		<0.003
o-Phosphate	mg/l P										0.02		nm
pH											8.3		7.9
Phenol	mg/l										<0.01		0.03
Potassium	mg/l										8.88		3.1
Residue on Evaporation	mg/l												
Sodium	mg/l										10.85		
Sulphate	mg/l SO4										55.3		
Temp	°C										10.2		8.9
Time sampled											14.2		13.1
Total coliforms	No/ 100 ml												
T.O.C.	mg/l												
T.O.N	mg/l N										2.58		1
Total Suspended Solids	mg/l										9		<5
Zinc	µg/l										<1		

Environmental Protection Agency, Regional Inspectorate, Monaghan

Results of VOC Analysis

A Report To: Office of Environmental Enforcement **VOC-2008-35**

Laboratory Reference Number	2801291
Sampling Location	Drogheda Corporation, Drogheda Landfill Site.
	DA_LFS_SW_Annual SW1
Date Sampled & Sampled By	29/04/08 G Crawley
Date Reported	15/05/08

VOC	Detection Limit (µg/l)	Result (µg/l)
1,1-dichloroethene	0.1	<0.1
Dichloromethane	0.1	<0.1
trans-1,2-dichloroethene	0.1	<0.1
1,1-dichloroethene	0.1	<0.1
2,2-dichloropropane	0.1	<0.1
cis-1,2-dichloroethene	0.1	<0.1
bromochloromethane	0.1	<0.1
Chloroform	0.1	<0.1
1,1,1-trichloroethane	0.1	<0.1
carbon tetrachloride	0.1	<0.1
1,1-dichloropropene	0.1	<0.1
Benzene	0.1	<0.1
1,2-dichloroethane	0.1	<0.1
trichloroethene	0.1	<0.1
1,2-dichloropropane	0.1	<0.1
dibromomethane	0.1	<0.1
bromodichloromethane	0.1	<0.1
cis-1,3-dichloropropene	0.1	<0.1
Toluene	0.1	<0.1
trans-1,3-dichloropropene	0.1	<0.1
1,1,2,-trichloroethane	0.1	<0.1
tetrachloroethene	0.1	<0.1
1,3-dichloropropane	0.1	<0.1
dibromochloromethane	0.1	<0.1
1,2-dibromoethane	0.1	<0.1
chlorobenzene	0.1	<0.1
1,1,1,2-tetrachloroethane	0.1	<0.1
ethylbenzene	0.1	<0.1
m,p-xylene	0.1	<0.1
o-xylene	0.1	<0.1
styrene	0.1	<0.1
bromoform	0.1	<0.1
isopropylbenzene	0.1	<0.1

Environmental Protection Agency, Regional Inspectorate, Monaghan

A Report To: Office of Environmental Enforcement **VOC-2008-35**

VOC	Detection Limit (µg/l)	Result (µg/l)
bromobenzene	0.1	<0.1
1,1,2,2-tetrachloroethane	0.1	<0.1
1,2,3-trichloropropane	0.1	<0.1
n-propylbenzene	0.1	<0.1
2-chlorotoluene	0.1	<0.1
4-chlorotoluene	0.1	<0.1
1,3,5-trimethylbenzene	0.1	<0.1
t-butylbenzene	0.1	<0.1
1,2,4-trimethylbenzene	0.1	<0.1
sec-butylbenzene	0.1	<0.1
1,3-dichlorobenzene	0.1	<0.1
1,4-dichlorobenzene	0.1	<0.1
p-isopropyltoluene	0.1	<0.1
1,2-dichlorobenzene	0.1	<0.1
n-butylbenzene	0.1	<0.1
1,2-dibromo-3-chloropropane	0.1	<0.1
1,2,4-trichlorobenzene	0.1	<0.1
Naphthalene	0.1	<0.1
hexachlorobutadiene	0.1	<0.1
1,2,3-trichlorobenzene	0.1	<0.1

Notes:
(1) Samples were analysed by Purge & Trap & GC-MS.

(2) MAC (European Communities (Quality of Water Intended for Human Consumption) Regulations, 1988) is 100ug/l total trihalomethanes.

Regina Mc Ginn Date: 15/5/08

Regina McGinn B.Sc.,M.Sc
Analytical Chemist

APPENDIX E

LANDFILL GAS RESULTS

16th January 2008

Station	CH4	CO2	O2
BH3A	0.1	0.7	19
BH6A	0	0.1	21.2
BH8A	0.1	0.9	20.2
BH9A	0.1	0.4	20.7
BH10A	0.1	0.1	21.1
BH11A	0.1	0.1	21.1
1G7	0.1	0.1	21.0
1G6	0.1	0.1	20.8
BH7	0.1	0.1	20.1
BH5A	0.1	2.3	16.0
BH4A	0.1	2.0	6.3
BH2A	0.1	0.3	20
BH1A	0.1	1.7	13.9
LG7	0.1	0.1	21.0
LG2	0.1	0.1	20.6
LG3	0.1	0.3	20.4
LG5	0.2	0.1	19.4
LG6	0.1	1.3	19.6

13th February 2008

Station	CH4	CO2	02
BH1A	0.1	1.4	15.4
BH2A	0.1	0.1	20.3
BH3A	0.1	0.4	19.7
BH4A	0.1	1.5	13.7
BH5A	0.1	0.1	20.4
BH6A	0.1	0.1	20.0
BH8A	0.1	1.0	19.3
BH10A	0.2	0.1	20.1
BH11A	0.1	0.1	20.3
LG1	0.2	0.1	20.6
LG2	0.2	0.1	20.6
LG3	0.1	3.1	17.7
LG4	0.1	1.5	19.1
LG5	0.1	0.1	20.3
LG6	0.2	0.1	20.5
LG7	0.2	0.1	20.2

27th March 2008

Station	CH4	CO2	O2
BH1A	0.3	0.7	18.7
BH2A	0.0	0.1	21.2
BH3A	0.1	1.5	18.8
BH4A	0.1	0.4	20.2
BH4	0.0	0.1	21.0
BH5A	0.1	1.2	18.7
BH6A	0.2	0.1	20.7
BH8A	0.1	1.1	19.9
BH9A	0.0	0.4	20.6
BH10	0.1	0.0	20.8
BH11A	0.0	0.1	20.8
LG1	0.1	0.1	21.2
LG2	0.1	0.1	21.1
LG3	0.1	0.7	20.2
LG4	0.1	0.7	20.2
LG5	0.1	1.1	20.4
LG6	0.2	0.0	20.9
LG7	0.0	0.1	20.9

29th April 2008

Station	CH4	CO2	O2
BH1A	0.1	0.2	20.2
BH2A	0.1	0.1	20.7
BH3A	0.1	1.9	17.4
BH4A	0.1	0.0	20.7
BH5A	0.1	1.3	18.6
BH6A	0.1	0.0	20.5
BH7A	0.1	0.1	20.6
BH8A	0.1	0.8	19.7
BH9A	0.1	0.1	20.5
BH10	0.1	0.0	20.5
BH11A	0.1	0.1	20.6
LG1	0.1	0.1	20.7
LG2	0.1	1.2	19.7
LG3	0.1	4.3	14.0
LG4	0.1	3.2	15.9
LG5	0.1	4.4	15.8
LG6	0.1	0.1	20.6
LG7	0.1	0.0	20.6

16th June 2008

Station	CH4	CO2	O2
BH1A	0.0	0.5	20.4
BH2A	0.0	0.2	21.1
BH3A	0.0	1.7	17.8
BH4A	0.0	0.2	21.0
BH5A	0.0	0.9	19.5
BH6A	0.0	0.0	20.7
BH7A	0.0	0.3	20.9
BH8A	0.0.	0.0	20.7
BH9A	0.0	0.2	20.6
BH10	0.0	0.0	20.7
BH11A	0.0	0.0	20.7
LG4	0.0	1.1	19.7
LG5	0.0	1.1	19.1
LG6	0.0	0.1	20.7
LG7	0.0	0.1	20.7

30th July 2008

Station	CH4	CO2	O2
BH1A	0.0	0.1	20.4
BH2A	0.0	0.1	20.6
BH3A	0.0	0.0	20.6
BH4A	0.0	0.0	20.6
BH5A	0.0	0.3	20.1
BH6A	0.0	0.0	20.6
BH7A	0.0	0.0	20.6
BH8A	0.0	0.0	20.6
BH9A	0.0	0.2	20.5
BH10	0.0	0.0	20.6
BH11A	0.0	0.0	20.5
LG1	0.0	0.1	21.2
LG2	0.0	0.1	21.1
LG3	0.0	0.7	20.2
LG4	0.0	0.8	20.4
LG5	0.0	1.8	19.5
LG6	0.0	0.1	20.8
LG7	0.0	0.1	20.9

28th August 2008

Station	CH4	CO2	O2
BH1A	0.0	0.2	20.1
BH2A	0.0	0.0	20.5
BH3A	0.0	0.3	19.9
BH4A	0.1	0.1	20.5
BH5A	0.0	0.3	20.1
BH6A	0.0	0.0	20.8
BH7A	0.0	0.0	20.6
BH8A	0.1	0.0	20.8
BH9A	0.0	0.0	20.8
BH10	0.1	0.0	20.8
BH11A	0.0	0.0	20.7
LG1	0.0	0.1	20.6
LG2	0.0	0.1	30.5
LG3	0.0	4.5	15.4
LG4	0.1	0.8	19.5
LG5	0.0	1.3	19.5
LG6	0.0	0.1	20.6
LG7	0.0	0.1	20.5

22nd September 2008

Station	CH4	CO2	O2
BH1A	0.1	0.3	20.1
BH2A	0.1	0.3	20.7
BH3A	0.0	0.9	17.8
BH4A	0.0	0.3	20.3
BH5A	0.1	0.3	20.8
BH6A	0.0	0.0	20.7
BH7A	0.0	0.3	20.3
BH8A	0.0	0.0	20.6
BH9A	0.0	0.2	20.4
BH10	0.0	0.1	20.7
BH11A	0.1	0.0	20.9
LG1	0.0	0.0	21.0
LG2	0.0	0.2	21.0
LG3	0.1	0.7	20.6
LG4	0.0	0.8	20.4
LG5	0.0	3.6	17.2
LG6	0.0	0.1	20.5
LG7	0.0	0.0	20.6

13th October 2008

Station	CH4	CO2	O2
BH1A	0.0	1.0	17.2
BH2A	0.0	0.2	20.7
BH3A	0.0	2.6	11.7
BH4A	0.0	0.8	19.2
BH5A	0.1	0.3	20.8
BH6A	0.0	0.0	20.7
BH7A	0.0	0.3	20.3
BH8A	0.0	0.0	20.7
BH9A	0.0	0.6	19.6
BH10	0.0	0.1	20.6
BH11A	0.0	0.1	20.6
LG1	0.0	0.1	20.8
LG2	0.0	0.8	20.6
LG3	0.0	1.4	19.9
LG4	0.0	2.4	18.1
LG5	0.0	1.2	19.9
LG6	0.0	0.2	20.5
LG7	0.1	0.2	20.6

26th November 2008

Station	CH4	CO2	O2
BH1A	0.0	0.1	20.0
BH2A	0.0	0.0	20.7
BH3A	0.0	0.3	20.5
BH4A	0.0	0.0	20.6
BH5A	0.0	0.5	19.6
BH6A	0.0	0.0	20.9
BH7A	0.0	0.2	20.7
BH8A	0.0	0.0	20.7
BH9A	0.0	0.5	20.2
BH10	0.0	0.1	21.0
BH11A	0.0	0.1	20.9
LG1	0.0	0.0	20.7
LG2	0.0	0.2	20.5
LG3	0.0	0.2	20.5
LG4	0.0	1.3	19.1
LG5	0.0	6.9	13.2
LG6	0.0	0.1	20.6
LG7	0.0	0.0	20.6

APPENDIX F

WATER BALANCE CALCULATION

WATER BALANCE CALCULATION - Drogheda

Year 2008	Active Phase	Active Area A(m^2)	Waste Input t/year	Active Area Infiltration R(A)(m^3)	Liquid Waste LW(m^3)	Temporary Restored Area	Temporary Restored area infiltration IRCA(m^3)	Permanently Restored Area	Restored area infiltration IRCA(m^3)	Total Water	Cumulative Water	Absorptive Capacity aW(m^3)	Cumulative Absorptive Capacity	Cumulative leachate	Leachate produced Lo(m^3)
Jan	Closed	0	0	97.40	0	3,000	73	110000	1071	1144	1144	0	0	1144	1144
Feb	Closed	0	0	14.70	0	3,000	11	110000	162	173	1317	0	0	1317	173
Mar	Closed	0	0	101.80	0	3,000	76	110000	1120	1196	2513	0	0	2513	1196
Apr	Closed	0	0	27.60	0	3,000	21	110000	304	324	2838	0	0	2838	324
May	Closed	0	0	32.70	0	3,000	25	110000	360	384	3222	0	0	3222	384
Jun	Closed	0	0	76.40	0	3,000	57	110000	840	898	4120	0	0	4120	898
Jul	Closed	0	0	111.40	0	3,000	84	110000	1225	1309	5429	0	0	5429	1309
Aug	Closed	0	0	189.90	0	3,000	142	110000	2089	2231	7660	0	0	7660	2231
Sep	Closed	0	0	114.10	0	3,000	86	110000	1255	1341	9001	0	0	9001	1341
Oct	Closed	0	0	92.50	0	3,000	69	110000	1018	1087	10087	0	0	10087	1087
Nov	Closed	0	0	44.70	0	3,000	34	110000	492	525	10613	0	0	10613	525
Dec	Closed	0	0	39.40	0	3,000	30	110000	433	463	11076	0	0	11076	463
Total				943											11076

Assumptions

1. IRCA =	Temporary		25%	% of annual rainfall
	Permanently	(2-10%)	10%	% of annual rainfall
2. Absorptive Capacity = Waste density of 0.8 tonnes/m^3. Estimated absorptive capacity			0.06	t/m^3
3. Rainfall data (R) taken from Dublin Airport (=			942.6	mm
4.Capping Area			110,000	m^2
Future permanent cap area			3,000	m^2

APPENDIX G

PRTR REPORTING

Environmental Protection Agency

AER Returns Worksheet

Version 1.1.03

REFERENCE YEAR	2008

1. FACILITY IDENTIFICATION

Parent Company Name	Drogheda Borough Council
Facility Name	Drogheda Landfill
PRTR Identification Number	W0033
Licence Number	W0033-01

Waste or IPPC Classes of Activity

No.	class_name
3.1	Deposit on, in or under land (including landfill).
3.13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
4.2	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
4.3	Recycling or reclamation of metals and metal compounds.
4.4	Recycling or reclamation of other inorganic materials.
4.10	The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.
4.11	Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
4.13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

Address 1	Collon Road
Address 2	Mell
Address 3	Drogheda
Address 4	Co. Louth
Country	Ireland
Coordinates of Location	487200.000
River Basin District	IE-Eastern
NACE Code	382
Main Economic Activity	Waste treatment and disposal
AER Returns Contact Name	Paddy Rogers
AER Returns Contact Email Address	patrick.rogers@droghedaboro.ie
AER Returns Contact Position	Assistant Engineer
AER Returns Contact Telephone Number	041 9876163
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	
Production Volume	10000.0
Production Volume Units	Tonnes
Number of Installations	2
Number of Operating Hours in Year	8760
Number of Employees	5
User Feedback/Comments	Landfill site is closed. Enclosed flare on site. Methane stripper. CA site in operation. 5 employees on CA site.
Web Address	

2. PRTR CLASS ACTIVITIES

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

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

Is it applicable?	No
Have you been granted an exemption ?	No
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4.1 RELEASES TO AIR

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR								
POLLUTANT		METHOD			QUANTITY			
			Method Used		Total Landfill Gas Emission Point			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
01	Methane (CH4)	C	SSC	GasSim Lite	0.0	0.0	0.0	0.0
03	Carbon dioxide (CO2)	C	SSC	GasSim Lite	169000.0	169000.0	0.0	0.0
02	Carbon monoxide (CO)	C	SSC	GasSim Lite	4520000.0	4520000.0	0.0	0.0
86	Particulate matter (PM10)	C	SSC	GasSim Lite	13800.0	13800.0	0.0	0.0
11	Sulphur oxides (SOx/SO2)	C	SSC	GasSim Lite	0.0	0.0	0.0	0.0
04	Hydro-fluorocarbons (HFCs)	C	SSC	GasSim Lite	887.0	887.0	0.0	0.0
07	Non-methane volatile organic compounds (NMVOC)	C	SSC	GasSim Lite	0.0	0.0	0.0	0.0
		C	SSC	GasSim Lite	4.48419	4.48419	0.0	0.0

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

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR									
POLLUTANT		METHOD			QUANTITY				
			Method Used		Total Landfill Gas Emission Point			A (Accidental)	F (Fugitive)
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	KG/Year	KG/Year
56	1,1,2,2-tetrachloroethane	C	SSC	GasSim Lite	0.191	0.0	0.191	0.0	0.0
62	Benzene	C	SSC	GasSim Lite	0.11	0.0	0.11	0.0	0.0
15	Chlorofluorocarbons (CFCs)	C	SSC	GasSim Lite	1.27	0.0	1.27	0.0	0.0
16	Halons	C	SSC	GasSim Lite	0.0	0.0	0.0	0.0	0.0
14	Hydrochlorofluorocarbons (HCFCs)	C	SSC	GasSim Lite	0.562	0.0	0.562	0.0	0.0
09	Perfluorocarbons (PFCs)	C	SSC	GasSim Lite	0.0	0.0	0.0	0.0	0.0
54	Trichlorobenzenes (TCBs)(all isomers)	C	SSC	GasSim Lite	0.00024	0.0	0.00024	0.0	0.0
57	Trichloroethylene	C	SSC	GasSim Lite	0.139	0.0	0.139	0.0	0.0
60	Vinyl chloride	C	SSC	GasSim Lite	0.17	0.0	0.17	0.0	0.0
44	1,2,3,4,5,6-hexachlorocyclohexane(HCH)	C	SSC	GasSim Lite	0.0	0.0	0.0	0.0	0.0

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

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

RELEASES TO AIR							
POLLUTANT		METHOD			QUANTITY		
			Method Used				
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

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

Additional Data Requested from Landfill operators

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

Landfill: Drogheda Landfill

Please enter summary data on the quantities of methane flared and / or utilised

	T (Total) kg/Year	M/C/E	Method Used: Method Code	Method Used: Designation or Description	Facility Total Capacity m3 per hour	
Total estimated methane generation (as per site model)	893520.0	C	OTH	As per formula EPA Training	N/A	
Methane flared	331278.05	C	OTH	As per formula EPA Training	750.0	(Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	169000.0	C	SSC	GasSim Lite	N/A	

4.2 RELEASES TO WATERS

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

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

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

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

SECTION B : REMAINING PRTR POLLUTANTS

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

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

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

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

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

4.3 RELEASES TO WASTEWATER OR SEWER

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER										
POLLUTANT		METHOD			QUANTITY					
			Method Used							
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	Emission Point 3	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0	0.0	0.0

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

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

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER									
POLLUTANT		METHOD			QUANTITY				
			Method Used		Civic Waste Facility (S1)	Closed Landfill Facility (S2)			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
238	Ammonia (as N)	M	Per EPA Monaghan		405.47	0.25	405.72	0.0	0.0
306	COD	M	Per EPA Monaghan		476.69	0.37	477.06	0.0	0.0
343	Sulphate	M	Per EPA Monaghan		277.24	12.36	289.6	0.0	0.0
					0.0	0.0	0.0	0.0	0.0

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

4.4 RELEASES TO LAND

SECTION A : PRTR POLLUTANTS

RELEASES TO LAND							
POLLUTANT		METHOD			QUANTITY		
			Method Used				
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

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

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

RELEASES TO LAND							
POLLUTANT		METHOD			QUANTITY		
			Method Used				
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

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

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

Transfer Destination	European Waste Code	Hazardous	Quantity T/Year	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Name and Licence / Permit No. of Recoverer / Disposer / Broker	Address of Recoverer / Disposer / Broker	Name and Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)	Licence / Permit No. of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	20 02 01	No	721.92	Food and garden waste	R13	M	Weighed	Offsite in Ireland	V & W Recycling W0034-02	Newry Road, Dundalk, Co. Louth		
Within the Country	20 01 01	No	677.64	Cardboard, newspaper and other paper	R13	M	Weighed	Offsite in Ireland	Smurfit Recycling 021-3	Walkinstown, Dublin		
To Other Countries	20 01 02	No	167.42	Glass	R13	M	Weighed	Offsite in Ireland	Glassdon NI LN/06/08	Toomebridge, Co. Antrim		
To Other Countries	20 01 40	No	181.28	Metal	R13	M	Weighed	Offsite in Ireland	Tinleys NI WMEX20/01	Northern Ireland		
Within the Country	20 01 39	No	138.84	Plastic	R13	M	Weighed	Offsite in Ireland	Shabra 15-5	Monaghan, Co. Monaghan		
To Other Countries	20 01 11	No	98.14	Textiles	R13	M	Weighed	Offsite in Ireland	Cookstown NI WMEX01/11	Cookstown, Northern Ireland		
Within the Country	20 01 38	No	613.32	Wood	R13	M	Weighed	Offsite in Ireland	V & W Recycling W0034-02	Newry Road, Dundalk, Co. Louth		
Within the Country	20 01 34	No	20.32	Small batteries	R13	M	Weighed	Offsite in Ireland	Returnbatt W0105-01	Returnbatt Ltd, Old Mill Industrial Estate, Kill, Co. Kildare, Ireland		
Within the Country	20 01 35	Yes	551.04	WEEE	R13	M	Weighed	Offsite in Ireland	Cedar Resources 185-1	Dublin		
Within the Country	**20 01 21**	**Yes**	0.2006	Fluorescent tubes and lighting	R13	M	Weighed	Offsite in Ireland	ENVA Ireland W0184-1	Clonminam Industrial Estate, Portlaois, Co. Laois		

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

GasSim Version 1.52
Project Name : Drogheda Landfill Site PRTR 2007
Client Name : DBC

Gas	Reporting Threshold	Value to report	Amount Produced 25%	75%
Ammonia	1.00 t	Not Modelled		
Carbon Dioxide	10,000.00 t	4,520.00 t	4,150.00 t	4,910.00 t
Carbon Disulphide	1.00 t	29.50 g	7.10 g	138.00 g
Carbon Monoxide	100.00 t	13.80 t	11.70 t	16.90 t
Hydrogen Chloride	10.00 t	79.70 kg	9.72 kg	458.00 kg
Hydrogen Cyanide	200.00 kg	Not Modelled		
Hydrogen Fluoride	5.00 t	304.00 kg	159.00 kg	425.00 kg
Nitrous Oxide	10.00 t	Not Modelled		
Phosgene	50.00 kg	Not Modelled		
Sulphur Hexafluoride (SF6)	50.00 kg	Not Modelled		
Acetaldehyde (ethanal)	100.00 kg	79.10 g	26.30 g	235.00 g
Acetonitrile	50.00 kg	Not Modelled		
Acrylamide	100.00 kg	Not Modelled		
Acrylonitrile	10.00 t	Not Modelled		
Aldrin	10.00 kg	Not Modelled		
Allyl alcohol	10.00 kg	Not Modelled		
Amitrole	10.00 kg	Not Modelled		
Aniline	50.00 kg	Not Modelled		
Atrazine	10.00 kg	Not Modelled		
Azinphos-Methyl	10.00 kg	Not Modelled		
Benzene	1.00 t	110.00 g	22.50 g	394.00 g
Benzo(a)pyrene	1.00 kg	0.00 g	0.00 g	0.00 g
Benzylbutylphthalate (BBP)	100.00 kg	Not Modelled		
Benzyl Chloride (chlorobenzene)	50.00 kg	13.70 g	1.52 g	86.90 g
Butadiene (modelled as 1,2-Butadiene)	1.00 t	46.70 g	9.51 g	145.00 g
Butene - all isomers	10.00 t	14.60 g	4.32 g	72.70 g
i-Butyraldehyde	50.00 kg	Not Modelled		
Calcium Cyanamide	10.00 kg	Not Modelled		
Carbon Tetrachloride (tetrachloromethane)	100.00 kg	14.90 g	2.70 g	36.00 g
Chloroform (trichloromethane)	100.00 kg	56.70 g	13.80 g	147.00 g
Cyanamide	50.00 kg	Not Modelled		
Di(2-ethylhexyl)phthalate (DEHP)	100.00 kg	Not Modelled		
Diallate	10.00 kg	Not Modelled		
Diaminotoluene - all isomers	50.00 kg	Not Modelled		
Dibutylphthalate (DBP)	100.00 kg	Not Modelled		
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	10.00 kg	6.53 g	2.56 g	23.60 g
Dichlorodiphenyltrichloroethane (DDT) - all isomers	10.00 kg	Not Modelled		
Dichlorvos	10.00 kg	Not Modelled		
Dieldrin	10.00 kg	Not Modelled		
Diethyl Sulphate	10.00 kg	Not Modelled		
Dimethyl Disulphide	10.00 kg	100.00 g	23.50 g	349.00 g
Dimethyl Sulphate	10.00 kg	Not Modelled		
Dimethylformamide	10.00 t	Not Modelled		
Dinoseb	10.00 kg	Not Modelled		
Dioxane	50.00 kg	Not Modelled		
Endosulfan	10.00 kg	Not Modelled		
Endrin	10.00 kg	Not Modelled		
Epichlorohydrin	50.00 kg	Not Modelled		
2-Ethoxyethanol	50.00 kg	Not Modelled		
2-Ethoxyethylacetate	10.00 kg	Not Modelled		
Ethyl Acrylate	50.00 kg	Not Modelled		
Ethyl Bromide	100.00 kg	Not Modelled		
Ethyl Toluene (All Isomers)	50.00 kg	9.26 g	0.46 g	177.00 g
Ethylene	10.00 t	1.34 kg	611.00 g	2.37 kg
Ethylene Dichloride	1.00 t	110.00 g	29.50 g	415.00 g
Ethylene Oxide	1.00 t	Not Modelled		
Formaldehyde	50.00 kg	51.00 g	16.50 g	123.00 g
Hexabromocyclododecane	100.00 kg	Not Modelled		
Hexachlorobenzene	10.00 kg	Not Modelled		
Hexachlorocyclohexane (All Isomers)	10.00 kg	0.00 g	0.00 g	0.00 g
Hydroxyethyl Acrylate	10.00 kg	Not Modelled		
Iodomethane	50.00 kg	Not Modelled		
Isophorone Di-Isocyanate	10.00 kg	Not Modelled		
Maleic Anhydride	50.00 kg	Not Modelled		
Methane	10.00 t	169.00 t	134.00 t	213.00 t
Methyl Bromide	100.00 kg	Not Modelled		
Methyl chloride (chloromethane)	10.00 t	210.00 g	25.20 g	1.12 kg
Methyl chloroform (1,1,1-trichloroethane)	50.00 kg	39.00 g	7.71 g	205.00 g
Methyl Isocyanate	10.00 kg	Not Modelled		
3-Methyl-1-butene	100.00 kg	Not Modelled		
Methylamine	50.00 kg	Not Modelled		
Methylene chloride (dichloromethane)	1.00 t	479.00 g	43.80 g	5.15 kg
4,4'-Methylene Dianiline	100.00 kg	Not Modelled		
Methylene Diphenyl Diisocyanate	10.00 kg	Not Modelled		
4,4'-Methylene-bis(2-Chloroanaline)	10.00 kg	Not Modelled		
Nitrobenzene	50.00 kg	Not Modelled		

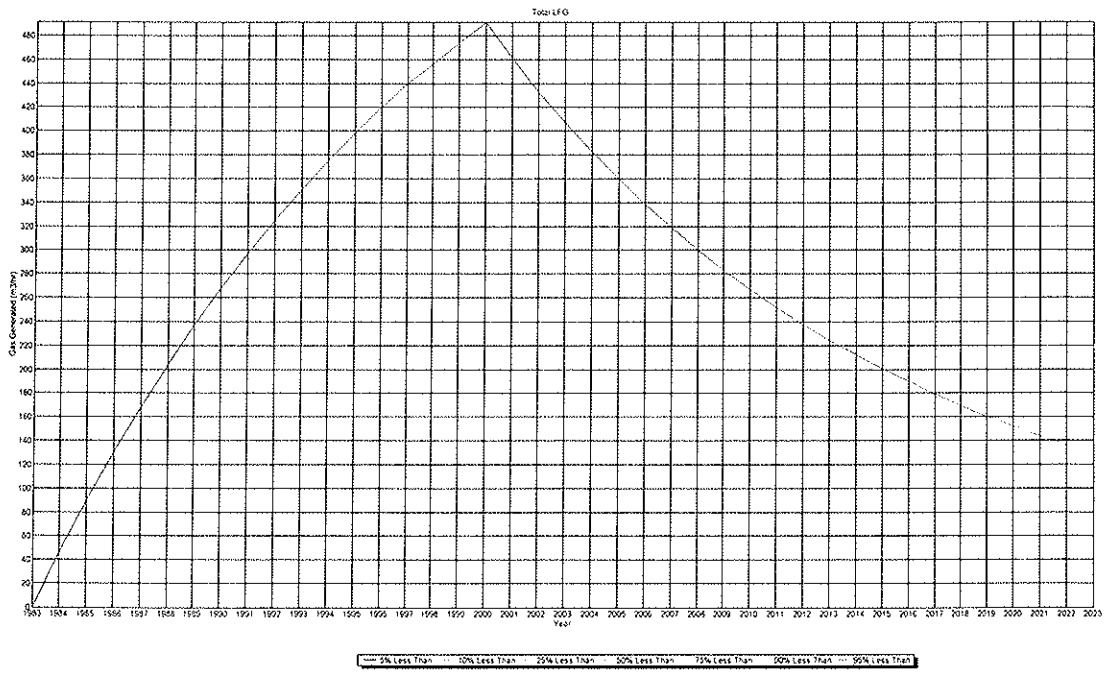
Gas	Reporting Threshold	Value to report	Amount Produced 25%	75%
2-Nitropropane	10.00 kg	Not Modelled		
Pentachlorophenol	10.00 kg	Not Modelled		
Pentane	100.00 kg	333.00 g	43.90 g	1.55 kg
Pentene (All Isomers)	10.00 t	66.70 g	16.30 g	336.00 g
Phenol	50.00 kg	0.00 g	0.00 g	0.00 g
Phorate	10.00 kg	Not Modelled		
Propylene	10.00 t	Not Modelled		
Propylene Oxide	100.00 kg	Not Modelled		
Simazine	10.00 kg	Not Modelled		
Styrene	100.00 kg	Not Modelled		
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)	50.00 kg	191.00 g	49.20 g	833.00 g
Tetrachloroethylene (tetrachloroethene)	1.00 t	256.00 g	12.90 g	1.94 kg
Toluene	100.00 kg	416.00 g	29.40 g	5.25 kg
Toluene Diisocyanate (All Isomers)	50.00 kg	Not Modelled		
Trichlorobenzene (All Isomers)	10.00 kg	0.24 g	0.13 g	0.44 g
Trichloroethylene	1.00 t	139.00 g	20.00 g	761.00 g
Trichlorotoluene	50.00 kg	Not Modelled		
Trimellitic Anhydride	10.00 kg	Not Modelled		
Trimethylbenzene (All Isomers)	50.00 kg	3.76 g	0.67 g	39.40 g
Vinyl Chloride	10.00 t	170.00 g	26.80 g	1.03 kg
Xylene (All Isomers)	10.00 t	194.00 g	6.22 g	2.25 kg
Antimony	5.00 kg	Not Modelled		
Arsenic	1.00 kg	Not Modelled		
Beryllium	1.00 kg	Not Modelled		
Boron	5.00 t	Not Modelled		
Cadmium	1.00 kg	Not Modelled		
Chromium	10.00 kg	Not Modelled		
Copper	10.00 kg	Not Modelled		
Lead	100.00 kg	Not Modelled		
Manganese	50.00 kg	Not Modelled		
Mercury	1.00 kg	Not Modelled		
Nickel	10.00 kg	Not Modelled		
Selenium	200.00 kg	Not Modelled		
Vanadium	50.00 kg	Not Modelled		
Zinc	100.00 kg	Not Modelled		
Brominated Diphenylethers (total as Br)	100.00 kg	Not Modelled		
Chlorine and total inorganic chlorine compounds - as HCl	10.00 t	Not Modelled		
Chlorofluorocarbons (CFCs)	50.00 kg	1.27 kg	94.00 g	4.95 kg
Dioxins and Furans (modelled as 2,3,7,8-TCDD)	0.01 g	0.00 g	0.00 g	0.00 g
Dioxins and furans (as WHO TEQ)	0.01 g	Not Modelled		
Fluorine and total inorganic fluorine compounds - as HF	5.00 t	Not Modelled		
Halons	50.00 kg	0.00 g	0.00 g	0.00 g
Hydrobromofluorocarbons (HBFCs)	100.00 kg	Not Modelled		
Hydrochlorofluorocarbons (HCFCs)	1.00 t	562.00 g	52.20 g	4.18 kg
Hydrofluorocarbons (HFCs)	100.00 kg	0.00 g	0.00 g	0.00 g
Nitrogen Oxides (Except N2O, reported as NO2)	100.00 t	2.47 t	2.31 t	2.63 t
Non-methane volatile organic compounds (NMVOCs)	10.00 t	34.00 g	1.24 g	392.00 g
Particulate Matter - PM10	10.00 t	0.00 g	0.00 g	0.00 g
Particulate Matter - total	10.00 t	Not Modelled		
Perfluorocarbons (PFCs)	100.00 kg	0.00 g	0.00 g	0.00 g
Polychlorinated Biphenyls (PCBs) - total as WHO TEQ	0.01 g	Not Modelled		
PAHs (modelled as Naphthalene)	50.00 kg	Not Modelled		
Sulphur Oxides, SO2 and SO3 as SO2	100.00 t	887.00 kg	738.00 kg	1.01 t

GasSim Version V 1.54

Project Name: Drogheda Landfill Site PRTR 2007

Project Client: DBC

Total Bulk LFG Produced



IBR0021 drogheda landfill site PRTR 2007.gss 02/04/2009 15:11:02