

***Rathroeen Landfill,
Killala Rd,
Ballina,
Co. Mayo.***

Waste Licence Ref W0067-1

***Annual Environmental Report
Covering the period from the 1st
January 2008 to 31st December
2008***

Owner and Operator

Mayo County Council owns and operates the landfill at Rathroeen, Killala Rd, Ballina.

Reporting Period

This report is the second Annual Environmental Report for Rathroeen Landfill, Killala Rd, Ballina, Co. Mayo. It covers the period from the 1st January 2008 to the 31st of December 2008.

Details of Activity

The construction of Cell No. 2 was completed in April of 2006 and we commenced placing waste therein in May 2006. Waste was placed in Cell 2 for all of 2008. We are also operating a recycling center at the landfill site, which has become very busy, (circa 6900 users per month) during 2008.

Volume and composition of waste received during the year.

In the year ending 31/12/08, 18,904.63 tonnes of waste was accepted at Rathroeen Landfill. The landfill is licenced to accept 45,000tonnes per annum. The composition of this total is set out in Table 1.1, below.

Table 1.1 Volume and composition of waste accepted at Rathroeen Landfill.

Site: Rathroeen Landfill Year: 1st January to 31st December 2008

| | | 2006 | 2007 | 2008 |
|--------------------------|------------------|-----------------|-----------------|-----------------|
| Waste type | EWC Code. | Tonnage | Tonnage | Tonnage |
| Domestic | 20030101 | 12407.12 | 12111.15 | 12708.93 |
| Commercial | 20030102 | 5021.84 | 5412.05 | 4618.90 |
| C&D | | 176.34 | 0 | 0 |
| Industrial Non Hazardous | 20030103 | 365.08 | 454.56 | 439.19 |
| Public Cleansing | | 888.58 | 1013.98 | 1137.61 |
| Total | | 18858.96 | 18991.74 | 18904.63 |

Area occupied by waste.

The area of the Rathroeen Landfill site is 18.75 Hectares, of this area 9.4 Hectares has been land filled at some stage of the development. We are currently placing waste in Cell No. 2 which has an area of 15,000m².

Methods of deposition of waste.

The deposition of waste is currently being done in a lined cell. Waste vehicles reverse to an elevated tipping area to deposit the waste. This ensures that nobody has to walk on the waste. There is an excavator at the tip head that places the waste and it is then compacted by 32 tonne Bomag Compacter. Members of the public are not allowed to access the tipping area, they are provided with skips at the recycling center.

Civic Amenity.

In September 2003 the recycling center at Rathroeen Landfill was opened to the public. Prior to this there had always been glass and aluminium can banks at the site. The new center increased the range of items that could be recycled.

At the end of December 2008 the following items were being accepted at the recycling center:

1. Papers and magazines.
2. Cardboard.
3. Tetra-paks.
4. Plate glass.
5. Aeroboard / polystyrene
6. Glass - Clear, Brown, Green
7. Scrap metal
8. Tin / steel cans
9. White goods - Dishwashers, Cookers, Tumble dryers, Washing machines
10. Florescent tubes and light bulbs
11. Brown goods - Televisions, Computers, Keyboards and hard drives
12. Batteries - Household and car

13. Engine oil
14. Cooking Oil
15. Textiles
16. Plastics - PET and HDPE
17. Timber
18. Fridges and freezers
19. Tyres
20. Household hazardous wastes; Aerosols, Waste Medicines, Waste veterinary medicines, Pesticides, Herbicides, Paint, Household corrosives

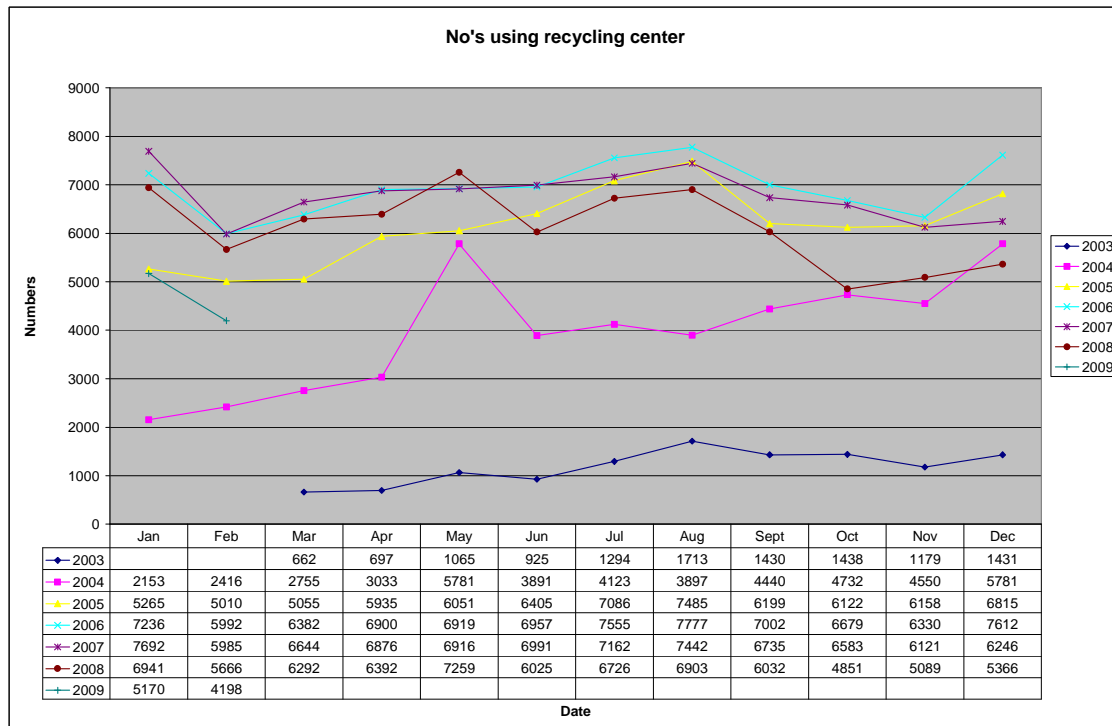
Outlined on Table 3 appendix A are the quantities of recycled material removed from the site by registered contractors in 2008.

The contractors we had agreed with the agency for 2008 were as follows:

| Product | Name & address of Recycler | Permit No |
|---|--|-----------------------------|
| Papers, magazines, tetra pak cardboard. Plastics | Bourke Waste Management Specialists, Clogher, Westport, Co. Mayo. | CW050 |
| | Greyhound Recycling , Dublin | CW047 |
| Scrap metal Tin / steel cans Aluminium Cans | Erin Recyclers, Deep Water Quay, Sligo. | CW206 |
| Plate glass | Eclipse Recycling Services Ltd, Mountmellick, Co. Laois | WMP 005 |
| Glass | Rehab Recycling, Cork. | Exempt public collection |
| Tyres | Crumb Rubber Ireland, Dundalk. | |
| Batteries Household Car batteries Engine Oil | Envva, | |

| | | |
|--|--|-----------------------------|
| Vegetable oil Flourescent tubes | | |
| Textiles. | Textile Recycling Ltd. Dublin | Exempt public collection |
| Aerosols. Medicine waste. Pesticides, insecticides, strong cleaning agents. Paint both hazardous and non-hazardous. | Indavar Ireland | CW029 |
| Postage stamps | Irish Peatland Conservation Council, (IPCC). Lullymore, Rathangan, Co Kildare. | |
| Fridges and freezers Small electrical White goods Brown goods | KMK Metals, Tullamore, Co. Offaly | |

For the year ended 31/12/06, 81,393 people availed of the facilities at the recycling center. Graph No.1. below shows the numbers attending the center on a monthly basis through 2008.



Summary of environmental monitoring.

Landfill Gas Monitoring.

Monitoring was carried out on a monthly basis as required by our waste licence.

There were a few occasions when levels exceeded trigger levels as outlined in the licence. Mainly these were high levels of CO₂ in areas outside the waste body.

A permanent gas detection system has been installed in the site buildings and it is tested and calibrated twice annually as set out in maintenance procedures.

Monthly gas monitoring sheets are included in Appendix B.

- The computerised gas model used was "Land SIM",

Details for the emissions for 2008 are as follows;

| | |
|-----------------------|---------------------------|
| Complete Landfill LFG | 421.401m ³ /hr |
| Complete Landfill CH4 | 168.56m ³ /hr |
| Complete Landfill CH4 | 1004083kg/yr |
| Complete Landfill CO2 | 252.84m ³ /hr |
| Complete Landfill CO2 | 4385479kg/yr |

Dust Monitoring

At Rathroeen Landfill we are required to carry out dust monitoring three times a year, twice between the months of May to September and once in the remainder of the year.

The results from each period are outlined below in Table 2.1.

Table 2.1 Total dust emissions during 2008

| | Up- 1/05/08 Down- 30/05/08 | Up- 29/08/08 Down- 1/08/08 | Up- 10/10/08 Down- 10/11/08 |
|----|-------------------------------|-------------------------------|--------------------------------|
| | Total Dust Mg / m2 / day | Total Dust Mg / m2 / day | Total Dust Mg / m2 / day |
| D1 | 110 | 75 | 69 |
| D2 | 190 | 150 | 138 |
| D3 | 55 | 245 | <17 |
| D4 | 200 | 80 | 149 |

Groundwater Monitoring

Analysis of groundwater samples has shown that levels of ammonia have been elevated in each sampling period. Coliforms have also been found at most of the wells during this period, this indicates that there has been contamination due to sewage or industrial waste. Sampling dates for 2008 were, 6/03/08, 26/06/08 and 30/09/08.

Prior to the granting of our waste licence there were 6 No. monitoring points, MW 1,2,3,4D, 4S and MW5. In December '02 five more wells were drilled to comply with condition 3.18.1. This condition required that one well be drilled in the bedrock down gradient of the site and two more is drilled in the overburden to the north and east of the site. These were labelled MW7D, MW6 and MW8S. While the drilling rig was in these areas, we also had two more wells drilled in the overburden to the west, MW7S and in the bedrock up gradient of the site, MW8D. During the construction phase on site monitoring wells MW1, MW4D and MW4S were destroyed. These were replaced in October 2003 with wells that have been agreed with the agency and labeled as follows MW9, MW10D and MW10S.

With the completion of cell one and the construction of the leachate interceptor drain there should be significant improvement in the groundwater quality.

Details of groundwater analysis are attached in Appendix C.

Surface water Monitoring

Monitoring of the five surface water points is carried out on a quarterly basis as per schedule D.5.1. On each occasion that the samples have been taken one or more of the limits set for A1 waters has been exceeded. Dates of sampling in 2008 were, 6/03/08, 26/06/08 and 30/09/08.

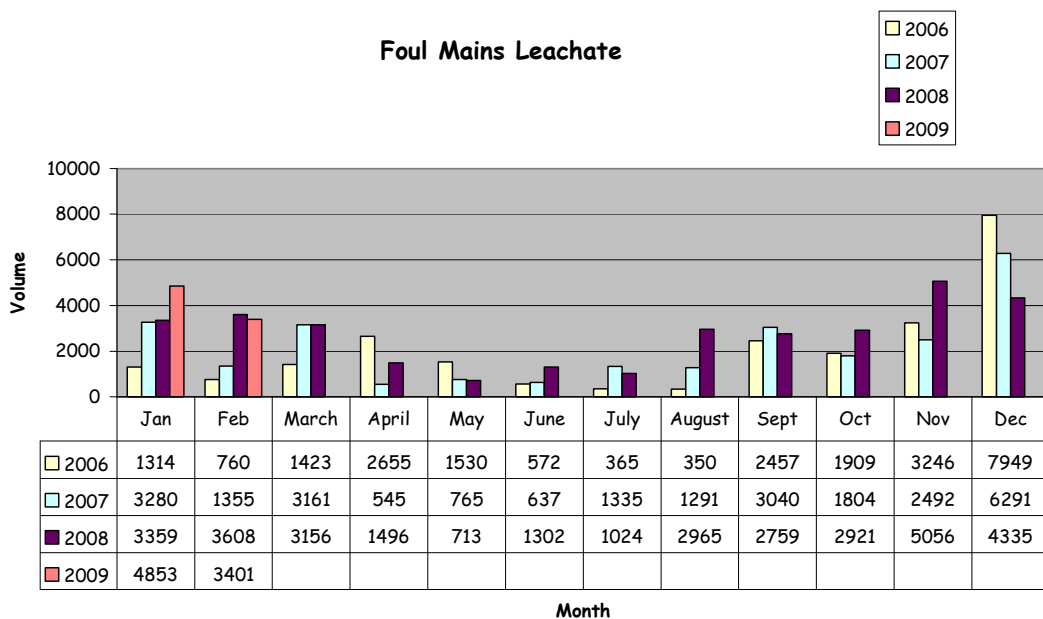
The general trend of the samples are as follows, SW1 the upstream point is of poor quality generally, the situation is a lot worse at SW2 which is at the northern end of the site. The quality shows a gradual improvement as the

stream makes the 2km journey, through points SW4, 3 and 5 to the river Moy.

A summary of results for each point is included in Appendix.D.

Leachate Monitoring.

As part of compliance to our waste licence we are sampling leachate monthly from the main pump sump before the rising main leaves the site to the treatment plant. Sampling dates for 2008 were as follows; 10/01/08, 6/02/08, 6/03/08, 10/04/08, 8/05/08, 26/06/08, 24/07/08, 26/08/08, 30/09/08 and 11/11/08. Analysis and details on leachate monitoring and levels from the site are attached in Appendix E. Volumes pumped from the site are shown in table below.



Annual Water balance calculation and interpretation.

Water Balance Return Form

Site: Rathroeen Landfill

Year: 2008

Cell No.2: 14000m²

| Month | Household Waste (t) | Inert Waste (t) | Effective Rainfall (mm) | Available Absorptive Capacity for Cell (tonnes) | |
|-----------|---------------------|-----------------|-------------------------|---|--------------|
| | | | | Month C | Cumulative C |
| | H | T | R | Month C | Cumulative C |
| January | 1599.92 | 0 | 159.7 | -2235.64 | -2235.64 |
| February | 1451.3 | 0 | 128.1 | -1648.27 | -3883.91 |
| March | 1325.35 | 0 | 151.3 | -1985.66 | -5869.57 |
| April | 1493.6 | 0 | 71.6 | -848.84 | -6718.41 |
| May | 1582.59 | 0 | 31.4 | -281.34 | -6999.75 |
| June | 1405.18 | 0 | 113.8 | -1452.68 | -8452.43 |
| July | 1303 | 0 | 67 | -807.7 | -9260.13 |
| August | 1303.52 | 0 | 168.2 | -2224.44 | -11484.57 |
| September | 1226.11 | 0 | 112.2 | -1448.18 | -12932.75 |
| October | 1074.28 | 0 | 143.9 | -1907.17 | -14839.92 |
| November | 1819.96 | 0 | 111.4 | -1377.60 | -16217.52 |
| December | 3319.82 | 0 | 99.7 | -1063.90 | -17281.42 |

Available Absorptive Capacity "C" is defined as:

$$C = (H \times 0.1) + (T \times 0.05) - (RA) \text{ tonnes where}$$

H = the mass in tonnes of household and commercial waste input to the cell for the month;

T = the mass in tonnes of transfer station and general skip waste input to the cell for the month;

R = effective rainfall

A = original plan area of the cell in square metres

Biological Assessment

Mr. Martin McGarrigle of the EPA in Castlebar carried out the biological assessment during Autumn of 2008. We are waiting for his report. He has indicated that there has been little improvement in the stream and that it

remains at a Q rating of 2-3. A copy of the report will be forwarded on receipt of it.

Noise Monitoring

The annual Noise survey was carried out in May 2008 the final results are attached in Appendix.F.

Meteorological Report

In August of 2002 a weather station was put in place at the landfill site. It is being used to monitor wind speed, wind direction, rainfall, temperature, humidity and atmospheric pressure. A brief summary of monitoring has been included in Appendix G. Also shown are the rainfall totals that have been collected at Rathroeen.

Wind has been the most influential weather on the daily operations at Rathroeen landfill. We use an enclosed area of netting for tipping when it is windy. Since moving into Cell No. 2 we have been using a mobile netting system in conjunction with the perimeter netting. This netting can be moved to a new area in approximately half a day. We are therefore operating in an enclosed area at all times.

Report on progress on restoration of completed cells.

Rathroeen landfill is constructed on an old lake that was drained during the 1960's as part of the Moy drainage scheme. In effect there was no construction of a cell as the waste was deposited directly into the void space. During the 18 months prior to August 2003, waste was placed in unlined areas to create a profile to construct the new engineered and lined cells on. We finished depositing waste at the unlined northern extremity of the site in August 2003, final levels were as allowed in our waste licence 67-1. This area was profiled and covered with soil and grassed.

The permanent capping of Cell No. 1 was carried out during the summer of 2006. Waste has been deposited into Cell 2 since May 2006, it should be filled to capacity in summer 2009 and plans are in place to have it permanently capped in the autumn of 2009.

Report on development works undertaken in the reporting period

The following works were carried out during the year:
2008

- Northern area of Cell 2 completed profiled and temporarily capped, waste deposition in south half of Cell 2 commenced circa August.
- Installation of horizontal gas collection network through the waste body of cell 2.

Complaints Summary.

As part of the agreed management of the Rathroeen Landfill regular meetings are held with the local Cooneal and Ballisokeary Residents Association, four meetings were held in 2008, on the following dates, 2/4/08, 4/06/09, 22/10/09 and 10/12/08. Many of the concerns of the residents are expressed through these meetings and minuted.

Financial provisions made under licence.

For the year 2008 the cost per ton of waste at Rathroeen Landfill has been as follows, €145 per ton inclusive of the €15 per tonne government landfill levy.

The running costs for Rathroeen for 2008 were €1.2 million; the current estimated cost for 2009 is €1.3 million. The cost for the disposal of waste by weight is remaining the same for 2008.

Management and staffing structure at Rathroeen Landfill

Appendix G. Outlines the staffing structure at Rathroeen Landfill.

| Rathroeen Landfill Site Management Structure | | | |
|--|------------------|---|---------------------------|
| Title | Name | Responsibilities/Duties | Qualifications/Experience |
| Director of Services | Seamus Granaghan | Directorial responsibilities for the operation of the landfill. | B.E., C.Eng. F.I.E.I. |

| | | | |
|----------------------------------|-----------------|--|-----------------------|
| Senior Engineer | Noel Burke | Overall responsibility for all aspects of development and management of the landfill. | B.E., C.Eng. M.I.E.I. |
| Senior Engineer | Michael Mongan | Overall responsibility for all capital works at the landfill | B.E., C.Eng. F.I.E.I. |
| Site Manager | Eddie Munnelly | Overall responsibility for the operation and the management of the landfill and ensuring compliance with the licence. | B.E., C.Eng. M.I.E.I. |
| Deputy Site Manager | Michael Hegarty | Carrying out environmental monitoring at Rathroeen Landfill as specified in the waste licence. Deputising for Site Manager. | B.Sc., Dip C.Eng. |
| Assistant Staff Officer, Grade 4 | Ciaran Commons | Operation of the office system including weighbridge accounts, payments, invoicing, wages, subsistence, information management, public relations. | Suitably Qualified |
| Clerical Officer | Patricia Loftus | Operation of the office system including weighbridge accounts, payments, invoicing, wages, subsistence, information management, public relations. Deputising for Administrative Officer. | Suitably Qualified |
| A / Foreman | Gerry Bourke | Supervision of works and filling operations at the landfill. Deputising in absence of deputy landfill manager . | Suitably Qualified |
| General Operative 1 | John Quinn | General Maintenance as directed | Suitably Qualified |
| General Operative 2 | David McAndrew | General Maintenance as directed | Suitably Qualified |
| General Operative 3 | Martin McNulty | General Maintenance as directed | Suitably Qualified |

Public Information Programme

All records of environmental monitoring are kept at Rathroeen Landfill. To date there have been no requests to see the information. We have also

placed information boxes at the recycling center and have numerous leaflets and brochures available to the public at the reception area of the landfill. In addition to this we are also running a number of school tours. These are from both primary and secondary schools generally from the local area.

Appendix A.

| | 2008 Totals |
|------------------------------------|--------------------|
| Glass(Clear, Green, Brown) | 166.76 |
| Aluminium Cans | 9.34 |
| Paper | 377.96 |
| Cardboard | 181.14 |
| Tetra Paks | 14.4 |
| Tin/steel Cans | 33.28 |
| Plastics (PE + HDPE) | 43.14 |
| Timber | 952.6 |
| Metal | 205.63 |
| Textiles | 84.64 |
| Waste oil | 4.9 |
| Waste Veg oil | 1.86 |
| Batteries -Nickel/cad | 4.76 |
| Batteries - lead acid | 17.6 |
| Window Glass | 16.04 |
| Flourescent tubes | 0.84 |
| White goods | 80.96 |
| TVs | 58.897 |
| Small Electrical Goods | 51.547 |
| Fridges/Freezers | 47.655 |
| Christmas Trees | 0 |
| Polystyrene | 3.96 |
| Tyres | 8.12 |
| Hse Haz. Waste (Medicine) | 0.05 |
| Hse Haz. Waste (Paint) | 11.36 |
| Hse Haz. Waste (Aerosols) | 2.52 |
| Gypsum / Plasterboard | 21.78 |
| Totals | 2401.739 |

Appendix B.

Monthly Gaswell Monitoring Record

Site name: Rathreen Landfill

Address: Killala Rd, Ballina

Date: 18/01/08

Analytical Range:

Personnel: Gerry Bourke

Instrument: GA2000

Temperature: as shown

Pressure: 1001mbar

| Well No. | CH4 %v/v | CO2 %v/v | O2 %v/v | CO ppm | H2S ppm | Temp. | Comments |
|----------|-------------|-------------|------------|-----------|------------|-------|--------------------------------|
| BALLGW08 | | | | | | | perimeter |
| BALLGW09 | 0 | 1.5 | 19.1 | 0 | 0 | 10.4 | perimeter |
| BALLGW12 | 0 | 1 | 17.1 | 0 | 0 | 10.6 | perimeter |
| BALLGW13 | 0 | 0 | 20.9 | 0 | 0 | 11.7 | perimeter |
| SWDRAIN1 | 0 | 0 | 21 | 0 | 0 | 11.7 | perimeter |
| BALLGW14 | | | | | | | Horizontal gas collection pipe |
| BALLGW15 | | | | | | | Horizontal gas collection pipe |
| BALLGW16 | | | | | | | Horizontal gas collection pipe |
| BALLGW17 | | | | | | | perimeter |
| BALLGW18 | 0 | 0 | 20.8 | 0 | 0 | <<< | perimeter |
| BALLGW19 | 9.1 | 13.2 | 5.3 | 0 | 0 | 10.2 | perimeter |
| BALLGW20 | 62.9 | 37.8 | 0 | 9 | 40 | 8.7 | Northern permanent capped area |
| BALLGW21 | 42.6 | 27.5 | 5.8 | 5 | 32 | 8.4 | Northern permanent capped area |
| BALLGW22 | 62.5 | 36.8 | 0 | 0 | 39 | 8.9 | Northern permanent capped area |
| BALLGW23 | | | | | | | Northern permanent capped area |
| BALLGW24 | | | | | | | Northern permanent capped area |
| BALLGW25 | | | | | | | Northern permanent capped area |
| BALLGW26 | 40.6 | 25.6 | 5.5 | 0 | 14 | 9.7 | Northern permanent capped area |
| BALLGW27 | 26.5 | 13 | 12 | 5 | 6 | 9.3 | Northern permanent capped area |
| BALLGW28 | 65 | 34.3 | 0 | 0 | 63 | 9.2 | Vertical wells into Cell 1 |
| BALLGW29 | 65.5 | 35.1 | 0 | 1 | 52 | 9.8 | Vertical wells into Cell 1 |
| BALLGW30 | 63.6 | 37.5 | 0 | 2 | 22 | 9.5 | Vertical wells into Cell 1 |
| BALLGW31 | 63.8 | 37.6 | 0 | 14 | 74 | 8.6 | Vertical wells into Cell 1 |
| BALLGW32 | 65.5 | 36.5 | 0 | 10 | 32 | 8.6 | Vertical wells into Cell 1 |
| BALLGW33 | 65.8 | 35.5 | 0 | 0 | 79 | 8.9 | Vertical wells into Cell 1 |
| BALLGW34 | 64.4 | 36.5 | 0 | 6 | 86 | 9.1 | Vertical wells into Cell 1 |
| BALLGW35 | 62.9 | 34.7 | 0.4 | 5 | 15 | 9.3 | Vertical wells into Cell 1 |
| BALLGW36 | 63.4 | 37.5 | 0 | 4 | 32766 | 10.1 | Vertical wells into Cell 1 |
| BALLGW37 | 58.6 | 36.5 | 0.6 | 7 | 14 | 9.7 | Vertical wells Under Cell 2 |
| BALLGW38 | 56.7 | 35.8 | 0.6 | 8 | 12 | 8.3 | Vertical wells Under Cell 2 |
| BALLGW39 | 61.3 | 38 | 0 | 10 | 3 | 8.3 | Vertical wells Under Cell 2 |
| BALLGW40 | 60.2 | 40.4 | 0 | 0 | 97 | 8.5 | Vertical wells Under Cell 2 |
| BALLGW41 | 65.6 | 35.1 | 0 | 0 | 12 | 8.3 | Vertical wells Under Cell 2 |
| BALLGW42 | 62.8 | 38.4 | 0 | 0 | 33 | 8.2 | Vertical wells Under Cell 2 |
| BALLGW43 | 62.6 | 38.4 | 0 | 0 | 38 | 8.1 | Vertical wells Under Cell 2 |
| BALLGW44 | 63.8 | 37.3 | 0 | 5 | 45 | 8.4 | Vertical wells Under Cell 2 |
| BALLGW45 | 58.8 | 41.8 | 0 | 13 | 20 | 8.8 | Vertical wells Under Cell 2 |
| BALLGW46 | 47.5 | 30.4 | 2.1 | 7 | 0 | 8.4 | Vertical wells Under Cell 2 |
| BALLGW47 | 47.3 | 30.4 | 2.2 | 3 | 0 | 8.5 | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Address: Killala Rd, Ballina

Date: 14.02.07

Analytical Range:

Personnel: Gerry Bourke

Instrument: GA2000

Temperature: as shown

Pressure: 1001mbar

| Well No. | CH4 | CO2 | O2 | CO | H2S | Temp. | Comments |
|----------|------|------|------|-----|-------|-------|--------------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | |
| BALLGW08 | 0 | 1.5 | 13 | 10 | 0 | 7.1 | perimeter |
| BALLGW09 | 0 | 1.2 | 19.4 | 2 | 0 | 6.4 | perimeter |
| BALLGW12 | | | | | | | perimeter |
| BALLGW13 | 0 | 0.1 | 20.9 | 0 | 0 | 6.3 | perimeter |
| SWDRAIN1 | | | | | | | perimeter |
| BALLGW14 | | | | | | | Horizontal gas collection pipe |
| BALLGW15 | | | | | | | Horizontal gas collection pipe |
| BALLGW16 | 6.8 | 2.7 | 19.2 | 0 | 0 | 7.4 | Horizontal gas collection pipe |
| BALLGW17 | 0 | 9.1 | 4.6 | 0 | 0 | 5 | perimeter |
| BALLGW18 | 0 | 4.1 | 16 | 3 | 0 | 5.2 | perimeter |
| BALLGW19 | 0.1 | 10.2 | 7.6 | 0 | 0 | 6.9 | perimeter |
| BALLGW20 | 50.9 | 30.1 | 2.9 | 5 | 3 | 10.2 | Northern permanent capped area |
| BALLGW21 | 0 | 0 | 21 | 6 | 0 | 10.2 | Northern permanent capped area |
| BALLGW22 | 58.8 | 34 | 1.4 | 2 | 31 | 10.2 | Northern permanent capped area |
| BALLGW23 | 59.2 | 33.7 | 0.9 | 3 | 16 | 11 | Northern permanent capped area |
| BALLGW24 | 13.1 | 8 | 16 | 3 | 1 | 9.9 | Northern permanent capped area |
| BALLGW25 | 54.7 | 29.5 | 2.3 | 2 | 6 | 12.5 | Northern permanent capped area |
| BALLGW26 | 37.8 | 23.6 | 5.9 | 0 | 16 | 10.4 | Northern permanent capped area |
| BALLGW27 | 51.5 | 21.1 | 4.8 | 7 | 8 | 10.3 | Northern permanent capped area |
| BALLGW28 | 60.9 | 32.5 | 0.3 | 4 | 57 | 10.4 | Vertical wells into Cell 1 |
| BALLGW29 | 66.7 | 34.6 | 0 | 5 | 22 | 10.2 | Vertical wells into Cell 1 |
| BALLGW30 | 65.2 | 36.7 | 0 | 7 | 24 | 10.4 | Vertical wells into Cell 1 |
| BALLGW31 | 65.2 | 36.2 | 0 | 5 | 68 | 10.2 | Vertical wells into Cell 1 |
| BALLGW32 | 66.4 | 35 | 0 | 13 | 26 | 10.4 | Vertical wells into Cell 1 |
| BALLGW33 | 66.3 | 34.1 | 0 | 2 | 73 | 10.3 | Vertical wells into Cell 1 |
| BALLGW34 | 65.8 | 36.1 | 0 | 9 | 70 | 8.1 | Vertical wells into Cell 1 |
| BALLGW35 | 66.5 | 34.7 | 0 | 5 | 21 | 10.5 | Vertical wells into Cell 1 |
| BALLGW36 | 64.5 | 36.6 | 0 | 4 | 32766 | 10.3 | Vertical wells into Cell 1 |
| BALLGW37 | 59.5 | 37.1 | 0 | 5 | 24 | 10.4 | Vertical wells Under Cell 2 |
| BALLGW38 | 58 | 35.3 | 0.4 | 1 | 16 | 10.4 | Vertical wells Under Cell 2 |
| BALLGW39 | 63.5 | 37.1 | 0 | 2 | 6 | 10.2 | Vertical wells Under Cell 2 |
| BALLGW40 | 61.2 | 39.9 | 0 | 1 | 107 | 10.2 | Vertical wells Under Cell 2 |
| BALLGW41 | 66.5 | 34.2 | 0 | 7 | 17 | 10.3 | Vertical wells Under Cell 2 |
| BALLGW42 | 63.5 | 38.3 | 0 | 9 | 40 | 10.4 | Vertical wells Under Cell 2 |
| BALLGW43 | 63.5 | 37.8 | 0 | 0 | 40 | 10.5 | Vertical wells Under Cell 2 |
| BALLGW44 | 64 | 33.1 | 0 | 40 | 21 | 10.4 | Vertical wells Under Cell 2 |
| BALLGW45 | 59.5 | 41.2 | 0 | 39 | 23 | 10.5 | Vertical wells Under Cell 2 |
| BALLGW46 | 48.4 | 30.2 | 1.6 | 19 | 1 | 10.3 | Vertical wells Under Cell 2 |
| BALLGW47 | 47.9 | 30.2 | 1.6 | 12 | 1 | 10.2 | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Address: Killala Rd, Ballina

Date: 10.03.08

Analytical Range:

Personnel: Gerry Bourke

Instrument: GA2000

Temperature: as shown

Pressure: 1001mbar

| Well No. | CH4 | CO2 | O2 | CO | H2S | Temp. | Comments |
|----------|------|------|------|-----|-------|-------|--------------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | |
| BALLGW08 | 0 | 0.4 | 19.9 | 0 | 0 | 7.2 | perimeter |
| BALLGW09 | 0 | 1.2 | 19.4 | 0 | 0 | 10.9 | perimeter |
| BALLGW12 | 0 | 1.7 | 15 | 0 | 0 | 7.4 | perimeter |
| BALLGW13 | 0 | 0 | 20.9 | 1 | 0 | 12.3 | perimeter |
| SWDRAIN1 | | | | | | | perimeter |
| BALLGW14 | | | | | | | Horizontal gas collection pipe |
| BALLGW15 | | | | | | | Horizontal gas collection pipe |
| BALLGW16 | | | | | | | Horizontal gas collection pipe |
| BALLGW17 | 0 | 7.8 | 7.9 | 0 | 0 | 10.3 | perimeter |
| BALLGW18 | | | | | | | perimeter |
| BALLGW19 | 0 | 3.1 | 16.7 | 0 | 0 | 9.1 | perimeter |
| BALLGW20 | 60.1 | 34.6 | 0.4 | 0 | 1 | 9.1 | Northern permanent capped area |
| BALLGW21 | | | | | | | Northern permanent capped area |
| BALLGW22 | 59.6 | 34.7 | 0.1 | 6 | 18 | 8 | Northern permanent capped area |
| BALLGW23 | | | | | | | Northern permanent capped area |
| BALLGW24 | | | | | | | Northern permanent capped area |
| BALLGW25 | 19.4 | 11.3 | 14 | 1 | 8 | 9.1 | Northern permanent capped area |
| BALLGW26 | 65.9 | 35.5 | 0 | 0 | 20 | 5.8 | Northern permanent capped area |
| BALLGW27 | 35.7 | 18.5 | 8.9 | 2 | 14 | 5.8 | Northern permanent capped area |
| BALLGW28 | 44.1 | 25.4 | 4.1 | 0 | 33 | 6.4 | Vertical wells into Cell 1 |
| BALLGW29 | 67.2 | 34.6 | 0 | 3 | 21 | 6.1 | Vertical wells into Cell 1 |
| BALLGW30 | 65.6 | 35.8 | 0 | 6 | 28 | 6.2 | Vertical wells into Cell 1 |
| BALLGW31 | 65.3 | 36.4 | 0 | 5 | 48 | 5.9 | Vertical wells into Cell 1 |
| BALLGW32 | 66.7 | 35 | 0 | 5 | 19 | 5.8 | Vertical wells into Cell 1 |
| BALLGW33 | 60.7 | 33.1 | 0 | 6 | 57 | 5.8 | Vertical wells into Cell 1 |
| BALLGW34 | 65.7 | 36.3 | 0 | 6 | 61 | 5.7 | Vertical wells into Cell 1 |
| BALLGW35 | 66.4 | 34.4 | 0 | 5 | 16 | 5.6 | Vertical wells into Cell 1 |
| BALLGW36 | 58.1 | 33.6 | 1.5 | 11 | 32766 | 5.4 | Vertical wells into Cell 1 |
| BALLGW37 | 61.4 | 38.9 | 0 | 4 | 11 | 7.5 | Vertical wells Under Cell 2 |
| BALLGW38 | 60.1 | 37.5 | 0 | 7 | 5 | 7.9 | Vertical wells Under Cell 2 |
| BALLGW39 | 56.6 | 34.6 | 1 | 5 | 0 | 8.2 | Vertical wells Under Cell 2 |
| BALLGW40 | 60.1 | 40 | 0 | 5 | 95 | 9.2 | Vertical wells Under Cell 2 |
| BALLGW41 | 65.5 | 35.1 | 0 | 5 | 10 | 9.4 | Vertical wells Under Cell 2 |
| BALLGW42 | 62.3 | 38.5 | 0 | 5 | 36 | 10.1 | Vertical wells Under Cell 2 |
| BALLGW43 | 62.3 | 38.3 | 0 | 8 | 37 | 9.7 | Vertical wells Under Cell 2 |
| BALLGW44 | 62.3 | 38.3 | 0 | 8 | 38 | 9.7 | Vertical wells Under Cell 2 |
| BALLGW45 | 58.3 | 42 | 0 | 10 | 18 | 8.6 | Vertical wells Under Cell 2 |
| BALLGW46 | 51.5 | 33.8 | 0.3 | 11 | 0 | 8.7 | Vertical wells Under Cell 2 |
| BALLGW47 | 50.8 | 33.5 | 0.3 | 5 | 0 | 8.4 | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Address: Killala Rd, Ballina

Date: 27.04.08

Analytical Range:

Personnel: Gerry Bourke

Instrument: GA2000

Temperature: as shown

Pressure: 1025mbar

| Well No. | CH4 | CO2 | O2 | CO | H2S | Temp. | Comments |
|----------|------|------|------|-----|-------|-------|--------------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | |
| BALLGW08 | 0 | 0.4 | 18.7 | 0 | 0 | <<< | perimeter |
| BALLGW09 | | | | | | | perimeter |
| BALLGW12 | 0 | 2 | 14.2 | 0 | 0 | 13.8 | perimeter |
| BALLGW13 | 0 | 0.1 | 20.6 | 1 | 0 | 14.2 | perimeter |
| SWDRAIN1 | 0 | 0 | 20.7 | 3 | 0 | 13.6 | perimeter |
| BALLGW14 | | | | | | | Horizontal gas collection pipe |
| BALLGW15 | | | | | | | Horizontal gas collection pipe |
| BALLGW16 | | | | | | | Horizontal gas collection pipe |
| BALLGW17 | 0 | 5.2 | 10.8 | 0 | 0 | 13.4 | perimeter |
| BALLGW18 | 0 | 4 | 15.7 | 0 | 0 | 13.2 | perimeter |
| BALLGW19 | | | | | | | perimeter |
| BALLGW20 | 56 | 31.9 | 1.9 | 0 | 0 | 15.5 | Northern permanent capped area |
| BALLGW21 | | | | | | | Northern permanent capped area |
| BALLGW22 | 47.2 | 29.1 | 3.3 | 1 | 9 | 15.6 | Northern permanent capped area |
| BALLGW23 | | | | | | | Northern permanent capped area |
| BALLGW24 | | | | | | | Northern permanent capped area |
| BALLGW25 | 62.6 | 34.3 | 0.5 | 2 | 79 | 11.2 | Northern permanent capped area |
| BALLGW26 | 63.5 | 35.1 | 0 | 0 | 18 | 11.3 | Northern permanent capped area |
| BALLGW27 | 52.2 | 28.4 | 3.4 | 0 | 0 | 11.7 | Northern permanent capped area |
| BALLGW28 | 65.6 | 32.3 | 0 | 7 | 36 | 12.3 | Vertical wells into Cell 1 |
| BALLGW29 | 64.2 | 33.9 | 0.1 | 4 | 20 | 12.4 | Vertical wells into Cell 1 |
| BALLGW30 | 64.8 | 36.2 | 0 | 17 | 19 | 12.3 | Vertical wells into Cell 1 |
| BALLGW31 | 65 | 35.8 | 0 | 0 | 52 | 12.8 | Vertical wells into Cell 1 |
| BALLGW32 | 65.8 | 35.1 | 0 | 5 | 19 | 12.9 | Vertical wells into Cell 1 |
| BALLGW33 | 66.9 | 33.6 | 0 | 10 | 49 | 12.9 | Vertical wells into Cell 1 |
| BALLGW34 | 63.4 | 37 | 0 | 13 | 159 | 13.2 | Vertical wells into Cell 1 |
| BALLGW35 | 65.7 | 34.6 | 0 | 2 | 0 | 13.2 | Vertical wells into Cell 1 |
| BALLGW36 | 63.8 | 37.1 | 0 | 14 | 32766 | 13.4 | Vertical wells into Cell 1 |
| BALLGW37 | 61.6 | 38.1 | 0 | 16 | 19 | 14.7 | Vertical wells Under Cell 2 |
| BALLGW38 | 60.5 | 36.5 | 0 | 7 | 7 | 14.6 | Vertical wells Under Cell 2 |
| BALLGW39 | 52.6 | 32.2 | 2 | 6 | 2 | 14 | Vertical wells Under Cell 2 |
| BALLGW40 | 60.8 | 39.8 | 0 | 1 | 110 | 14.3 | Vertical wells Under Cell 2 |
| BALLGW41 | 66.5 | 35.3 | 0 | 0 | 12 | 14.4 | Vertical wells Under Cell 2 |
| BALLGW42 | 63 | 38.3 | 0 | 3 | 41 | 14.2 | Vertical wells Under Cell 2 |
| BALLGW43 | 62.9 | 38.1 | 0 | 1 | 40 | 15.2 | Vertical wells Under Cell 2 |
| BALLGW44 | 66.5 | 34.8 | 0 | 16 | 42 | 14.9 | Vertical wells Under Cell 2 |
| BALLGW45 | 58.8 | 41.3 | 0 | 16 | 23 | 14.9 | Vertical wells Under Cell 2 |
| BALLGW46 | 53.8 | 34.3 | 0 | 11 | 1 | 14.8 | Vertical wells Under Cell 2 |
| BALLGW47 | 53.6 | 34.3 | 0 | 5 | 0 | 14.5 | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Date: 11.05.07

Personnel: Gerry Bourke

Temperature: as shown

Address: Killala Rd, Ballina

Analytical Range:

Instrument: GA2000

Pressure: 1004mbar

| Well No. | CH4 | CO2 | O2 | H2S | CO | Temp. | Rel | Baro | Comments |
|----------|------|------|------|-----|-------|-------|-------|------|-----------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | Pres | Pres | |
| BALLGW08 | 0 | 0 | 20.7 | 0 | 0 | <<< | -0.2 | 1006 | perimeter |
| BALLGW09 | 0 | 1.6 | 19.1 | 0 | 0 | 12.1 | -1.09 | 1000 | perimeter |
| BALLGW12 | 0 | 2 | 14.2 | 0 | 0 | 13.8 | 1.43 | 998 | perimeter |
| BALLGW13 | 0 | 0.1 | 20.6 | 1 | 0 | 14.2 | 2.65 | 997 | perimeter |
| SWDRAIN1 | 0 | 0 | 20.7 | 3 | 0 | 13.6 | -4.91 | 998 | perimeter |
| BALLGW14 | 0 | 0.1 | 20.7 | 0 | 0 | 11 | -0.47 | 1014 | Horz gas coll pipe |
| BALLGW15 | 49.7 | 34.5 | 0.4 | 16 | 13 | 14.3 | -7.98 | 999 | Horz gas coll pipe |
| BALLGW16 | 3.4 | 2.5 | 18.8 | 7 | 0 | 14.3 | -1.87 | 999 | Horz gas coll pipe |
| BALLGW17 | 0 | 5.2 | 10.8 | 0 | 0 | 13.4 | 2.04 | 998 | perimeter |
| BALLGW18 | 0 | 4 | 15.7 | 0 | 0 | 13.2 | 2.32 | 998 | perimeter |
| BALLGW19 | 72.7 | 23.4 | 0 | 3 | 0 | 11.4 | 0.16 | 998 | perimeter |
| BALLGW20 | 54.2 | 31.5 | 2.3 | 2 | 12 | 11.5 | -7.72 | 998 | Northern capped area |
| BALLGW21 | | | | | | | | | Northern capped area |
| BALLGW22 | 50.4 | 31.4 | 2.5 | 1 | 14 | 10.9 | -11.9 | 988 | Northern capped area |
| BALLGW23 | | | | | | | | | Northern capped area |
| BALLGW24 | | | | | | | | | Northern capped area |
| BALLGW25 | 62.6 | 34.3 | 0.5 | 2 | 79 | 11.2 | -0.9 | 998 | Northern capped area |
| BALLGW26 | 63.5 | 35.1 | 0 | 0 | 18 | 11.3 | -7.11 | 998 | Northern capped area |
| BALLGW27 | 52.2 | 28.4 | 3.4 | 0 | 0 | 11.7 | -3.63 | 998 | Northern capped area |
| BALLGW28 | 65.6 | 32.3 | 0 | 7 | 36 | 12.3 | -13 | 998 | Vertical wells into Cell 1 |
| BALLGW29 | 64.2 | 33.9 | 0.1 | 4 | 20 | 12.4 | -9.64 | 997 | Vertical wells into Cell 1 |
| BALLGW30 | 64.8 | 36.2 | 0 | 17 | 19 | 12.3 | -12.9 | 997 | Vertical wells into Cell 1 |
| BALLGW31 | 65 | 35.8 | 0 | 0 | 52 | 12.8 | -12.9 | 997 | Vertical wells into Cell 1 |
| BALLGW32 | 65.8 | 35.1 | 0 | 5 | 19 | 12.9 | -12.8 | 997 | Vertical wells into Cell 1 |
| BALLGW33 | 66.9 | 33.6 | 0 | 10 | 49 | 12.9 | -12.9 | 997 | Vertical wells into Cell 1 |
| BALLGW34 | 63.4 | 37 | 0 | 13 | 159 | 13.2 | -12.9 | 997 | Vertical wells into Cell 1 |
| BALLGW35 | 65.7 | 34.6 | 0 | 2 | 0 | 13.2 | -12.8 | 997 | Vertical wells into Cell 1 |
| BALLGW36 | 63.8 | 37.1 | 0 | 14 | 32766 | 13.4 | -12.7 | 997 | Vertical wells into Cell 1 |
| BALLGW37 | 61.9 | 38.6 | 0 | 11 | 19 | 13.8 | -13.5 | 999 | Vertical wells Under Cell 2 |
| BALLGW38 | 60.9 | 37.5 | 0 | 4 | 17 | 13.8 | -9.8 | 999 | Vertical wells Under Cell 2 |
| BALLGW39 | 60.8 | 35.9 | 0.3 | 7 | 10 | 13.9 | -10.0 | 999 | Vertical wells Under Cell 2 |
| BALLGW40 | 60.1 | 40 | 0 | 12 | 119 | 13.9 | -11.6 | 999 | Vertical wells Under Cell 2 |
| BALLGW41 | 65.3 | 35.2 | 0 | 6 | 16 | 11.9 | -15.4 | 989 | Vertical wells Under Cell 2 |
| BALLGW42 | 61.8 | 39.1 | 0 | 8 | 43 | 13 | -7.42 | 989 | Vertical wells Under Cell 2 |
| BALLGW43 | 61.9 | 38.4 | 0 | 8 | 43 | 12.7 | -15.6 | 989 | Vertical wells Under Cell 2 |
| BALLGW44 | 64.3 | 36.1 | 0 | 8 | 16 | 12.2 | -7.46 | 989 | Vertical wells Under Cell 2 |
| BALLGW45 | 57.8 | 42.1 | 0 | 5 | 22 | 12.3 | -15.5 | 989 | Vertical wells Under Cell 2 |
| BALLGW46 | 62.2 | 37.7 | 0 | 11 | 21 | 12.7 | -14.5 | 990 | Vertical wells Under Cell 2 |
| BALLGW47 | 61.9 | 37.6 | 0 | 9 | 3 | 12.4 | -7.44 | 989 | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Address: Killala Rd, Ballina

Date: 6/06/08

Analytical Range:

Personnel: Gerry Bourke

Instrument: GA2000

Temperature: as shown

Pressure: As Shown

| Well No. | CH4 | CO2 | O2 | H2S | CO | Temp. | Rel | Barometric | Comments |
|----------|------|------|------|-----|-------|-------|----------|------------|-----------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | Pressure | Pressure | |
| BALLGW08 | 0 | 3.7 | 14.9 | 0 | 0 | <<< | 0.25 | 1000 | perimeter |
| BALLGW09 | 0 | 2.2 | 18.2 | 1 | 0 | <<< | 0.83 | 1003 | perimeter |
| BALLGW12 | 0 | 3.4 | 13.6 | 0 | 0 | <<< | -0.39 | 1003 | perimeter |
| BALLGW13 | 0 | 0.1 | 20.8 | 0 | 0 | <<< | 0.66 | 1002 | perimeter |
| BALLGW14 | 36 | 25.6 | 4.3 | 4 | 0 | <<< | -14.5 | 1000 | Horz gas coll pipe |
| BALLGW15 | 34 | 23.9 | 7.1 | 14 | 0 | <<< | -1.9 | 1000 | Horz gas coll pipe |
| BALLGW16 | 26 | 20.7 | 6.9 | 22 | 0 | <<< | -1.76 | 1000 | Horz gas coll pipe |
| BALLGW17 | 0.6 | 10.5 | 7.5 | 0 | 0 | <<< | 0.52 | 1003 | perimeter |
| BALLGW18 | 0 | 2.7 | 17.6 | 0 | 0 | <<< | 2.75 | 1003 | perimeter |
| BALLGW19 | 15 | 11.8 | 10.7 | 1 | 0 | <<< | 1.54 | 1002 | perimeter |
| BALLGW20 | 62 | 36 | 1.2 | 8 | 33 | <<< | -7.1 | 999 | Northern capped area |
| BALLGW21 | 44 | 22.7 | 4.4 | 10 | 0 | <<< | 1.23 | 999 | Northern capped area |
| BALLGW22 | 17 | 10.7 | 14 | 7 | 5 | <<< | -10.22 | 1000 | Northern capped area |
| BALLGW23 | 14 | 11.3 | 13.3 | 4 | 0 | <<< | 0.84 | 1000 | Northern capped area |
| BALLGW24 | 17 | 10.8 | 13.9 | 5 | 0 | <<< | 0.66 | 1000 | Northern capped area |
| BALLGW25 | 12 | 7.7 | 16 | 7 | 0 | <<< | -12.05 | 999 | Northern capped area |
| BALLGW26 | 45 | 30.1 | 1.5 | 7 | 4 | <<< | -4.73 | 1000 | Northern capped area |
| BALLGW27 | 42 | 27.7 | 4.7 | 5 | 0 | <<< | -8.04 | 999 | Northern capped area |
| BALLGW28 | 65 | 34.4 | 0 | 8 | 62 | <<< | -5.36 | 1000 | Vertical wells into Cell 1 |
| BALLGW29 | 61 | 35.6 | 0.6 | 8 | 40 | <<< | -2.4 | 1000 | Vertical wells into Cell 1 |
| BALLGW30 | 62 | 36.9 | 0 | 15 | 11 | <<< | -5.36 | 1000 | Vertical wells into Cell 1 |
| BALLGW31 | 63 | 36.6 | 0.4 | 11 | 40 | <<< | -5.4 | 1000 | Vertical wells into Cell 1 |
| BALLGW32 | 64 | 36.4 | 0.5 | 10 | 24 | <<< | -9.97 | 1000 | Vertical wells into Cell 1 |
| BALLGW33 | 64 | 35.3 | 0.3 | 8 | 25 | <<< | -2.22 | 1000 | Vertical wells into Cell 1 |
| BALLGW34 | 62 | 37 | 0.2 | 10 | 147 | <<< | -3.98 | 1000 | Vertical wells into Cell 1 |
| BALLGW35 | 62 | 36.3 | 1.2 | 12 | 3 | <<< | -5.19 | 1000 | Vertical wells into Cell 1 |
| BALLGW36 | 62 | 37.5 | 0.5 | 10 | 32766 | <<< | -2.21 | 1000 | Vertical wells into Cell 1 |
| BALLGW37 | 62 | 38.1 | 0 | 17 | 14 | <<< | -14.4 | 1000 | Vertical wells Under Cell 2 |
| BALLGW38 | 60 | 38.5 | 0.1 | 7 | 5 | <<< | -6.94 | 1000 | Vertical wells Under Cell 2 |
| BALLGW39 | 61 | 37.5 | 0.1 | 6 | 10 | <<< | -11 | 1000 | Vertical wells Under Cell 2 |
| BALLGW40 | 59 | 40.2 | 0 | 7 | 130 | <<< | -10.56 | 1000 | Vertical wells Under Cell 2 |
| BALLGW41 | 64 | 36.3 | 0 | 7 | 17 | <<< | -3.2 | 1000 | Vertical wells Under Cell 2 |
| BALLGW42 | 61 | 39.2 | 0 | 8 | 49 | <<< | -14.19 | 1000 | Vertical wells Under Cell 2 |
| BALLGW43 | 61 | 38.4 | 0.2 | 5 | 42 | <<< | -10.04 | 1001 | Vertical wells Under Cell 2 |
| BALLGW44 | 61 | 38.8 | 0 | 11 | 44 | <<< | -6.84 | 1000 | Vertical wells Under Cell 2 |
| BALLGW45 | 58 | 42 | 0 | 3 | 25 | <<< | -3.19 | 1000 | Vertical wells Under Cell 2 |
| BALLGW46 | 61 | 38.3 | 0.6 | 13 | 34 | <<< | -6.87 | 1000 | Vertical wells Under Cell 2 |
| BALLGW47 | 60 | 38.6 | 0 | 10 | 4 | <<< | -6.86 | 1000 | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Date: 17/07/08

Personnel: Gerry Bourke

Temperature: as shown

Address: Killala Rd, Ballina

Analytical Range:

Instrument: GA2000

Pressure: As Shown

| Well No. | CH4 | CO2 | O2 | H2S | CO | Temp. | Rel | Barometric | Comments |
|----------|------|------|------|-------|-----|-------|----------|------------|-----------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | Pressure | Pressure | |
| BALLGW08 | | | | | | | | | perimeter |
| BALLGW09 | | | | | | | | | perimeter |
| BALLGW12 | | | | | | | | | perimeter |
| BALLGW13 | | | | | | | | | perimeter |
| BALLGW14 | 42 | 27.3 | 3.8 | 0 | 9 | <<< | -5.19 | 1001 | Horz gas coll pipe |
| BALLGW15 | 34 | 23.6 | 7 | 1 | 26 | <<< | -5.44 | 1001 | Horz gas coll pipe |
| BALLGW16 | 30 | 22.8 | 6.2 | 0 | 18 | <<< | -4.58 | 1001 | Horz gas coll pipe |
| BALLGW17 | | | | | | | | | perimeter |
| BALLGW18 | | | | | | | | | perimeter |
| BALLGW19 | | | | | | | | | perimeter |
| BALLGW20 | 54 | 33.3 | 1.9 | 39 | 8 | <<< | -12.22 | 1000 | Northern capped area |
| BALLGW21 | 50 | 26.9 | 2 | 0 | 9 | <<< | 2.26 | 1001 | Northern capped area |
| BALLGW22 | 36 | 22.3 | 7.6 | 16 | 6 | <<< | -10.23 | 1000 | Northern capped area |
| BALLGW24 | 17 | 11.2 | 13.3 | 0 | 5 | <<< | 0.82 | 1001 | Northern capped area |
| BALLGW25 | 41 | 23.2 | 6.6 | 0 | 7 | <<< | 5.77 | 1001 | Northern capped area |
| BALLGW26 | 59 | 35.2 | 0.4 | 10 | 5 | <<< | -10.74 | 1001 | Northern capped area |
| BALLGW27 | 0 | 0 | 20.3 | 0 | 4 | <<< | -12.99 | 1001 | Northern capped area |
| BALLGW28 | 64 | 35 | 0 | 85 | 9 | <<< | -13.86 | 1001 | Vertical wells into Cell 1 |
| BALLGW29 | 60 | 36.1 | 0.5 | 60 | 10 | <<< | -13.3 | 1001 | Vertical wells into Cell 1 |
| BALLGW30 | 63 | 36.9 | 0 | 27 | 20 | <<< | -13.73 | 1000 | Vertical wells into Cell 1 |
| BALLGW31 | 62 | 37 | 0 | 61 | 11 | <<< | -13.67 | 1001 | Vertical wells into Cell 1 |
| BALLGW32 | 63 | 36.4 | 0 | 31 | 10 | <<< | -13.82 | 1001 | Vertical wells into Cell 1 |
| BALLGW33 | 63 | 35.9 | 0 | 57 | 8 | <<< | -13.65 | 1001 | Vertical wells into Cell 1 |
| BALLGW34 | 62 | 36.9 | 0.1 | 102 | 16 | <<< | -13.81 | 1001 | Vertical wells into Cell 1 |
| BALLGW35 | 59 | 35 | 0.9 | 2 | 13 | <<< | -13.73 | 1001 | Vertical wells into Cell 1 |
| BALLGW36 | 61 | 37.5 | 0 | 32766 | 13 | <<< | -13.81 | 1001 | Vertical wells into Cell 1 |
| BALLGW37 | 61 | 38.2 | 0 | 29 | 19 | <<< | -16.95 | 1000 | Vertical wells Under Cell 2 |
| BALLGW38 | 61 | 38.5 | 0 | 17 | 9 | <<< | -17.22 | 1002 | Vertical wells Under Cell 2 |
| BALLGW39 | 59 | 37.1 | 0.4 | 16 | 14 | <<< | -16.88 | 1001 | Vertical wells Under Cell 2 |
| BALLGW40 | 59 | 40.1 | 0 | 127 | 10 | <<< | -16.84 | 1002 | Vertical wells Under Cell 2 |
| BALLGW41 | 63 | 36.2 | 0 | 18 | 5 | <<< | -16.77 | 1002 | Vertical wells Under Cell 2 |
| BALLGW42 | 61 | 39.3 | 0 | 35 | 0 | <<< | -18.26 | 1004 | Vertical wells Under Cell 2 |
| BALLGW43 | 61 | 38.8 | 0 | 45 | 1 | <<< | -17.97 | 1005 | Vertical wells Under Cell 2 |
| BALLGW44 | 61 | 39.6 | 0 | 43 | 6 | <<< | -17.97 | 1005 | Vertical wells Under Cell 2 |
| BALLGW45 | 58 | 42.2 | 0 | 23 | 4 | <<< | -18 | 1004 | Vertical wells Under Cell 2 |
| BALLGW46 | 61 | 39.2 | 0 | 47 | 12 | <<< | -17.97 | 1005 | Vertical wells Under Cell 2 |
| BALLGW47 | 61 | 39.7 | 0 | 13 | 7 | <<< | -18.24 | 1005 | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Address: Killala Rd, Ballina

Date:15/08/08

Analytical Range:

Personnel:Gerry Bourke

Instrument: GA2000

Temperature:as shown

Pressure:As Shown

| Well No. | CH4 | CO2 | O2 | H2S | CO | Temp. | Rel | Barometric | Comments |
|----------|------|------|------|-----|-------|-------|----------|------------|-----------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | Pressure | Pressure | |
| BALLGW08 | 0 | 1.2 | 18.8 | 2 | 0 | | -1.21 | 1013 | perimeter |
| BALLGW09 | 0 | 4.3 | 15.2 | 1 | 0 | | 0.53 | 1013 | perimeter |
| BALLGW12 | 0 | 2.7 | 13.6 | 1 | 0 | | -0.22 | 1013 | perimeter |
| BALLGW13 | | | | | | | | | perimeter |
| BALLGW14 | 33 | 21.8 | 6.9 | 4 | 0 | | -0.22 | 1013 | Horz gas coll pipe |
| BALLGW15 | 0 | 1.8 | 18.8 | 4 | 0 | | -6 | 1012 | Horz gas coll pipe |
| BALLGW16 | 36 | 25.9 | 4.8 | 11 | 0 | | -6.35 | 1012 | Horz gas coll pipe |
| BALLGW17 | 0 | 5 | 13.3 | 3 | 0 | | 0.68 | 1013 | perimeter |
| BALLGW18 | 0 | 3.9 | 16.6 | 0 | 0 | | 0.73 | 1013 | perimeter |
| BALLGW19 | 34 | 23.1 | 4.6 | 3 | 0 | | 1.2 | 1012 | perimeter |
| BALLGW20 | 60 | 36.2 | 0.6 | 5 | 31 | | -14.55 | 1012 | Northern capped area |
| BALLGW21 | 10 | 6.7 | 17.3 | 1 | 0 | | -1.57 | 1013 | Northern capped area |
| BALLGW22 | 43 | 25.9 | 6 | 3 | 19 | | -12.96 | 1012 | Northern capped area |
| BALLGW25 | 62 | 36.2 | 0.2 | 9 | 149 | | 0.17 | 1012 | Northern capped area |
| BALLGW26 | 18 | 11 | 14.6 | 8 | 8 | | -11.14 | 1012 | Northern capped area |
| BALLGW27 | 0 | 0 | 20.9 | 1 | 0 | | -14.05 | 1012 | Northern capped area |
| BALLGW28 | 58 | 35.7 | 1 | 10 | 52 | | -14.47 | 1012 | Vertical wells into Cell 1 |
| BALLGW29 | 62 | 37.4 | 0 | 16 | 25 | | -14.44 | 1012 | Vertical wells into Cell 1 |
| BALLGW30 | | | | | | | | | Vertical wells into Cell 1 |
| BALLGW31 | 63 | 37.4 | 0 | 10 | 68 | | -14.29 | 1012 | Vertical wells into Cell 1 |
| BALLGW32 | 63 | 36.9 | 0 | 11 | 32 | | -14.45 | 1012 | Vertical wells into Cell 1 |
| BALLGW33 | 64 | 36.8 | 0 | 7 | 53 | | -14.37 | 1012 | Vertical wells into Cell 1 |
| BALLGW34 | 63 | 37.2 | 0 | 12 | 144 | | -4.42 | 1012 | Vertical wells into Cell 1 |
| BALLGW35 | 51 | 31.8 | 2.9 | 9 | 3 | | -14.16 | 1012 | Vertical wells into Cell 1 |
| BALLGW36 | 62 | 38.3 | 0 | 15 | 32766 | | -14.44 | 1012 | Vertical wells into Cell 1 |
| BALLGW37 | 45 | 30.7 | 2.7 | 4 | 3 | | 0.39 | 1012 | Vertical wells Under Cell 2 |
| BALLGW38 | 36 | 26.3 | 4.6 | 13 | 1 | | 0.39 | 1012 | Vertical wells Under Cell 2 |
| BALLGW39 | 48 | 29.9 | 3.5 | 5 | 100 | | 0.19 | 1012 | Vertical wells Under Cell 2 |
| BALLGW40 | 60 | 40.2 | 0 | 8 | 111 | | -18.16 | 1013 | Vertical wells Under Cell 2 |
| BALLGW41 | 63 | 37 | 0 | 8 | 23 | | -18.14 | 1013 | Vertical wells Under Cell 2 |
| BALLGW42 | 61 | 39.4 | 0 | 7 | 53 | | -17.95 | 1013 | Vertical wells Under Cell 2 |
| BALLGW43 | 61 | 38.2 | 0 | 10 | 57 | | -18.09 | 1013 | Vertical wells Under Cell 2 |
| BALLGW44 | 62 | 38.4 | 0 | 10 | 42 | | -18.05 | 1013 | Vertical wells Under Cell 2 |
| BALLGW45 | 58 | 40.2 | 0 | 9 | 36 | | -18.13 | 1013 | Vertical wells Under Cell 2 |
| BALLGW46 | 60 | 38.5 | 0.1 | 8 | 40 | | -18.22 | 1013 | Vertical wells Under Cell 2 |
| BALLGW47 | 61 | 38.8 | 0 | 7 | 3 | | -18.18 | 1013 | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Address: Killala Rd, Ballina

Date: 20/09/08

Analytical Range:

Personnel: Gerry Bourke

Instrument: GA2000

Temperature: as shown

Pressure: 1010mbar

| Well No. | CH4 | CO2 | O2 | H2S | CO | Temp. | Rel | Barometric | Comments |
|----------|------|------|------|-----|-------|-------|----------|------------|-----------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | Pressure | Pressure | |
| BALLGW08 | 0 | 1.4 | 15.9 | 0 | 0 | 9 | | | perimeter |
| BALLGW09 | 0 | 1.1 | 19.4 | 0 | 0 | 10 | | | perimeter |
| BALLGW12 | 0 | 0.8 | 15.7 | 0 | 0 | 8.4 | | | perimeter |
| BALLGW13 | 0 | 0 | 20.8 | 0 | 0 | 7.6 | | | perimeter |
| SWDRAIN1 | 0 | 0 | 21.5 | 0 | 0 | 17.3 | | | perimeter |
| BALLGW14 | 27 | 18.2 | 8.7 | 0 | 3 | 11 | | | Horz gas coll pipe |
| BALLGW15 | 18 | 22.3 | 1.9 | 9 | 2 | 11.4 | | | Horz gas coll pipe |
| BALLGW16 | 45 | 30.7 | 1.6 | 0 | 1 | 11 | | | Horz gas coll pipe |
| BALLGW17 | 0 | 0.1 | 19.8 | 0 | 0 | 10.8 | | | perimeter |
| BALLGW18 | 0 | 3 | 18 | 0 | 0 | 16.7 | | | perimeter |
| BALLGW19 | 44 | 18.1 | 0 | 0 | 0 | 10.5 | | | perimeter |
| BALLGW20 | 20 | 12.4 | 13.4 | 0 | 0 | 10.1 | | | Northern capped area |
| BALLGW21 | 30 | 19.2 | 10.3 | 2 | 17 | 8.4 | | | Northern capped area |
| BALLGW27 | 0 | 0 | 20.9 | 0 | 0 | 8.1 | | | Northern capped area |
| BALLGW28 | 54 | 31.5 | 0.9 | 10 | 93 | 8.2 | | | Vertical wells into Cell 1 |
| BALLGW29 | 65 | 35.2 | 0 | 2 | 65 | 7.1 | | | Vertical wells into Cell 1 |
| BALLGW30 | 65 | 37.5 | 0 | 9 | 27 | 6.7 | | | Vertical wells into Cell 1 |
| BALLGW31 | 65 | 37.6 | 0 | 4 | 88 | 7.1 | | | Vertical wells into Cell 1 |
| BALLGW32 | 67 | 36.4 | 0 | 9 | 37 | 7 | | | Vertical wells into Cell 1 |
| BALLGW33 | 66 | 35.6 | 0 | 2 | 90 | 6.9 | | | Vertical wells into Cell 1 |
| BALLGW34 | 66 | 36.8 | 0 | 9 | 120 | 6.9 | | | Vertical wells into Cell 1 |
| BALLGW35 | 60 | 33.5 | 1.2 | 2 | 10 | 6.9 | | | Vertical wells into Cell 1 |
| BALLGW36 | 65 | 37.4 | 0 | 3 | 32766 | 6.9 | | | Vertical wells into Cell 1 |
| BALLGW37 | 57 | 35.8 | 0.4 | 5 | 30 | 6.8 | | | Vertical wells Under Cell 2 |
| BALLGW38 | 56 | 34.7 | 0.6 | 7 | 20 | 6.7 | | | Vertical wells Under Cell 2 |
| BALLGW39 | 61 | 37.8 | 0 | 0 | 15 | 6.5 | | | Vertical wells Under Cell 2 |
| BALLGW40 | 62 | 40.1 | 0 | 7 | 93 | 6.3 | | | Vertical wells Under Cell 2 |
| BALLGW41 | 57 | 34.7 | 0.6 | 5 | 21 | 6.3 | | | Vertical wells Under Cell 2 |
| BALLGW42 | 66 | 37.8 | 0 | 0 | 36 | 7 | | | Vertical wells Under Cell 2 |
| BALLGW43 | 64 | 38 | 0 | 5 | 39 | 7.4 | | | Vertical wells Under Cell 2 |
| BALLGW44 | 65 | 37.3 | 0 | 16 | 93 | 7.3 | | | Vertical wells Under Cell 2 |
| BALLGW45 | 62 | 40.7 | 0 | 16 | 23 | 7.1 | | | Vertical wells Under Cell 2 |
| BALLGW46 | 41 | 27.5 | 3.1 | 7 | 3 | 7.3 | | | Vertical wells Under Cell 2 |
| BALLGW47 | 41 | 27.3 | 3.4 | 8 | 2 | 7.1 | | | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Address: Killala Rd, Ballina

Date:11/10/08

Analytical Range:

Personnel:Gerry Bourke

Instrument: GA2000

Temperature:as shown

Pressure:1012mbar

| Well No. | CH4 | CO2 | O2 | H2S | CO | Temp. | Rel | Barometric | Comments |
|----------|------|------|------|-----|-------|-------|----------|------------|-----------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | Pressure | Pressure | |
| BALLGW08 | 0 | 0 | 20.7 | 0 | 0 | <<< | -0.2 | 1006 | perimeter |
| BALLGW09 | 0 | 1.6 | 19.1 | 0 | 0 | 12.1 | -1.09 | 1000 | perimeter |
| BALLGW12 | 0 | 2 | 14.2 | 0 | 0 | 13.8 | 1.43 | 998 | perimeter |
| BALLGW13 | 0 | 0.1 | 20.6 | 1 | 0 | 14.2 | 2.65 | 997 | perimeter |
| SWDRAIN1 | | | | | | | | | perimeter |
| BALLGW14 | 43 | 26.1 | 5.1 | 0 | 0 | <<< | -1.16 | 1013 | Horz gas coll pipe |
| BALLGW15 | 0.8 | 2 | 18.4 | 3 | 0 | <<< | -8.25 | 1013 | Horz gas coll pipe |
| BALLGW16 | 41 | 27.4 | 4.1 | 8 | 0 | <<< | -8.52 | 1013 | Horz gas coll pipe |
| BALLGW17 | 0.3 | 8.6 | 10.3 | 0 | 0 | <<< | -0.02 | 1002 | perimeter |
| BALLGW18 | 0 | 0 | 20.2 | 0 | 0 | <<< | -21.69 | 1002 | perimeter |
| BALLGW19 | 22 | 16.5 | 6.5 | 1 | 0 | <<< | -0.22 | 1002 | perimeter |
| BALLGW20 | 63 | 37 | 0.4 | 2 | 41 | <<< | -16.94 | 1012 | Northern capped area |
| BALLGW21 | 20 | 11.6 | 14 | 3 | 11 | <<< | -4.62 | 1012 | Northern capped area |
| BALLGW22 | 24 | 13.5 | 12.9 | 1 | 13 | <<< | -15.73 | 1012 | Northern capped area |
| BALLGW25 | 63 | 34.5 | 0.8 | 8 | 99 | <<< | -8.21 | 1012 | Northern capped area |
| BALLGW26 | 48 | 28.3 | 4.8 | 0 | 14 | <<< | -12.23 | 1012 | Northern capped area |
| BALLGW27 | 6.9 | 3.9 | 18.3 | 0 | 14 | <<< | -10.21 | 1012 | Northern capped area |
| BALLGW28 | 65 | 35.8 | 0.1 | 2 | 149 | <<< | -16.9 | 1012 | Vertical wells into Cell 1 |
| BALLGW29 | 64 | 37.6 | 0 | 6 | 124 | <<< | -16.86 | 1012 | Vertical wells into Cell 1 |
| BALLGW30 | 64 | 37.3 | 0 | 17 | 27 | <<< | -16.82 | 1012 | Vertical wells into Cell 1 |
| BALLGW31 | 64 | 37.4 | 0 | 1 | 74 | <<< | -8.25 | 1012 | Vertical wells into Cell 1 |
| BALLGW32 | 64 | 37 | 0 | 8 | 33 | <<< | -8.18 | 1013 | Vertical wells into Cell 1 |
| BALLGW33 | 65 | 36.6 | 0 | 4 | 52 | <<< | -5.57 | 1012 | Vertical wells into Cell 1 |
| BALLGW34 | 64 | 37.6 | 0.1 | 8 | 110 | <<< | -5.91 | 1012 | Vertical wells into Cell 1 |
| BALLGW35 | 61 | 35.1 | 0.9 | 2 | 3 | <<< | -16.86 | 1012 | Vertical wells into Cell 1 |
| BALLGW36 | 63 | 38.9 | 0 | 7 | 32766 | <<< | -16.8 | 1012 | Vertical wells into Cell 1 |
| BALLGW37 | 63 | 39.1 | 0.1 | 14 | 32 | <<< | -15.12 | 1015 | Vertical wells Under Cell 2 |
| BALLGW38 | 63 | 38.6 | 0 | 4 | 55 | <<< | -20.52 | 1015 | Vertical wells Under Cell 2 |
| BALLGW39 | 63 | 37.9 | 0.2 | 3 | 28 | <<< | -20.29 | 1015 | Vertical wells Under Cell 2 |
| BALLGW40 | 61 | 40.5 | 0 | 5 | 135 | <<< | -20.46 | 1015 | Vertical wells Under Cell 2 |
| BALLGW41 | 64 | 37.5 | 0 | 3 | 19 | <<< | -20.03 | 1015 | Vertical wells Under Cell 2 |
| BALLGW42 | 62 | 39.7 | 0 | 4 | 54 | <<< | -20.1 | 1014 | Vertical wells Under Cell 2 |
| BALLGW43 | 63 | 38.4 | 0 | 7 | 48 | <<< | -20.23 | 1015 | Vertical wells Under Cell 2 |
| BALLGW44 | 63 | 39.1 | 0 | 2 | 44 | <<< | -19.97 | 1015 | Vertical wells Under Cell 2 |
| BALLGW45 | 61 | 40.8 | 0 | 4 | 36 | <<< | -20.27 | 1015 | Vertical wells Under Cell 2 |
| BALLGW46 | 63 | 39.1 | 0 | 4 | 40 | <<< | -20.5 | 1015 | Vertical wells Under Cell 2 |
| BALLGW47 | 63 | 38.8 | 0 | 4 | 45 | <<< | -20.21 | 1015 | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Date:10/11/09

Personnel:Gerry Bourke

Temperature:as shown

Address: Killala Rd, Ballina

Analytical Range:

Instrument: GA2000

Pressure:1004mbar

| Well No. | CH4 | CO2 | O2 | H2S | CO | Temp. | Rel | Barometric | Comments |
|----------|------|------|------|-----|-------|-------|----------|------------|-----------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | Pressure | Pressure | |
| BALLGW08 | 0 | 3.7 | 14.9 | 0 | 0 | <<< | -0.3 | 988 | perimeter |
| BALLGW09 | 0 | 2.2 | 18.2 | 0 | 0 | <<< | 0.44 | 990 | perimeter |
| BALLGW12 | 0 | 3.4 | 13.6 | 0 | 0 | <<< | -0.15 | 988 | perimeter |
| BALLGW13 | 0 | 0.1 | 20.8 | 0 | 0 | <<< | -0.01 | 988 | perimeter |
| BALLGW14 | 42 | 27.3 | 3.8 | 0 | 9 | <<< | -5.19 | 1001 | Horz gas coll pipe |
| BALLGW15 | 34 | 23.6 | 7 | 1 | 26 | <<< | -5.44 | 1001 | Horz gas coll pipe |
| BALLGW16 | 30 | 23.7 | 3.8 | 0 | 0 | <<< | -37.04 | 989 | Horz gas coll pipe |
| BALLGW17 | 0.1 | 8.9 | 5.2 | 0 | 0 | <<< | 0.17 | 988 | perimeter |
| BALLGW18 | 0.1 | 3.9 | 16 | 0 | 0 | <<< | 0.83 | 988 | perimeter |
| BALLGW19 | 41 | 22.6 | 0.4 | 0 | 0 | <<< | -0.4 | 988 | perimeter |
| BALLGW20 | 63 | 37 | 0.4 | 2 | 41 | <<< | -16.94 | 1012 | Northern capped area |
| BALLGW21 | 20 | 11.6 | 14 | 3 | 11 | <<< | -4.62 | 1012 | Northern capped area |
| BALLGW22 | 24 | 13.5 | 12.9 | 1 | 13 | <<< | -15.73 | 1012 | Northern capped area |
| BALLGW25 | 63 | 34.5 | 0.8 | 8 | 99 | <<< | -8.21 | 1012 | Northern capped area |
| BALLGW26 | 48 | 28.3 | 4.8 | 0 | 14 | <<< | -12.23 | 1012 | Northern capped area |
| BALLGW27 | 6.9 | 3.9 | 18.3 | 0 | 14 | <<< | -10.21 | 1012 | Northern capped area |
| BALLGW28 | 53 | 31.7 | 1.6 | 3 | 49 | <<< | -36.63 | 988 | Vertical wells into Cell 1 |
| BALLGW29 | 65 | 37.4 | 0 | 1 | 84 | <<< | -36.76 | 988 | Vertical wells into Cell 1 |
| BALLGW30 | 66 | 37.5 | 0 | 10 | 20 | <<< | -36.86 | 988 | Vertical wells into Cell 1 |
| BALLGW31 | 66 | 37.8 | 0 | 2 | 58 | <<< | -36.82 | 988 | Vertical wells into Cell 1 |
| BALLGW32 | 66 | 37 | 0 | 7 | 27 | <<< | -36.87 | 988 | Vertical wells into Cell 1 |
| BALLGW33 | 56 | 33.9 | 0 | 3 | 40 | <<< | -36.9 | 988 | Vertical wells into Cell 1 |
| BALLGW34 | 66 | 37.8 | 0 | 6 | 76 | <<< | -19 | 987 | Vertical wells into Cell 1 |
| BALLGW35 | 64 | 39.2 | 0 | 2 | 32766 | <<< | -36.85 | 987 | Vertical wells into Cell 1 |
| BALLGW36 | 63 | 40 | 0 | 8 | 25 | <<< | -41.36 | 988 | Vertical wells into Cell 1 |
| BALLGW37 | 62 | 38.1 | 0.3 | 0 | 23 | <<< | -41.37 | 988 | Vertical wells Under Cell 2 |
| BALLGW38 | 60 | 36.2 | 1 | 2 | 25 | <<< | -41.36 | 988 | Vertical wells Under Cell 2 |
| BALLGW39 | 62 | 41.1 | 0 | 2 | 132 | <<< | -41.24 | 988 | Vertical wells Under Cell 2 |
| BALLGW40 | 65 | 38 | 0 | 2 | 15 | <<< | -41.21 | 988 | Vertical wells Under Cell 2 |
| BALLGW41 | 63 | 41 | 0 | 5 | 51 | <<< | -41.21 | 988 | Vertical wells Under Cell 2 |
| BALLGW42 | 64 | 39.2 | 0 | 3 | 41 | <<< | -41.22 | 988 | Vertical wells Under Cell 2 |
| BALLGW43 | 63 | 40.6 | 0 | 11 | 47 | <<< | -41.27 | 988 | Vertical wells Under Cell 2 |
| BALLGW45 | 61 | 43.1 | 0 | 6 | 22 | <<< | -41.19 | 988 | Vertical wells Under Cell 2 |
| BALLGW46 | 63 | 40.5 | 0 | 9 | 108 | <<< | -41.14 | 988 | Vertical wells Under Cell 2 |
| BALLGW47 | 64 | 39.6 | 0 | 4 | 67 | <<< | -41.13 | 988 | Vertical wells Under Cell 2 |

Monthly Gaswell Monitoring Record

Site name: Rathroeen Landfill

Address: Killala Rd, Ballina

Date:

Analytical Range:

Personnel: Gerry Bourke

Instrument: GA2000

Temperature: as shown

Pressure: 1004mbar

| Well No. | CH4 | CO2 | O2 | H2S | CO | Temp. | Rel | Barometric | Comments |
|----------|------|------|------|-----|-------|-------|----------|------------|-----------------------------|
| | %v/v | %v/v | %v/v | ppm | ppm | | Pressure | Pressure | |
| BALLGW08 | 0 | 0 | 20.7 | 0 | 0 | <<< | -0.2 | 1006 | perimeter |
| BALLGW09 | 0 | 1.6 | 19.1 | 0 | 0 | 12.1 | -1.09 | 1000 | perimeter |
| BALLGW12 | 0 | 2 | 14.2 | 0 | 0 | 13.8 | 1.43 | 998 | perimeter |
| BALLGW13 | 0 | 0.1 | 20.6 | 1 | 0 | 14.2 | 2.65 | 997 | perimeter |
| SWDRAIN1 | 0 | 0 | 20.7 | 3 | 0 | 13.6 | -4.91 | 998 | perimeter |
| BALLGW14 | 0 | 0.1 | 20.7 | 0 | 0 | 11 | -0.47 | 1014 | Horz gas coll pipe |
| BALLGW15 | 49.7 | 34.5 | 0.4 | 16 | 13 | 14.3 | -7.98 | 999 | Horz gas coll pipe |
| BALLGW16 | 3.4 | 2.5 | 18.8 | 7 | 0 | 14.3 | -1.87 | 999 | Horz gas coll pipe |
| BALLGW17 | 0 | 5.2 | 10.8 | 0 | 0 | 13.4 | 2.04 | 998 | perimeter |
| BALLGW18 | 0 | 4 | 15.7 | 0 | 0 | 13.2 | 2.32 | 998 | perimeter |
| BALLGW19 | 72.7 | 23.4 | 0 | 3 | 0 | 11.4 | 0.16 | 998 | perimeter |
| BALLGW20 | 54.2 | 31.5 | 2.3 | 2 | 12 | 11.5 | -7.72 | 998 | Northern capped area |
| BALLGW22 | 50.4 | 31.4 | 2.5 | 1 | 14 | 10.9 | -11.94 | 988 | Northern capped area |
| BALLGW25 | 62.6 | 34.3 | 0.5 | 2 | 79 | 11.2 | -0.9 | 998 | Northern capped area |
| BALLGW26 | 63.5 | 35.1 | 0 | 0 | 18 | 11.3 | -7.11 | 998 | Northern capped area |
| BALLGW27 | 52.2 | 28.4 | 3.4 | 0 | 0 | 11.7 | -3.63 | 998 | Northern capped area |
| BALLGW28 | 65.6 | 32.3 | 0 | 7 | 36 | 12.3 | -13.04 | 998 | Vertical wells into Cell 1 |
| BALLGW29 | 64.2 | 33.9 | 0.1 | 4 | 20 | 12.4 | -9.64 | 997 | Vertical wells into Cell 1 |
| BALLGW30 | 64.8 | 36.2 | 0 | 17 | 19 | 12.3 | -12.97 | 997 | Vertical wells into Cell 1 |
| BALLGW31 | 65 | 35.8 | 0 | 0 | 52 | 12.8 | -12.97 | 997 | Vertical wells into Cell 1 |
| BALLGW32 | 65.8 | 35.1 | 0 | 5 | 19 | 12.9 | -12.88 | 997 | Vertical wells into Cell 1 |
| BALLGW33 | 66.9 | 33.6 | 0 | 10 | 49 | 12.9 | -12.96 | 997 | Vertical wells into Cell 1 |
| BALLGW34 | 63.4 | 37 | 0 | 13 | 159 | 13.2 | -12.99 | 997 | Vertical wells into Cell 1 |
| BALLGW35 | 65.7 | 34.6 | 0 | 2 | 0 | 13.2 | -12.86 | 997 | Vertical wells into Cell 1 |
| BALLGW36 | 63.8 | 37.1 | 0 | 14 | 32766 | 13.4 | -12.74 | 997 | Vertical wells into Cell 1 |
| BALLGW37 | 61.9 | 38.6 | 0 | 11 | 19 | 13.8 | -13.57 | 999 | Vertical wells Under Cell 2 |
| BALLGW38 | 60.9 | 37.5 | 0 | 4 | 17 | 13.8 | -9.8 | 999 | Vertical wells Under Cell 2 |
| BALLGW39 | 60.8 | 35.9 | 0.3 | 7 | 10 | 13.9 | -10.06 | 999 | Vertical wells Under Cell 2 |
| BALLGW40 | 60.1 | 40 | 0 | 12 | 119 | 13.9 | -11.67 | 999 | Vertical wells Under Cell 2 |
| BALLGW41 | 65.3 | 35.2 | 0 | 6 | 16 | 11.9 | -15.48 | 989 | Vertical wells Under Cell 2 |
| BALLGW42 | 61.8 | 39.1 | 0 | 8 | 43 | 13 | -7.42 | 989 | Vertical wells Under Cell 2 |
| BALLGW43 | 61.9 | 38.4 | 0 | 8 | 43 | 12.7 | -15.66 | 989 | Vertical wells Under Cell 2 |
| BALLGW44 | 64.3 | 36.1 | 0 | 8 | 16 | 12.2 | -7.46 | 989 | Vertical wells Under Cell 2 |
| BALLGW45 | 57.8 | 42.1 | 0 | 5 | 22 | 12.3 | -15.52 | 989 | Vertical wells Under Cell 2 |
| BALLGW46 | 62.2 | 37.7 | 0 | 11 | 21 | 12.7 | -14.55 | 990 | Vertical wells Under Cell 2 |
| BALLGW47 | 61.9 | 37.6 | 0 | 9 | 3 | 12.4 | -7.44 | 989 | Vertical wells Under Cell 2 |

Appendix C.

MW2

| Lab | | | | | |
|------------------------|---------------|------------|------------|----------|---------|
| Date | | 07/10/2008 | 06/03/2008 | 06.12.07 | 4.07.07 |
| | Units | | | | |
| Temp. | | | | | |
| D.O. | mg/l | 8.4 | 4.9 | 5.8 | 5.8 |
| pH | | 7.77 | 7.4 | 7.3 | 7.68 |
| Conductivity | uS/cm | 0.908 | 0.954 | 0.976 | 0.988 |
| Ammonical Nitrogen | mg/l N | 0.3 | <0.2 | <0.2 | <0.2 |
| Total Ox Nitrogen | mg/l N | <0.3 | <0.3 | <0.3 | <0.3 |
| Chloride | mg/l Cl | 40 | 39 | 40 | 40 |
| Total Carbon | mg/l | | | | |
| Total Inorganic Carbon | mg/l | | | | |
| Total Organic Carbon | mg/l C | 7 | 6 | 7 | 5 |
| Total Coliforms | No/100ml | 500 | 46 | 300 | 7 |
| Faecal Coliforms | No/100ml | 9 | 1 | 17 | 5 |
| Phenols | ug/l | 0.04 | 0.02 | <0.01 | <0.01 |
| Sodium | mg/l | 26.8 | 25.6 | 25.5 | 23 |
| Potassium | mg/l | 3.5 | 2.9 | 3.4 | 3.4 |
| Iron | ug/l | 0.45 | | | 4 |
| Lead | ug/l | <0.05 | | | <1 |
| List 1&2 Organics | | | | | |
| Magnesium | mg/l | 16.18 | | | 15.23 |
| Manganeese | ug/l | 0.61 | | | 240 |
| Mercury | ug/l | <0.05 | | | <0.05 |
| Total Alkalinity | mg/l CaCO3 | 380 | | | 460 |
| Sulphate | mg/l SO4 | 93 | | | 99 |
| Total Phosphorous | mg/l P | <0.05 | <0.05 | 0.07 | <0.05 |
| Orthphosphate | mg/l P | <0.03 | | | |
| Residue on evaporation | | | | | |
| Zinc | ug/l | <0.05 | | | 42 |
| Flouride | mg/l F | 0.6 | | | 0.5 |
| Calcium | mg/l | 161.7 | | | 186.6 |
| Cadmium | ug/l | <0.05 | | | <0.4 |
| Copper | ug/l | <0.05 | | | 8 |
| Cyanide | mg/l CN | <0.05 | | | <0.05 |
| Total Solids | mg/l | | | | 668 |
| Boron | ug/l | <0.05 | | | 34 |
| Chromium | ug/l | <0.05 | | | 10 |
| Dissolved Nickel | ug/l | <0.05 | | | 9 |
| nitrate as no3 | mg/l | 0.6 | | | |
| nitrite as no2 | mg/l | <0.05 | | | |

MW3

| Lab | | | | | |
|------------------------|---------------|------------|------------|----------|---------|
| Date | | 07/10/2008 | 06/03/2009 | 06.12.07 | 4.07.07 |
| | Units | | | | |
| Temp. | | | | | |
| D.O. | mg/l | 7.2 | 5.1 | 5.3 | 6.2 |
| pH | | 7.53 | 7.15 | 7.16 | 7.28 |
| Conductivity | uS/cm | 1.276 | 0.813 | 0.925 | 1.07 |
| Ammonical Nitrogen | mg/l N | 0.4 | 0.2 | <0.2 | <0.2 |
| Total Ox Nitrogen | mg/l N | 0.8 | <0.3 | <0.3 | <0.3 |
| Chloride | mg/l Cl | | 28 | 25 | 31 |
| Total Carbon | mg/l | | | | |
| Total Inorganic Carbon | mg/l | | | | |
| Total Organic Carbon | mg/l C | 31 | 4 | 7 | 5 |
| Mercury | ug/l | <0.05 | | | <0.05 |
| Faecal Coliforms | No/100ml | 31 | <1 | 6 | <1 |
| Total Coliforms | No/100ml | 600 | 15 | 86 | <1 |
| Sodium | mg/l | 46.4 | 20.7 | 19.5 | 18 |
| Potassium | mg/l | 11.9 | 8.4 | 10 | 9 |
| Phenols | ug/l | 0.03 | 0.02 | 0.01 | <0.01 |
| Total Phosphorous | mg/l P | <0.05 | <0.05 | 0.09 | <0.05 |
| Boron | ug/l | <0.05 | | | 31 |
| Cadmium | ug/l | | | | <0.4 |
| Calcium | mg/l | 242.7 | | | 225.2 |
| Chromium | ug/l | <0.05 | | | 11 |
| Copper | ug/l | <0.05 | | | 1 |
| Iron | ug/l | 0.17 | | | 21 |
| Lead | ug/l | <0.05 | | | <1 |
| Magnesium | mg/l | 15.6 | | | 11.04 |
| Manganeese | ug/l | 0.82 | | | 567 |
| Dissolved Nickel | ug/l | <0.05 | | | 10 |
| Zinc | ug/l | <0.05 | | | 11 |
| List 1&2 Organics | | | | | |
| Total Alkalinity | mg/l CaCO3 | 390 | | | 570 |
| Sulphate | mg/l SO4 | 358 | | | 64 |
| Orthphosphate | mg/l P | <0.03 | | | |
| Residue on evaporation | | | | | |
| Flouride | mg/l F | <0.1 | | | 0.2 |
| Cyanide | mg/l CN | <0.05 | | | <0.05 |
| Total Solids | mg/l | | | | 676 |
| nitrate as no3 | mg/l | | 3.5 | | |
| nitrite as no2 | mg/l | | 0.06 | | |

MW6

| Lab | | | | |
|------------------------|------------|------------|------------|---------|
| Date | | 07/10/2008 | 06/03/2008 | 4.07.07 |
| Units | | | | |
| Temp. | | | | |
| D.O. | mg/l | 7.5 | 4.6 | 4.1 |
| pH | | 7.71 | 7.21 | 7.27 |
| Conductivity | uS/cm | 0.813 | 0.805 | 0.75 |
| Ammonical Nitrogen | mg/l N | 0.5 | 1.9 | 2.5 |
| Total Ox Nitrogen | mg/l N | 0.8 | <1.5 | 2 |
| Chloride | mg/l Cl | 23 | 27 | 30 |
| Total Carbon | mg/l | | | |
| Total Inorganic Carbon | mg/l | | | |
| Total Organic Carbon | mg/l C | 6 | 11 | 8 |
| Total Coliforms | No/100ml | 400 | <1 | <1 |
| Faecal Coliforms | No/100ml | <1 | <1 | <1 |
| Phenols | ug/l | 0.03 | 0.01 | <0.01 |
| Sodium | mg/l | 16.3 | 18.7 | 18 |
| Potassium | mg/l | | 2.2 | 6.2 |
| Iron | ug/l | 0.07 | | 33 |
| Lead | ug/l | 0.07 | | <1 |
| List 1&2 Organics | | | | |
| Magnesium | mg/l | 14.02 | | 13.07 |
| Manganeese | ug/l | <0.05 | | 48 |
| Mercury | ug/l | <0.05 | | <0.05 |
| Total Alkalinity | mg/l CaCO3 | 340 | | 350 |
| Sulphate | mg/l SO4 | 104 | | 73 |
| Total Phosphorous | mg/l P | <0.05 | 0.23 | 0.56 |
| Orthphosphate | mg/l P | <0.03 | | |
| Residue on evaporation | | | | |
| Zinc | ug/l | <0.05 | | 7 |
| Flouride | mg/l F | 0.2 | | 0.3 |
| Calcium | mg/l | 159 | | 141.3 |
| Cadmium | ug/l | <0.05 | | <0.4 |
| Copper | ug/l | <0.05 | | 1 |
| Cyanide | mg/l CN | <0.05 | | <0.05 |
| Total Solids | mg/l | | | 1312 |
| Boron | ug/l | <0.05 | | 17 |
| Chromium | ug/l | <0.05 | | 8 |
| total Nickel | mg/l | <0.05 | | |
| dissolved potassium | mg/l | | 1.6 | |
| nitrate as no3 | mg/l | | 2.9 | |
| nitrite as no2 | mg/l | | 0.37 | |

MW7D

| Lab | | | |
|------------------------|------------|------------|------------|
| Date | | 07/10/2008 | 06/03/2008 |
| | Units | | |
| Temp. | | | |
| D.O. | mg/l | 1.4 | 5.5 |
| pH | | 7.73 | 8.04 |
| Conductivity | uS/cm | 1.008 | 0.777 |
| Ammonical Nitrogen | mg/l N | 4.4 | 0.4 |
| Total Ox Nitrogen | mg/l N | 1.6 | 4.1 |
| Chloride | mg/l Cl | | 38 |
| Total Carbon | mg/l | | |
| Total Inorganic Carbon | mg/l | | |
| Total Organic Carbon | mg/l C | 15 | 6 |
| Total Coliforms | No/100ml | 140000 | 2600 |
| Faecal Coliforms | No/100ml | 100 | 8 |
| Phenols | ug/l | 0.11 | 0.02 |
| Sodium | mg/l | 23.2 | 19..0 |
| Potassium | mg/l | 51.4 | 41.6 |
| Iron | ug/l | 0.12 | |
| Lead | ug/l | <0.05 | |
| List 1&2 Organics | | | |
| Magnesium | mg/l | 12.48 | |
| Manganeese | ug/l | 0.05 | |
| Mercury | ug/l | <0.05 | |
| Total Alkalinity | mg/l CaCO3 | 470 | |
| Sulphate | mg/l SO4 | 237 | |
| Total Phosphorous | mg/l P | <0.05 | 0.18 |
| Orthphosphate | mg/l P | 0.04 | |
| Residue on evaporation | | | |
| Zinc | ug/l | <0.05 | |
| Flouride | mg/l F | <0.01 | |
| Calcium | mg/l | 212.3 | |
| Cadmium | ug/l | <0.05 | |
| Copper | ug/l | <0.05 | |
| Cyanide | mg/l CN | <0.05 | |
| Total Solids | mg/l | | |
| Boron | ug/l | <0.05 | |
| Chromium | ug/l | <0.05 | |

MW8D

| Lab | | | |
|------------------------|------------|------------|------------|
| Date | | 07/10/2008 | 06/03/2008 |
| | Units | | |
| Temp. | | | |
| D.O. | mg/l | 6 | 4.5 |
| pH | | 7.57 | 7.22 |
| Conductivity | uS/cm | 1.006 | 0.902 |
| Ammonical Nitrogen | mg/l N | 0.7 | <0.2 |
| Total Ox Nitrogen | mg/l N | 3.5 | 2 |
| Chloride | mg/l Cl | | 61 |
| Total Carbon | mg/l | | |
| Total Inorganic Carbon | mg/l | | |
| Total Organic Carbon | mg/l C | 12 | 5 |
| Total Coliforms | No/100ml | 1600 | |
| Faecal Coliforms | No/100ml | 9 | 3 |
| Phenols | ug/l | 0.03 | 0.01 |
| Sodium | mg/l | 33.6 | 30 |
| Potassium | mg/l | 5 | 7.3 |
| Iron | ug/l | 0.15 | |
| Lead | ug/l | <0.05 | |
| Magnesium | mg/l | 8 | |
| Manganese | ug/l | 0.08 | |
| Mercury | ug/l | <0.05 | |
| Total Alkalinity | mg/l CaCO3 | 430 | |
| Sulphate | mg/l SO4 | 48 | |
| Total Phosphorous | mg/l P | 0.05 | 0.06 |
| Orthophosphate | mg/l P | 0.03 | |
| Zinc | ug/l | <0.05 | |
| Flouride | mg/l F | 0.02 | |
| Calcium | mg/l | 196.9 | |
| Cadmium | ug/l | <0.05 | |
| Copper | ug/l | <0.05 | |
| Cyanide | mg/l CN | <0.05 | |
| Boron | ug/l | <0.05 | |
| Chromium | ug/l | <0.05 | |
| Dissolved Nickel | ug/l | | |
| total nickel | mg/l | <0.05 | |
| chloride | mg/l | | 62 |
| nitrate as no3 | mg/l | | 13.4 |
| nitrite as no2 | mg/l | | 1.17 |

| | | | | |
|------------------------|------------|------------|------------|----------|
| MW9 | | | | |
| Lab | | | | |
| Date | | 07/10/2009 | 06/03/2008 | 06.12.07 |
| | Units | | | |
| Temp. | | | | |
| D.O. | mg/l | 3.4 | 5.3 | 5.6 |
| pH | | 7.93 | 7.73 | 7.56 |
| Conductivity | uS/cm | 0.836 | 0.833 | 0.857 |
| Ammonical Nitrogen | mg/l N | 1 | 1.4 | 0.4 |
| Total Ox Nitrogen | mg/l N | <0.3 | <0.3 | <0.3 |
| Chloride | mg/l Cl | 30 | 28 | 26 |
| Total Carbon | mg/l | | | |
| Total Inorganic Carbon | mg/l | | | |
| Total Organic Carbon | mg/l C | 3 | 3 | 5 |
| Total Coliforms | No/100ml | 100 | 7 | 2 |
| Faecal Coliforms | No/100ml | <1 | <1 | <1 |
| Phenols | ug/l | 0.02 | 0.01 | 0.01 |
| Sodium | mg/l | 37.8 | 38.1 | 38.5 |
| Potassium | mg/l | 6.7 | 6.1 | 6.5 |
| Iron | ug/l | <0.05 | | |
| Lead | ug/l | <0.05 | | |
| Magnesium | mg/l | 44.9 | | |
| Manganeese | ug/l | 0.26 | | |
| Mercury | ug/l | <0.05 | | |
| Total Alkalinity | mg/l CaCO3 | 430 | | |
| Sulphate | mg/l SO4 | 44 | | |
| Total Phosphorous | mg/l P | <0.05 | 0.58 | 0.07 |
| Orthphosphate | mg/l P | <0.03 | | |
| Zinc | ug/l | <0.05 | | |
| Flouride | mg/l F | 1.8 | | |
| Calcium | mg/l | 75.16 | | |
| Cadmium | ug/l | <0.05 | | |
| Copper | ug/l | <0.05 | | |
| Cyanide | mg/l CN | <0.05 | | |
| Total Solids | mg/l | | | |
| Boron | ug/l | 0.29 | | |
| Chromium | ug/l | <0.05 | | |
| Dissolved Nickel | mg/l | | | |
| Nickel | ug/l | <0.05 | | |
| nitrate as no3 | mg/l | | 0.5 | |
| nitrite as no2 | mg/l | <0.05 | | |

MW10D

| Lab | | | | |
|------------------------|------------|------------|------------|----------|
| Date | | 07/10/2009 | 06/03/2008 | 06.12.07 |
| | Units | | | |
| Temp. | | | | |
| D.O. | mg/l | 9.6 | 4.5 | 5.9 |
| pH | | 7.56 | 7.45 | 7.23 |
| Conductivity | uS/cm | 0.667 | 0.81 | 0.807 |
| Ammonical Nitrogen | mg/l N | 0.4 | <0.2 | <0.2 |
| Total Ox Nitrogen | mg/l N | <0.3 | <0.3 | 1.8 |
| Chloride | mg/l Cl | 32 | 33 | 24 |
| Total Carbon | mg/l | | | |
| Total Inorganic Carbon | mg/l | | | |
| Total Organic Carbon | mg/l C | 3 | <2 | 4 |
| Total Coliforms | No/100ml | 3200 | <1 | 2300 |
| Faecal Coliforms | No/100ml | 9 | <1 | 3 |
| Phenols | ug/l | 0.03 | 0.02 | 0.01 |
| Sodium | mg/l | 19.3 | 20.6 | 17.5 |
| Potassium | mg/l | 1.8 | 1.2 | 1.2 |
| Iron | ug/l | 0.12 | | |
| Lead | ug/l | <0.05 | | |
| List 1&2 Organics | | | | |
| Magnesium | mg/l | 14.92 | | |
| Manganeese | ug/l | 0.09 | | |
| Mercury | ug/l | <0.05 | | |
| Total Alkalinity | mg/l CaCO3 | 290 | | |
| Sulphate | mg/l SO4 | 24 | | |
| Total Phosphorous | mg/l P | <0.05 | 0.12 | <0.05 |
| Orthphosphate | mg/l P | <0.03 | | |
| Residue on evaporation | | | | |
| Zinc | ug/l | <0.05 | | |
| Flouride | mg/l F | 1.3 | | |
| Calcium | mg/l | 127.4 | | |
| Cadmium | ug/l | <0.05 | | |
| Copper | ug/l | <0.05 | | |
| Cyanide | mg/l CN | <0.05 | | |
| Total Solids | mg/l | | | |
| Boron | ug/l | <0.05 | | |
| Chromium | ug/l | <0.05 | | |
| Nickel | ug/l | <0.05 | | |
| nitrate as no3 | mg/l | | 1 | |
| nitrite as no2 | mg/l | <0.05 | | |

MW10S

| Lab | | | | |
|------------------------|----------|------------|------------|----------|
| Date | | 07/10/2008 | 06/03/2008 | 06.12.07 |
| | Units | | | |
| Temp. | | | | |
| D.O. | mg/l | 8.3 | 5.3 | 5 |
| pH | | 7.41 | 7.54 | 7.27 |
| Conductivity | uS/cm | 0.729 | 0.81 | 0.827 |
| Ammonical Nitrogen | mg/l N | 0.2 | <0.2 | <0.2 |
| Total Carbon | mg/l | | | |
| Total Inorganic Carbon | mg/l | | | 4 |
| | | | | |
| Faecal Coliforms | No/100ml | 2100 | 2 | 15 |
| Total Coliforms | No/100ml | 38 | 4 | 500 |
| Sodium | mg/l | 18.1 | 18.4 | 19 |
| Potassium | mg/l | 1.3 | 1.1 | 1.7 |
| Phenols | ug/l | 0.03 | 0.02 | 0.02 |
| Total Phosphorous | mg/l P | <0.05 | <0.05 | <0.05 |
| Total Organic Carbon | mg/l C | 2 | <2 | |
| Chloride | mg/l Cl | 29 | 29 | 26 |
| Orthphosphate | mg/l P | <0.03 | | |
| Total Ox Nitrogen | mg/l N | 1 | 1 | 1.7 |
| Iron | ug/l | 6.76 | | |
| Lead | ug/l | <0.05 | | |
| List 1&2 Organics | | | | |
| Magnesium | mg/l | 17.65 | | |
| Manganeese | ug/l | 0.23 | | |
| Mercury | ug/l | <0.05 | | |
| Sulphate | mg/l SO4 | 17 | | |
| Residue on evaporation | | | | |
| Zinc | ug/l | <0.05 | | |
| Flouride | mg/l F | 0.8 | | |
| Calcium | mg/l | 155.2 | | |
| Cadmium | ug/l | <0.05 | | |
| Copper | ug/l | <0.05 | | |
| Cyanide | mg/l CN | <0.05 | | |
| Total Solids | mg/l | | | |
| Boron | ug/l | <0.05 | | |
| Chromium | ug/l | <0.05 | | |
| Nickel | ug/l | <0.05 | | |
| nitrate as no3 | mg/l | | 4.3 | |
| nitrite as no2 | mg/l | | 0.08 | |

Appendix D.

| | | | | | | | | |
|-------------------------|------------|----------|----------|----------|----------|---------|---------|----------|
| DSW1 | | | | | | | | |
| Lab | | | | | | | | |
| Date | | 18.11.08 | 30.09.08 | 27.06.08 | 10.04.08 | 6.03.08 | 6.02.08 | 15.01.08 |
| Temp | degrees C | | | | | | 0 | 16.9 |
| DO | % sat | 1 | 10.3 | 8.1 | | 4.9 | 0 | |
| Ammonical Nitrogen | mg/l N | <0.2 | <0.2 | 0.3 | <0.2 | 1.1 | <0.2 | <0.2 |
| BOD | mg/l O2 | | 3 | <2 | 23 | 2 | <2 | <2 |
| COD | mg/l O2 | | 24 | 33 | 0 | 25 | 0 | |
| Chloride | mg/l Cl | | 13 | 34 | | 33 | | |
| Conductivity | | 0.206 | 0.207 | 0.753 | 0.672 | 0.717 | 0.626 | 0.602 |
| pH | pH units | 7.55 | 7.98 | 7.76 | 7.81 | 7.76 | 7.94 | 7.69 |
| Total Suspended Solids | mg/l | <10 | 40 | <10 | 15 | <10 | 66 | 22 |
| Total Phosphorous | mg/l P | 0.11 | <0.05 | <0.05 | 0.07 | 0.09 | 0.08 | <0.05 |
| Orthophosphate | mg/l P | <0.03 | 0.05 | 0.08 | <0.03 | 0.1 | 0.03 | 0.24 |
| Cadmium | ug/l | | <1 | | | | | |
| Calcium | mg/l | | 57.64 | | | | | |
| Chromium | ug/l | | 19 | | | | | |
| Copper | ug/l | | 31 | | | | | |
| Iron | ug/l | | 925 | | | | | |
| Lead | ug/l | | 68 | | | | | |
| Magnesium | mg/l | | 4.24 | | | | | |
| Manganese | ug/l | | 29 | | | | | |
| Mercury | ug/l | | <0.05 | | | | | |
| Potassium | mg/l | | 1.9 | 5.2 | | 5.2 | | |
| Sulphate | mg/l SO4 | | 9 | | | | | |
| Sodium | mg/l | | 6.7 | 20.2 | 0 | 20.7 | | |
| Alkalinity | mg/l CaCO3 | | 340 | | | | | |
| Total Oxidised Nitrogen | mg/l N | | <0.3 | | | | | |
| Zinc | ug/l | | 227 | | | | | |
| List 1 & 2 Organics | | | | | | | | |
| Nickel | | | 7 | | | | | |
| Total Ammonia as N | mg/l | | | 0.29 | | | | |

| | | | | |
|-------------------------|---------------|----------|----------|---------|
| SW1 | | | | |
| Lab | | | | |
| Date | | 30.09.08 | 26.06.08 | 6.03.08 |
| Temp | degrees C | | | |
| DO | % sat | 10.1 | 7.7 | |
| Ammonical Nitrogen | mg/l N | <0.2 | <0.2 | <0.2 |
| BOD | mg/l O2 | 3 | 16 | 2 |
| COD | mg/l O2 | 57 | 42 | 144 |
| Chloride | mg/l Cl | 40 | 41 | 39 |
| Conductivity | | 0.808 | 0.811 | 0.708 |
| pH | pH units | 7.71 | 7.44 | 7.61 |
| Total Suspended Solids | mg/l | 26 | <10 | 259 |
| Total Phosphorous | mg/l P | <0.05 | <0.05 | 0.44 |
| Orthophosphate | mg/l P | <0.03 | 0.1 | 0.06 |
| Cadmium | ug/l | <1 | | |
| Calcium | mg/l | 190.1 | | |
| Chromium | ug/l | 10 | | |
| Copper | ug/l | 35 | | |
| Iron | ug/l | 700 | | |
| Lead | ug/l | 27 | | |
| Magnesium | mg/l | 11.06 | | |
| Manganese | ug/l | 34 | | |
| Mercury | ug/l | <0.05 | | |
| Potassium | mg/l | 10.7 | 7.8 | 6.7 |
| Sulphate | mg/l SO4 | 49 | | |
| Sodium | mg/l | 19.2 | 19.9 | 20.8 |
| Alkalinity | mg/l CaCO3 | 350 | | |
| Total Oxidised Nitrogen | mg/l N | 1.2 | | |
| Zinc | ug/l | 310 | | |
| List 1 & 2 Organics | | | | |
| Nickel | ug/l | 12 | | |
| Total Ammonia as N | mg/l | | 0.11 | |
| dissolved oxygen | mg/l | | | 6.9 |

| | | | | |
|-------------------------|------------|----------|----------|---------|
| SW2 | | | | |
| Lab | | | | |
| Date | | 30.09.08 | 26.06.08 | 6.03.08 |
| Temp | degrees C | | | |
| DO | % sat | 9.7 | 10.2 | |
| Ammonical Nitrogen | mg/l N | 7.8 | 0.3 | 4.2 |
| BOD | mg/l O2 | 3 | <2 | 4 |
| COD | mg/l O2 | 67 | 31 | 58 |
| Chloride | mg/l Cl | 34 | 22 | 44 |
| Conductivity | | 0.616 | 0.751 | 0.643 |
| pH | pH units | 7.36 | 7.65 | 7.38 |
| Total Suspended Solids | mg/l | 74 | <10 | 14 |
| Total Phosphorous | mg/l P | 0.74 | <0.05 | 0.18 |
| Orthophosphate | mg/l P | 0.06 | 0.07 | 0.22 |
| Cadmium | ug/l | <1 | | |
| Calcium | mg/l | 147 | | |
| Chromium | ug/l | 8 | | |
| Copper | ug/l | 40 | | |
| Iron | ug/l | 2654 | | |
| Lead | ug/l | 18 | | |
| Magnesium | mg/l | 11.32 | | |
| Manganeese | ug/l | 600 | | |
| Mercury | ug/l | <0.05 | | |
| Potassium | mg/l | 6.7 | 4.4 | 9.6 |
| Sulphate | mg/l SO4 | 50 | | |
| Sodium | mg/l | 18.5 | 19.8 | 29 |
| Alkalinity | mg/l CaCO3 | 320 | | |
| Total Oxidised Nitrogen | mg/l N | 1.5 | | |
| Zinc | ug/l | 176 | | |
| List 1 & 2 Organics | | | | |
| Nickel | ug/l | 9 | | |
| Total Ammonia as N | mg/l | | 0.3 | |
| dissolved oxygen | mg/l | | | 4.4 |

SW3

| Date | | 30.09.08 | 27.06.08 | 6.03.08 | 6.12.07 |
|-------------------------|---------------|----------|----------|---------|---------|
| Temp | degrees C | | | | |
| DO | % sat | 10.7 | 10.9 | 5.5 | 5 |
| Ammonical Nitrogen | mg/l N | 0.9 | 0.3 | 1.6 | 0.3 |
| BOD | mg/l O2 | 3 | <2 | <2 | 5 |
| COD | mg/l O2 | 42 | 30 | 29 | 32 |
| Chloride | mg/l Cl | 41 | 35 | 34 | 28 |
| Conductivity | | 0.752 | 0.752 | 69 | 0.729 |
| pH | pH units | 7.78 | 7.7 | 7.61 | 7.87 |
| Total Suspended Solids | mg/l | <10 | <10 | <10 | <10 |
| Total Phosphorous | mg/l P | 0.86 | <0.05 | <0.05 | 0.19 |
| Orthophosphate | mg/l P | <0.03 | 0.12 | 0.12 | 0.15 |
| Cadmium | ug/l | <1 | | | |
| Calcium | mg/l | 169.5 | | | |
| Chromium | ug/l | 15 | | | |
| Copper | ug/l | 36 | | | |
| Iron | ug/l | 454 | | | |
| Lead | ug/l | 57 | | | |
| Magnesium | mg/l | 12.89 | | | |
| Manganese | ug/l | 33 | | | |
| Mercury | ug/l | <0.05 | | | |
| Potassium | mg/l | 7.1 | 5.5 | 4.9 | 6.2 |
| Sulphate | mg/l SO4 | 30 | | | |
| Sodium | mg/l | 22.7 | 20.4 | 21.3 | 18 |
| Alkalinity | mg/l CaCO3 | 360 | | | |
| Total Oxidised Nitrogen | mg/l N | 3.1 | | | |
| Zinc | ug/l | 50 | | | |
| List 1 & 2 Organics | | | | | |

Nickel ug/l 10
 Total Ammonia as N mg/l 0.29

| | | | | | |
|-------------------------|---------------|----------|----------|---------|---------|
| SW4 | | | | | |
| Date | | 30.09.08 | 27.06.08 | 6.03.08 | 6.12.07 |
| Lab | | | | | |
| Temp | degrees C | | | | |
| DO | % sat | 10.2 | 8.3 | 4.6 | 5.1 |
| Ammonical Nitrogen | mg/l N | 4.9 | 2.7 | 4.6 | <0.2 |
| BOD | mg/l O2 | 3 | 5 | 7 | 4 |
| COD | mg/l O2 | 71 | 51 | 59 | 40 |
| Chloride | mg/l Cl | 49 | 37 | 44 | 30 |
| Conductivity | | 0.774 | 0.628 | 0.719 | 0.708 |
| pH | pH units | 7.1 | 7.22 | 7.25 | 7.72 |
| Total Suspended Solids | mg/l | 45 | <10 | <10 | <10 |
| Total Phosphorous | mg/l P | 0.12 | 0.15 | 0.15 | 0.23 |
| Orthophosphate | mg/l P | 0.05 | 0.15 | 0.2 | 0.2 |
| Cadmium | ug/l | <1 | | | |
| Calcium | mg/l | 152.4 | | | |
| Chromium | ug/l | 10 | | | |
| Copper | ug/l | 32 | | | |
| Iron | ug/l | 675 | | | |
| Lead | ug/l | 33 | | | |
| Magnesium | mg/l | 15.12 | | | |
| Manganese | ug/l | 31 | | | |
| Mercury | ug/l | <0.05 | | | |
| Potassium | mg/l | 11 | 8.1 | 9.5 | 6.3 |
| Sulphate | mg/l SO4 | 35 | | | |
| Sodium | mg/l | 29.3 | 23 | 29.8 | 18.5 |
| Alkalinity | mg/l CaCO3 | 270 | | | |
| Total Oxidised Nitrogen | mg/l N | <0.3 | | | |
| Zinc | ug/l | 159 | | | |
| List 1 & 2 Organics | | | | | |
| Nickel | ug/l | 9 | | | |
| Total Ammonia as N | mg/l | | 2.59 | | |

SW5

| Date | | 30.09.08 | 27.06.08 | 6.03.08 | 6.12.07 |
|-------------------------|------------|----------|----------|---------|---------|
| Temp | degrees C | | | | |
| DO | % sat | 10.6 | 8.2 | 4.7 | 6.2 |
| Ammonical Nitrogen | mg/l N | 31 | 0.3 | 1.1 | <0.2 |
| BOD | mg/l O2 | <2 | 3 | <2 | 2 |
| COD | mg/l O2 | | 34 | 24 | 32 |
| Chloride | mg/l Cl | 36 | 35 | 33 | 28 |
| Conductivity | | 0.751 | 0.745 | 2.399 | 0.727 |
| pH | pH units | 8.11 | 8.01 | 7.87 | 7.83 |
| Total Suspended Solids | mg/l | <10 | <10 | <10 | <10 |
| Total Phosphorous | mg/l P | <0.05 | <0.05 | <0.05 | 0.08 |
| Orthophosphate | mg/l P | <0.03 | 0.09 | 0.09 | 0.13 |
| Cadmium | ug/l | <1 | | | |
| Calcium | mg/l | 163.9 | | | |
| Chromium | ug/l | 5 | | | |
| Copper | ug/l | 28 | | | |
| Iron | ug/l | 577 | | | |
| Lead | ug/l | 6 | | | |
| Magnesium | mg/l | 11.56 | | | |
| Manganeese | ug/l | 28 | | | |
| Mercury | ug/l | <0.05 | | | |
| Potassium | mg/l | 5.9 | 5.3 | 5.1 | 6.2 |
| Sulphate | mg/l SO4 | 31 | | | |
| Sodium | mg/l | 19.4 | 20.1 | 20.6 | 17.5 |
| Alkalinity | mg/l CaCO3 | 100 | | | |
| Total Oxidised Nitrogen | mg/l N | 1.9 | | | |
| Zinc | ug/l | 116 | | | |
| List 1 & 2 Organics | | | | | |
| Nickel | ug/l | 7 | | | |
| Total Ammonia as N | mg/l | | 0.29 | | |

Appendix E.

| Main Sump | | | | | | | | | |
|-------------------|----------|----------|----------|----------|---------|----------|---------|---------|----------|
| Date | | 11.11.08 | 30.09.08 | 27.06.08 | 8.05.08 | 10.04.08 | 6.03.08 | 6.02.08 | 15.01.08 |
| BOD | mg/l | | 65 | 283 | 1233 | 552 | 267 | 410 | 27 |
| COD | mg/l | 296 | | 491 | 2208 | 998 | 545 | 658 | 208 |
| Ammonia | mg/l | 78.9 | 210.4 | 159.7 | 381.6 | 198.8 | 90 | 41.4 | 72.5 |
| Nitrate | mg/l | <0.3 | | | | | | | |
| Sulphate | mg/l | | 80 | | | | | | |
| Alkalinity | mg/l | | 1230 | | | | | | |
| Chloride | mg/l | 153 | 439 | 257 | 607 | 39 | 157 | 105 | 173 |
| Conductivity | uS/cm | 2.038 | 4.263 | 3.248 | 7 | 3.832 | 0.803 | 1.631 | 1.958 |
| pH | | 7.66 | 7.86 | 7.42 | 7.54 | 8 | 7.49 | 7.09 | 7.33 |
| Suspended Solids | | | | | | | | | |
| Temperature | C | | | | | | | | |
| Boron | B ug/l | | | | | | | | |
| Calcium | Ca mg/l | | 180.7 | | | | | | |
| Sodium | Na mg/l | | 340 | | | | | | |
| Cadmium | Cd ug/l | | <1 | | | | | | |
| Chromium | Cr ug/l | | 35 | | | | | | |
| Copper | Cu ug/l | | 35 | | | | | | |
| Iron | Fe ug/l | | 8808 | | | | | | |
| Lead | Pb ug/l | | 52 | | | | | | |
| Manganese | Mn ug/l | | 780 | | | | | | |
| Magnesium | Mg mg/l | | 67.28 | | | | | | |
| Potassium | K mg/l | | 200.2 | | | | | | |
| Zinc | Zn ug/l | | 185 | | | | | | |
| Total phosphorous | mg/l P | | 1.68 | | | | | | |
| Total Coliforms | No/100ml | | 90000 | | | | | | |
| Faecal coliforms | No/100ml | | 10000 | | | | | | |
| Cyanide | | | <0.05 | | | | | | |
| Flouride | mg/l F | | 0.2 | | | | | | |
| Toluene | ug/l | | | | | | | | |
| Mercury | ug/l | | <0.05 | | | | | | |
| Total Ox Nitrogen | mg/l N | <0.3 | 0.4 | 0.8 | <0.3 | 0.7 | <0.3 | <0.3 | <0.3 |
| Sulphide | mg/l | | | | | | | | |
| Orthophosphate | mg/l PO4 | | | | | | | | |
| Nickel | ug/l | | 45 | | | | | | |
| Total Phenols | mg/l | | 0.01 | | | | | | |

