



**CORK COUNTY COUNCIL
WESTERN DIVISION**

**ANNUAL ENVIRONMENTAL REPORT 2011
1st Jan 2011 - 31st DEC 2011**

**BENDUFF LANDFILL SITE
ROSSCARBERY CO. CORK
EPA LICENCE REF No. W0070-01**

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WOLFE TONE ST,
CLONAKILTY,
CO. CORK.

MARCH 2012.

TABLE OF CONTENTS

1.0 Introduction	4
1.1 Scope and Purpose of the Report	4
1.2 Reporting Period	4
1.3 Site Location	4
1.4 Closure of Site	4
1.5 Management and staffing structure of the facility	4
1.6 Environmental monitoring and reporting	5
2.0 Description of the site	6
2.1 Waste management activities at the facility	6
2.2 Remaining capacity	6
3.0 Site development works	7
3.1 Development works during 2009	7
4.0 Emissions and environmental monitoring data	8
4.1 Landfill Gas	8
4.2 Surface water	9
4.3 Groundwater	10
4.4 Leachate	12
4.5 Additional monitoring at S1	12
4.6 Noise	12
4.7 Dust	13
4.8 Biological survey	13
4.9 Landfill gas quantities	13
4.10 Emissions to groundwater	14
4.11 SCADA results	14
4.12 Landfill gas flare – monitoring of emissions	14
4.13 Leachate disposal off-site	15
5.0 Energy consumption	16
6.0 Environmental incidents, non-compliances and complaints	17
6.1 Reported incidents	17
6.2 Non-Compliances	17
6.3 Complaints	17
6.4 Review of nuisance controls	17
6.5 Programme for Public Information	17
6.5.1 Information Available to the Public	17
7.0 Environmental management programme report	18
7.1 Schedule of Objectives and Targets for Year 2010	18
7.1 Proposed Objectives and Targets for Year 2011	18
7.2 Financial provision	19

LIST OF TABLES

Table 1.5.1:	Managerial Staff	5
Table 4.1.1:	Range of values for methane	9
Table 4.1.2:	Range of values for carbon dioxide	9
Table 4.9.1:	Predicted gas yield	13
Table 4.12.1:	Results for flue gas monitoring from the Flare System	15
Table 4.12.2:	Result of TA Luft Organics monitoring from the Flare System	15
Table 4.12.3:	Result of HCL and KF monitoring from the Flare System	15
Table 4.12.4:	Result of the particulate monitoring from the Flare System	15
Table 5.0.1:	Energy Consumption on Site	16
Table 7.1.1:	Schedule of Objectives and Targets for 2010	18
Table 7.1.2:	Schedule of Objectives and Targets for 2011	18

LIST OF APPENDICES

Appendix 1:	Benduff Landfill monitoring locations
Appendix 2:	Topographical survey
Appendix 3:	Flare Data Graphs
Appendix 4:	PRTR Return

1.0 Introduction

1.1 Scope and Purpose of the Report

The Environmental Protection Agency (EPA) issued Cork County Council with a Waste Licence (Waste Licence No. 70-1) for Benduff Landfill site on 21st December 2000. In July 2006, in accordance with a revised EPA numbering system, the Waste Licence at Benduff Landfill was renumbered W00070-01. In accordance with the requirement of Condition 2.8.1 of the waste licence,

‘The licensee shall submit to the Agency for its agreement, within thirteen months from the date of grant of this licence, and within one month of the end of each year thereafter, an Annual Environmental Report (AER).’

1.2 Reporting Period

This is the tenth AER to be submitted under Condition 2.8 of the licence and covers the reporting period 1st January 2011 to 31st December 2011

1.3 Site Location

The facility address is:

Benduff Landfill,
Rosscarbery,
Co. Cork.

The National Grid Reference for the site is E126000, N38300.

1.4 Closure of Site

On April 23rd 2004, Benduff Landfill ceased acceptance of waste. Restoration and aftercare has continued from that date.

1.5 Management and Staffing Structure of the Facility

Following closure of the facility (Apr 2004), there has been no full time County Council presence on the site. The Management of the facility is undertaken from the Divisional Offices, Hume House, Wolfe Tone St., Clonakilty.

Management structure is shown in Table 1.5.1 below.

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Table 1.5.1: Managerial Staff		
Position.	Contact Details.	Duties.
Mr. Jerome O'Brien Snr. Executive Engineer	Cork County Council Rossmore Carrigtohill Co. Cork Telephone 021 4533934 Fax. 021 4533880	Management of Cork County Council Environment & Waste Operations,
Ms. Mairead Hales, BE. Executive Engineer..	Cork County Council, Hume House, Wolfe Tone St., Clonakilty, Co. Cork. Telephone No: 023- 8858812 Fax No: 023-8858814	Management of Cork County Council Environment & Waste Operations, Western Division.
Mr. John P O'Donovan Facility Manager.	Clonakilty Recycling Centre, Cloheen Industrial Estate, Clonakilty, Co. Cork Telephone No: 023- 8850982 Fax No: 023-8850016	Management of Cork County Council Environment & Waste Operations, Western Division.

1.6 Environmental monitoring and reporting

Cork County Council personnel carried out environmental monitoring and recording throughout 2011.

2.0 Description of the site

2.1 Waste Management Activities at the Facility

Benduff Landfill was closed in 2004 and capped immediately. Therefore no waste has been accepted on site since that date.

Waste Activities at the Benduff landfill site are restricted to those outlined below:-

Waste Management Act, 1996: Third Schedule

Class 1: Deposit on, in or under land (including landfill)

Class 2: Land treatment, including biodegradation of liquid or sludge discards in soils

Class 4: The storage of leachate and contaminated water pending its disposal at another appropriate facility.

Class 13: Temporary storage of waste, which is unsuitable for deposit at the facility and which has been duly notified to the Agency.

2.2 Remaining capacity

The site has been capped and there remains no capacity in the site. A topographical survey of the facility is included in the Appendices.

3.0 Site Development Works

3.1 Development works during 2011

No major or minor works took place in Benduff Landfill Site in 2011 with all development works complete.

There are no major developments planned for the site in 2012.

4.0 Summary of Monitoring and Emissions

In compliance with Condition 9 and Schedule E of the waste licence the following monitoring is carried out on site:

Landfill gas;
Landfill gas flare;
Groundwater;
Surface water;
Leachate;
Dust.

Four groundwater boreholes (MW1, MW2, MW3 and MW4) were replaced in 2004 and the new wells were placed immediately adjacent to the existing boreholes. Two additional wells (MW5 and MW6) were also installed at that time. An additional well, (MW7) was installed in July 2006.

Two new leachate wells (LW1 and LW2) were installed in 2005 as part of the capping contract. The old wells (L1, L2 & L3) were made redundant and filled in.

All monitoring locations are identified on a Monitoring Locations Drawing attached in the Appendices.

4.1 Landfill Gas

Schedule E.1 of EPA licence W00070-01 specifies that gas monitoring is to be undertaken at groundwater stations, leachate stations, the site office and the landfill gas flare.

The site office was removed following closure of the site in 2004 and thus gas monitoring was discontinued at that location.

Schedule E.1 notes that monitoring is to be undertaken monthly at all stations. However in a report prepared on behalf of Cork County Council by Fehily Timoney and Company in February 2009, a change to the monitoring requirements was requested. According to the correspondence received from the Agency on 21st April 2009 (Ref: W0070-01/ap031d) Landfill gas emissions are now to be monitored biannually. This states that monitoring is to be undertaken at groundwater stations MW1 – MW7, and at leachate wells LW1 and LW2. . Measurement of the following parameters is specified: methane (CH₄), carbon dioxide (CO₂), oxygen (O₂), atmospheric pressure and temperature. The gas is monitored using a GA94 infra-red gas analyser, which detects levels of carbon dioxide methane and oxygen. Schedule F.2 of the licence specifies methane and carbon dioxide limits of 20% LEL (1% v/v) and 1.5% v/v respectively in any building on or adjacent to the landfill.

Groundwater stations MW1-MW7

No methane was detected at groundwater stations MW1 - MW7. Low levels of carbon dioxide were detected at all groundwater stations. It can be inferred that large-scale lateral migration of landfill gases is not occurring outside of the landfill area.

Gas monitoring – leachate wells LW1 & LW2

Results indicate that methane and carbon dioxide are being produced within the landfill area and that there was considerable variation in values throughout the year. There was a significant reduction in levels of methane and carbon dioxide recorded at monitoring point LW2. The range of values detected at the two leachate wells are detailed in Tables 4.1.1 and 4.1.2.

Table 4.1.1 Range of values for methane

Methane gas (% v/v)	LW1	LW2
Maximum conc.	24.8	10.9
Minimum conc.	17.4	8.6

Table 4.1.2 Range of values for carbon dioxide

Carbon dioxide (% v/v)	LW1	LW2
Maximum conc.	18.5	15.5
Minimum conc.	6.7	13.6

4.2 Surface water

Schedule E.5 of licence W00070-01 specifies that monitoring of surface water quality is to be undertaken at five locations: SW1, SW2, SW3, SW4 and SW5. The local topography is such that stations SW2 and SW4 are down gradient of the landfill, although located to the east and west of the site respectively. Following completion of capping at Benduff, a new surface water monitoring station (SW5) was located upstream of SW2.

In a report prepared on behalf of Cork County Council by Fehily Timoney and Company in February 2009, a change to the monitoring requirements was requested. According to the correspondence received from the Agency on 21st April 2009 (Ref: W0070-01/ap03ld) surface water is now to be monitored biannually and only at monitoring points SW1, SW4 and SW5. The parameters to be measured are ammoniacal nitrogen (NH_{3/4}-N), biochemical oxygen demand (BOD), chemical oxygen demand (COD), chloride (Cl⁻), dissolved oxygen (DO), electrical conductivity, pH, total suspended solids, and temperature. Table E.5.2 of the licence states additional parameters which are to be monitored annually. Licence W00070-01 does not specify maximum concentrations of these parameters and accordingly, data presented below are discussed with reference to relevant legislation:

(i) Council Directive 75/440/EEC of 16 June 1975 concerning the quality of surface water intended for the abstraction of drinking water, incorporated into Irish law by the European Communities (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations, 1989 (S.I. No. 294 of 1989). The directive divides waters into three categories - A1, A2 and A3 – depending on the increasing level of treatment required.

(ii) Council Directive 78/659/EEC of 18 July 1978 on the quality of fresh waters needing protection in order to support fish life, given Irish effect by the European Communities (Quality of Salmonid Waters) Regulations, 1988 (S.I. No. 293 of 1988). Notwithstanding the absence of any fisheries designation on the streams surrounding the landfill site, the Freshwater Fish Directive carries some weight due to its strict limits and the consequent suitability of a watercourse for other uses should it meet these limits. These limits have been quoted in preference to the Surface Water limits where available.

It is noted that there are no drinking water abstraction points or fisheries designations on the watercourses on which the sampling stations are located, however comparisons with the limits specified by the above legislation is useful for comparative purposes.

Water samples were taken on the following dates:

- 29th June 2011 SW4.
- 23 November 2011– SW1, SW4 and SW5

All surface water monitoring points were sampled. (SW1 & SW5 were found to be dry on 29/06/11) The results recorded for these monitoring points indicated that the water present was of a very good quality and was not affected by the presence of the landfill. Overall the results have remained consistent during 2010.

4.3 Groundwater

Under schedule E.5 of licence W00070-01, monitoring of groundwater quality is to be undertaken at six locations. Four of these are boreholes (MW1, MW2, MW3 and MW4) while two stations consist of tapped private wells – SPJ1 and SPM2 located 300m southwest and 250m southeast of the site respectively. Borehole MW3 is located up gradient of the landfill site, while stations MW1, MW2 and MW4 are down gradient. MW1 and MW2 lie on the same groundwater corridor. Two new groundwater stations MW5 and MW6 were put in place at the northeast and southeast corners of the landfill respectively. A further groundwater monitoring location, MW7, was installed at a location to the west of the landfill site in July of 2006.

In a report prepared on behalf of Cork County Council by Fehily Timoney and Company in February 2009, a change to the monitoring requirements was requested. According to the correspondence received from the Agency on 21st April 2009 (Ref: W0070-01/ap03ld) groundwater is now to be monitored quarterly at monitoring points MW1-MW7 and SPJ1 and SPM2. The parameters to be measured are groundwater level, ammoniacal nitrogen ($\text{NH}_{3/4}\text{-N}$), electrical conductivity, pH, and temperature.

Table E.5.2 of the licence states additional parameters that are to be monitored annually.

Groundwater samples were taken on the following dates:

- 23^h March 2011
- 29th June 2011
- 21st September 2011
- 23rd November 2011

Licence W00070-01 does not specify maximum concentrations of parameters and accordingly, levels presented below are discussed with reference to relevant legislation/standards:

(i) Council Directive 98/83/EC on the quality of water intended for human consumption repealed the similarly titled Council Directive 80/778/EEC. The directive specifies maximum limits with respect to a large number of parameters and is of particular relevance to groundwater.

(ii) The Netherlands Department of Soil Protection published its *Circular on target values and intervention values for soil remediation* in February 2000. The circular specifies general target and intervention concentrations of parameters (chiefly metals and organics) in soils and groundwater, which it deems necessary to allow the return of contaminated land to any potential use. The target value is the baseline concentration value below which compounds and/or elements are known or assumed not to affect the natural properties of the soil. The intervention value is the maximum tolerable concentration above which remediation is required and is applied where one or more compounds, in concentrations equal to or higher than the intervention value, is found in more than 1000m³ of groundwater.

A review of the quarterly results for the groundwater wells indicated that levels of ammoniacal nitrogen at MW1 were reduced during some of the sampling occasions in 2011. MW1 is located adjacent to S1 from which leachate is removed on an ongoing basis following an incident in 2004. It is considered probable that the elevated levels of ammoniacal nitrogen at MW1 are related to its proximity to the landfill and this was addressed in a report prepared by O Neill Groundwater Engineering in 2005.

Annual sampling was carried out in November 2011 at Benduff and a greater range of parameters was therefore assessed. Conductivity was slightly reduced at MW1 but was generally consistent with previous results. For all other monitoring points MW2 – MW7 and SPJ1 and SPM2 Ammonia as N, Conductivity and pH all remained relatively consistent with previous monitoring results. A comparison of temporal data indicates that most results remain consistent. The microbiological samples showed that there is in general increase in presence of faecal coliforms in the groundwater wells at Benduff landfill from last year. For the total coliforms counts it shows that there is high values of coliforms at the groundwater wells. These results are generally consistent with the previous years.

4.4 Leachate

Schedule E.5 of licence W00070-01 specifies that monitoring of leachate is to be undertaken at station L1 and any other stations, which may be designated. A second station – L2 – was subsequently agreed. Both L1 and L2 were relocated and renamed LW1 and LW2 in the last quarter of 2005. Schedule E.5 provides a list of parameters, which are to be monitored at weekly, quarterly and annual intervals at all leachate stations. Licence W00070-01 does not specify maximum concentrations of parameters. There are no relevant standards available for leachate quality. The results were generally consistent with previous years results. Most values for the lagoon were significantly lower than LW1 and LW2.

4.5 Additional monitoring at station S1.

Following contamination of a watercourse adjoining the landfill in February 2004 additional monitoring points were specified as follows: *Monthly monitoring at sites S1 (pond) and S4 (corresponding to SW4) for the following parameters COD, BOD, ammoniacal nitrogen, pH, conductivity, chloride, temperature, dissolved oxygen, total suspended solids, total coliforms and faecal coliforms.* Following on from the build up of water at S1 a programme of removal has been put in place. Due to the improvement in water quality at SW4 the Agency no longer require sampling at this location. However, SW4 is monitored as part of the biannual and annual monitoring programmes.

In a report prepared on behalf of Cork County Council by Fehily Timoney and Company in February 2009, a change to the monitoring requirements was requested. According to the correspondence received from the Agency on 21st April 2009 (Ref: W0070-01/ap03ld) the water at monitoring point S1 is now to be monitored biannually. The parameters to be measured are BOD, COD, ammoniacal nitrogen (NH_{3/4}-N), electrical conductivity, pH, chloride, DO, TSS, total coliforms, faecal coliforms and temperature.

Monitoring undertaken during the first quarter at S1 showed that there was a deterioration in quality when compared with the results from the final quarter in 2009. The results for Ammonia, BOD, COD and Chloride showed an increase in values. However the results in the final quarter of 2010 showed a marked improvement and were in general consistent with results in 2009. Total coliforms also reduced from 122MPN/100mls in 2009 to 66MPN/100mls in 2010.

4.6 Noise.

As Benduff landfill is no longer active noise monitoring was not required during 2011.

4.7 Dust.

As Benduff landfill is no longer active dust monitoring was not required during 2011.

4.8 Biological survey.

Schedule E.5 of licence W00070-01 notes that an annual biological assessment is to be undertaken at two stations in proximity to the landfill site: WQ1 and WQ2. The schedule specifies that an appropriate biological method is to be used such as the EPA Q-rating system.

Station WQ1 no longer exists as an open watercourse, and therefore it was not possible to take a sample at this location. Accordingly a sample was taken at SW2 and WQ2 was relocated to SW4.

In December 2011, benthic macroinvertebrate samples were collected at two sampling sites located on two small unnamed streams that flow away from the landfill site. As in the 2010 survey, the sampling locations stipulated in the waste licence, WQ1 and WQ2, have been replaced by sampling locations SW2 and SW4 respectively. Sample site SW2 was determined to have a provisional biological quality rating of Q3 (moderately polluted), whilst sample site SW4 was determined to have a provisional Q-Rating of Q3-4 (slightly polluted). In the previous survey, conducted in October 2010, both sites had been provisionally been assigned Q2 status (heavily polluted). It is therefore concluded that, based on the biological assessment, there has been an improvement in water quality at both sample sites.

4.9 Landfill Gas Quantities.

A software programme was previously used by Fehily Timoney to predict the total gas generated from the input of waste at Benduff landfill. Modelling was carried out using a Landfill Gas Emissions Model (LandGEM-verison 2.01) and the CAA site of default values were used in the Benduff landfill gas prediction model. The predicted peak rate of gas production for the site occurred in 2002. As estimated by the model the total amount of gas generated to date is shown in Table 4.9.1.

Table 4.9.1. Predicted gas yield.

Year	Gas Yield (m3/year)
1995	1,296,400
1996	1,365,600
1997	1,432,200
1998	1,496,000
1999	1,557,200
2000	1,696,200
2001	1,713,800
2002	1,726,600
2003	1,702,200

2004	1,663,600
2005	1,598,400
2006	1,535,800
2007	1,475,600
2008	1,417,600
2009	1,362,000
2010	1,308,600
2011	1,257,400

4.10 Emissions to Groundwater

The facility is unlined and acts as a dilute and disperse landfill. Although there is no barrier to prevent leachate reaching groundwater it does not appear that the landfill is causing significant contamination of groundwater. Results from 2010 indicate that the quality of groundwater is generally consistent with results from previous years.

4.11 SCADA results.

SCADA results are presented graphically in the Appendices. Results are shown for:

- Methane CH₄,
- Carbon Dioxide CO₂,
- Oxygen O₂,
- Carbon Monoxide CO,
- Flow
- Flare Operating Pressure
- Flare Operating Temperature

4.12 Landfill gas flare – monitoring of emissions.

Monitoring results for the landfill gas flare indicate that the flare is performing efficient combustion of landfill gas. The levels determined for Nitrogen Oxides (NO_x) were within the emission limit values. Organic compounds were within the limits of TA Luft Classes I, II, and III. The sum of the concentration for the three classes were within the limits of the licence and do not exceed the Class III limit. The levels determined for Hydrofluoric acid (HF) and Hydrochloric acid (HCL) and also the results for Particulate Matter were all within the emission limits. The results of the Landfill Gas Flare monitoring are included in the tables below.

Table 4.12.1 Results for Flue Gas monitoring from the Flare System at Benduff Landfill

Parameter	Emission Value ¹ (mg/Nm ³)	Emission Limit ² (mg/Nm ³)
Nitrogen Oxides (NO _x) as NO ₂	55	150
Carbon Monoxide (CO)	173	50
Temperature (°C)	466	N/A

¹Normalised to 273K, 101.3Pa and 5% O₂ reference

²As stated in Schedule F of WL W0070/01

Table 4.12.2 Results of TA Luft Organics monitoring from the Flare System at Benduff Landfill

Parameter	Emission Value (mg/m ³)	Emission Limit (mg/m ³)
TA Luft Class I Dichloromethane Tetrachloroethane	<0.03	20 (at mass flow >0.1kg/hr)
TA Luft Class II Acetonitrile	<0.03	100 (at mass flow >2kg/hr)
TA Luft Class III Vinyl Chloride	<0.03	150 (at mass flow >3kg/hr)
Total TA Luft Organic Compounds (class I-III)	<0.03	150 (at mass flow >3kg/hr)

< denotes that the measured parameter was below the laboratory's level of detection

Table 4.12.3 Results of the HCL and HF monitoring from the Flare System at Benduff Landfill

Parameter	Emission Value (mg/m ³)	Emission Limit (mg/m ³)
HCL	0.648	50
HF	<0.18	5

<denotes that the measured parameter was below the laboratory's level of detection of inorganic acids in the gas stream

Table 4.12.4 Results of the Particulate monitoring from the Flare System at Benduff Landfill

Parameter	Emission Value (mg/m ³)	Emission Limit (mg/m ³)
Particulate	19.7	130

< denotes that the measured parameter was below the laboratory's level of detection

4.13 Leachate disposal off-site

Leachate arising at the facility is transported to, and disposed of, at Bandon Waste Water Treatment Plant. There was no leachate removed from the site during the reporting year.

5.0 Energy consumption.

As there was no plant or machinery on site in 2011, there was no consumption of diesel.

The electricity supply caters for the flare and leachate collection system. Recording of electricity usage is now recorded as part of the weekly flare inspections and is shown in table 5.0.1 below.

Table 5.0.1. Energy Consumption on Site	
Month	Electricity Usage (KwHr)
January	250
February	247
March	347
April	330
May	286
June	236
July	362
August	264
September	255
October	334
November	340
December	238
Total:	3489

6.0 Environmental incidents, non-compliances and complaints

6.1 Reported Incidents.

No reported incidents were recorded in 2011

6.2 Non-Compliances.

No non-compliances occurred at Benduff landfill during 2011

6.3 Complaints.

No complaints were received by the facility during the reporting period.

6.4 Review of nuisance controls.

Since cessation of landfilling all nuisance controls for litter, birds, vermin and flies have been removed. Weekly inspections however still monitor nuisance and should nuisance become an issue, adequate resources will be deployed.

6.5 Programme for Public Information.

6.5.1 Information Available to the Public.

Information regarding the facility is held at Clonakilty Waste & Recycling Centre, Cloheen Industrial Estate., Clonakilty, Co. Cork.

Personnel associated with the facility are also available by appointment to meet with members of the public and answer queries regarding the facility if requested. The following information is held in a public file at these offices available for the public to inspect:-

- copy of the waste licence application.
- copy of the waste licence.
- correspondence from the Agency relating to the facility.
- correspondence from Cork County Council (West) to the Agency relating to the facility.
- copies of quarterly monitoring reports.

7.0 Environmental management programme report.

7.1 Schedule of Objectives and Targets for Year 2011

Progress in implementation of 2011 Objectives and Targets is shown in Table 7.1.1 below.

Table 7.1.1 Schedule of Objectives and Targets for Year 2011		
2011 Objective	Description.	Progress in implementing objectives.
Objective 1.	Maintain/improve site infrastructure (fencing, monitoring wells and equipment, gas flare, leachate extraction system, etc).	Maintenance ongoing. All site infrastructure functional and adequate at time of report.
Objective 2.	Operate landfill gas system to licence conditions.	Objective achieved.
Objective 3.	Continue aftercare obligations to the waste licence conditions.	On going.
Objective 4.	Review emissions and environmental impacts.	On going monitoring and assessment & close inspection of quarterly reports.

7.2 Proposed Objectives & Targets for 2012

Proposed Objectives & Targets for 2011 are shown in Table 7.2.1 below.

Table 7.2.1 Schedule of Objectives and Targets for Year 2012	
2011 Objective.	Description.
Objective 1.	Maintain/improve site infrastructure (fencing, monitoring wells and equipment, gas flare, leachate extraction system, etc).
Objective 2.	Operate landfill gas system to licence conditions.
Objective 3.	Continue aftercare obligations to the waste licence conditions.
Objective 4.	Ongoing review of emissions and environmental impacts.

7.3 Financial Provision.

Cork County Council has the ability to meet any financial commitments or liabilities incurred by the maintenance of Benduff Landfill. These commitments include compliance with the waste management licence (No. W00070-01) and aftercare of the site as specified in Condition 8 of the licence.

Cork County Council annually, in the preparation of the 'Book of Estimates' and the passing of these estimates, shall make provision for any capital works required to fulfil conditions of the waste licence for Benduff Landfill.

APPENDICES

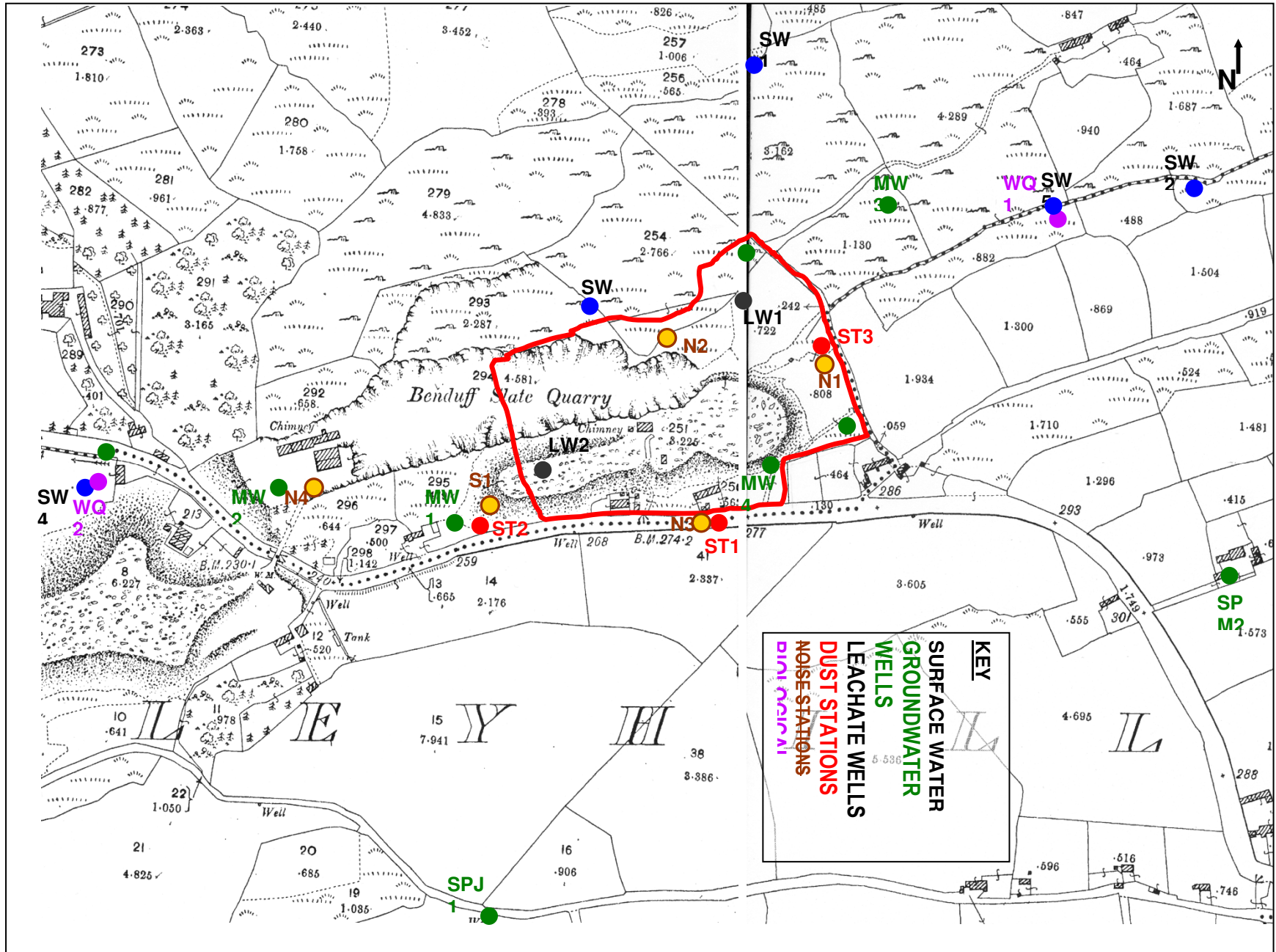


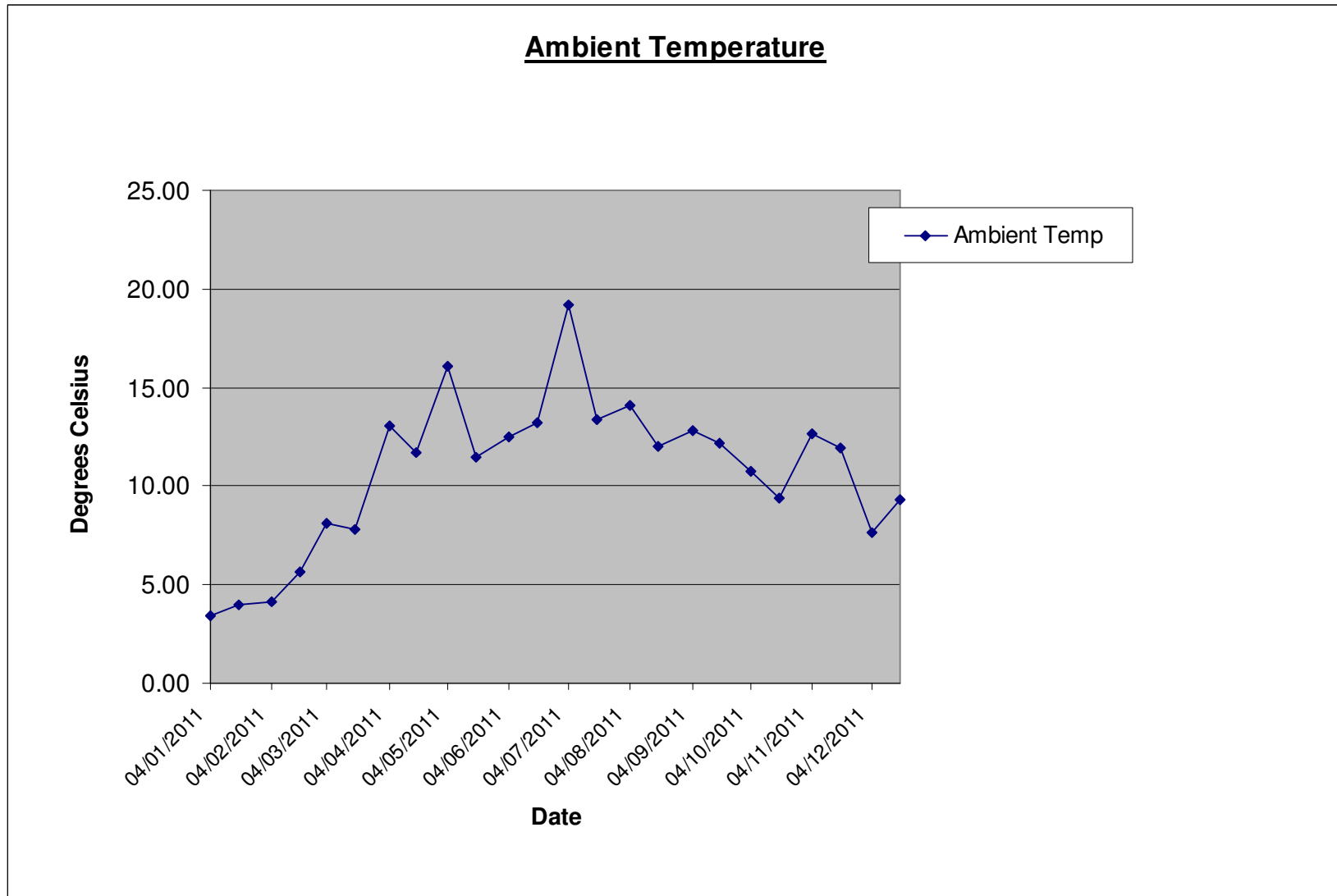
Figure 1. Benduff Landfill monitoring stations

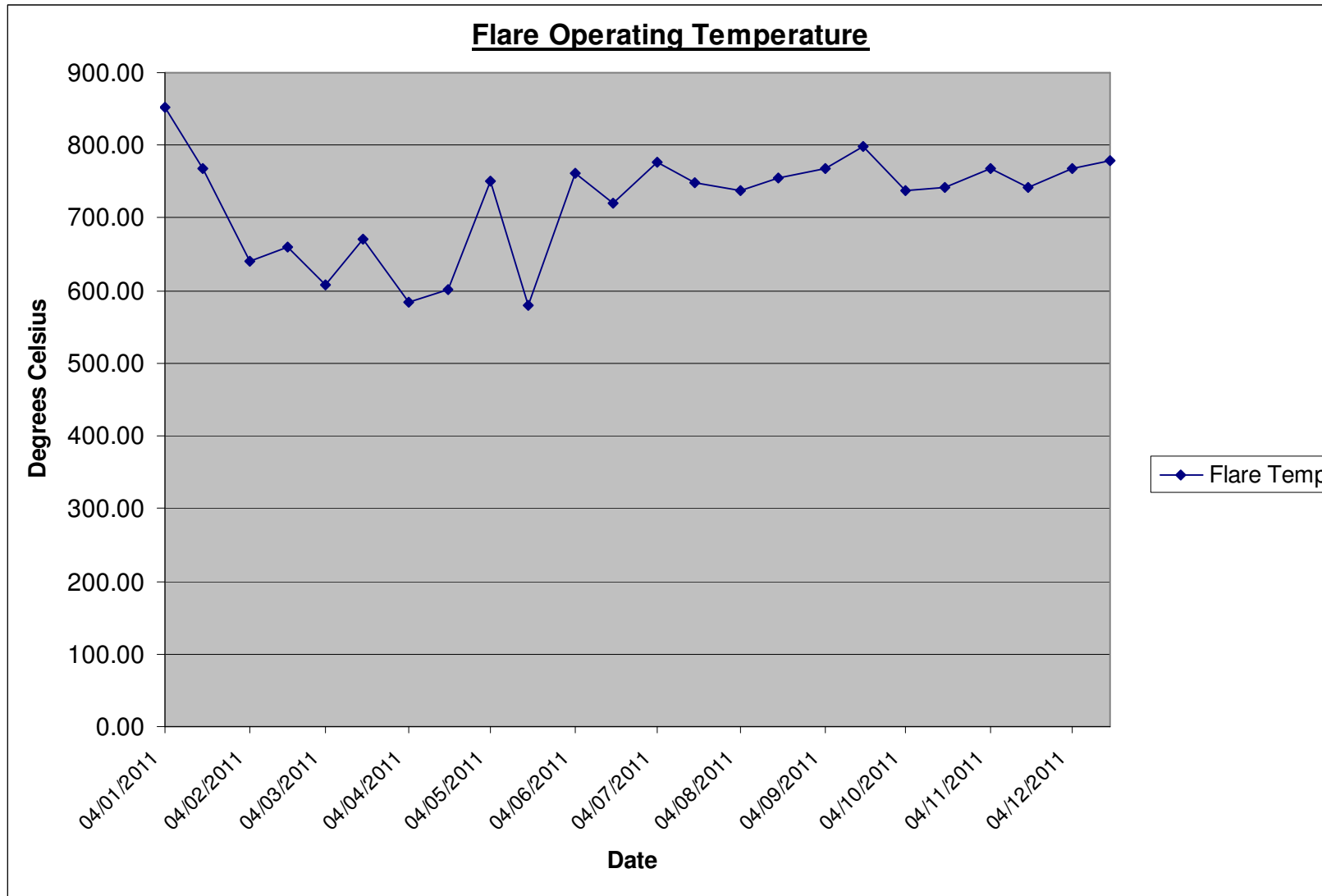
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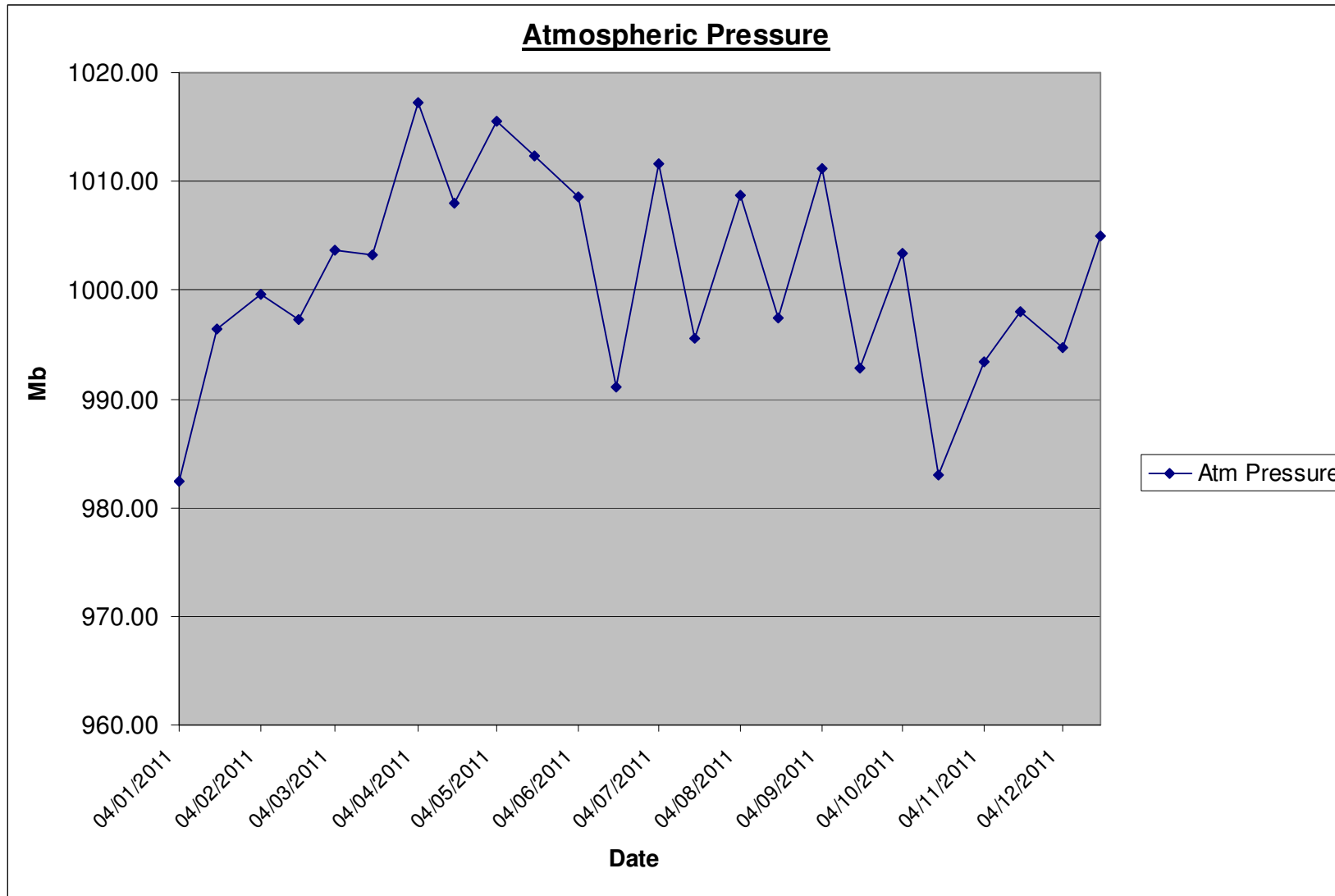
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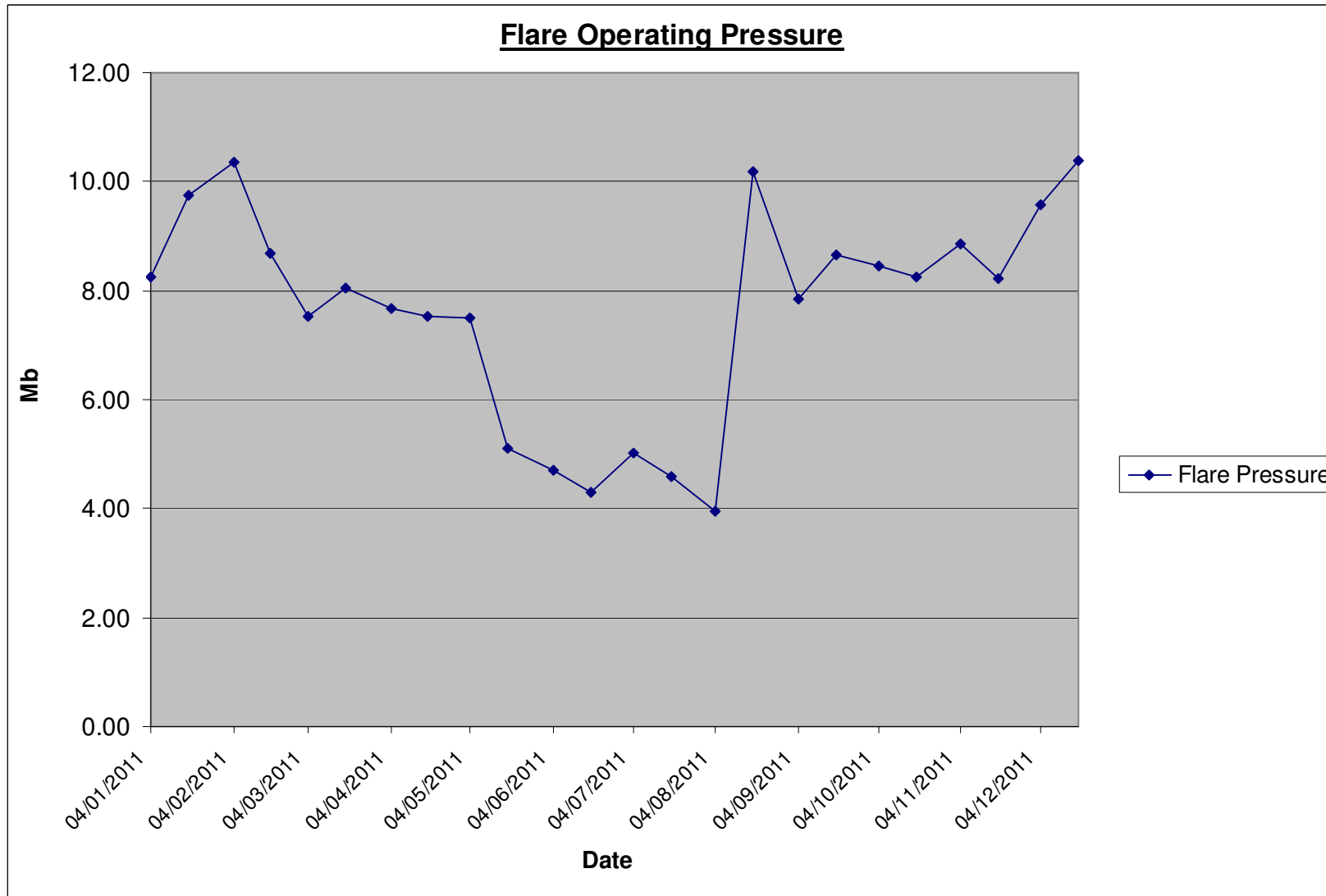
GAS FLARE DATA

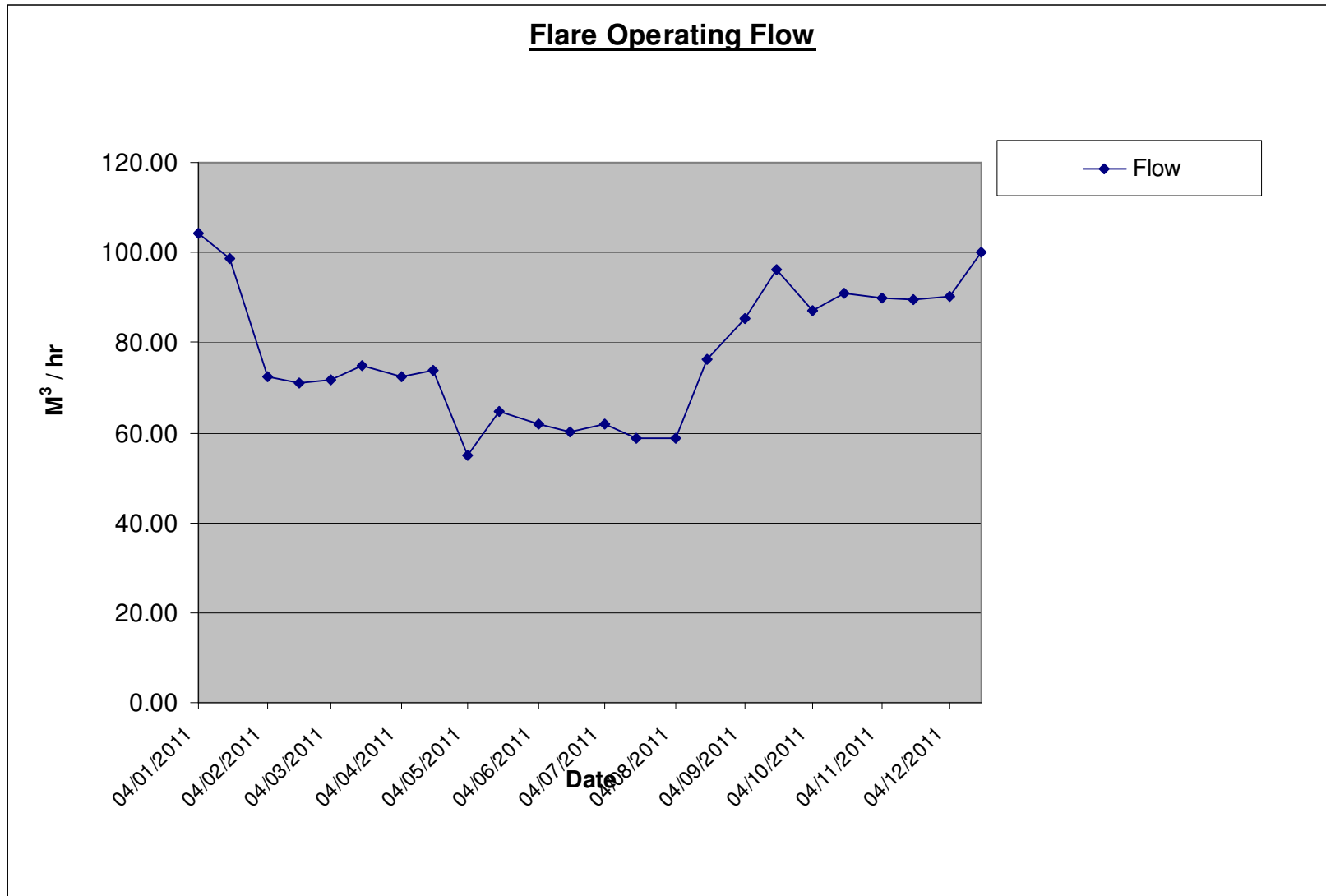
Date	Ambient Temp	Atm Pressure	CO2	CO	Flow	CH4	O2	Flare Pressure	Flare Temp
04/01/2011	3.42	982.47	18.69	0.35	104.23	24.10	5.16	8.24	852.41
18/01/2011	3.97	996.43	17.94	1.49	98.54	27.14	4.74	9.74	768.39
04/02/2011	4.16	999.67	20.37	0.45	72.48	29.83	5.69	10.36	641.20
18/02/2011	5.68	997.35	17.76	10.22	70.96	35.61	3.64	8.67	659.07
04/03/2011	8.09	1003.70	16.83	15.34	71.70	28.81	4.83	7.52	607.84
18/03/2011	7.83	1003.27	18.01	4.48	74.92	35.62	4.28	8.06	670.38
04/04/2011	13.03	1017.32	17.05	20.15	72.29	24.02	4.71	7.67	584.46
18/04/2011	11.67	1007.98	17.86	5.97	73.66	29.75	4.71	7.52	601.07
04/05/2011	16.05	1015.51	15.25	5.45	54.94	33.51	5.48	7.49	750.37
18/05/2011	11.48	1012.40	17.90	4.10	64.66	33.74	1.00	5.12	579.57
04/06/2011	12.47	1008.61	17.92	0.18	62.09	47.23	0.14	4.71	760.83
18/06/2011	13.20	991.03	17.71	2.31	60.18	39.60	0.32	4.30	720.94
04/07/2011	19.17	1011.57	19.97	0.68	61.95	50.87	0.32	5.02	776.77
18/07/2011	13.34	995.63	17.90	0.74	58.88	39.34	0.62	4.59	747.92
04/08/2011	14.11	1008.72	18.34	0.43	58.63	45.87	0.26	3.96	738.44
18/08/2011	12.03	997.46	18.29	5.54	76.21	29.46	1.57	10.17	754.69
04/09/2011	12.84	1011.21	17.47	10.23	85.49	32.87	1.42	7.85	767.48
18/09/2011	12.15	992.77	18.36	18.69	96.07	30.65	0.87	8.64	798.04
04/10/2011	10.74	1003.34	17.04	7.24	87.21	36.18	1.17	8.45	738.29
18/10/2011	9.39	982.96	16.57	0.24	90.93	32.02	0.88	8.26	742.61
04/11/2011	12.64	993.43	15.64	0.54	89.80	31.38	1.16	8.85	768.43
18/11/2011	11.92	998.05	16.62	0.27	89.50	33.41	0.75	8.21	743.02
04/12/2011	7.63	994.68	15.84	12.15	90.16	30.90	1.07	9.57	767.97
18/12/2011	9.35	1004.94	16.31	9.45	100.01	32.89	0.77	10.38	779.53

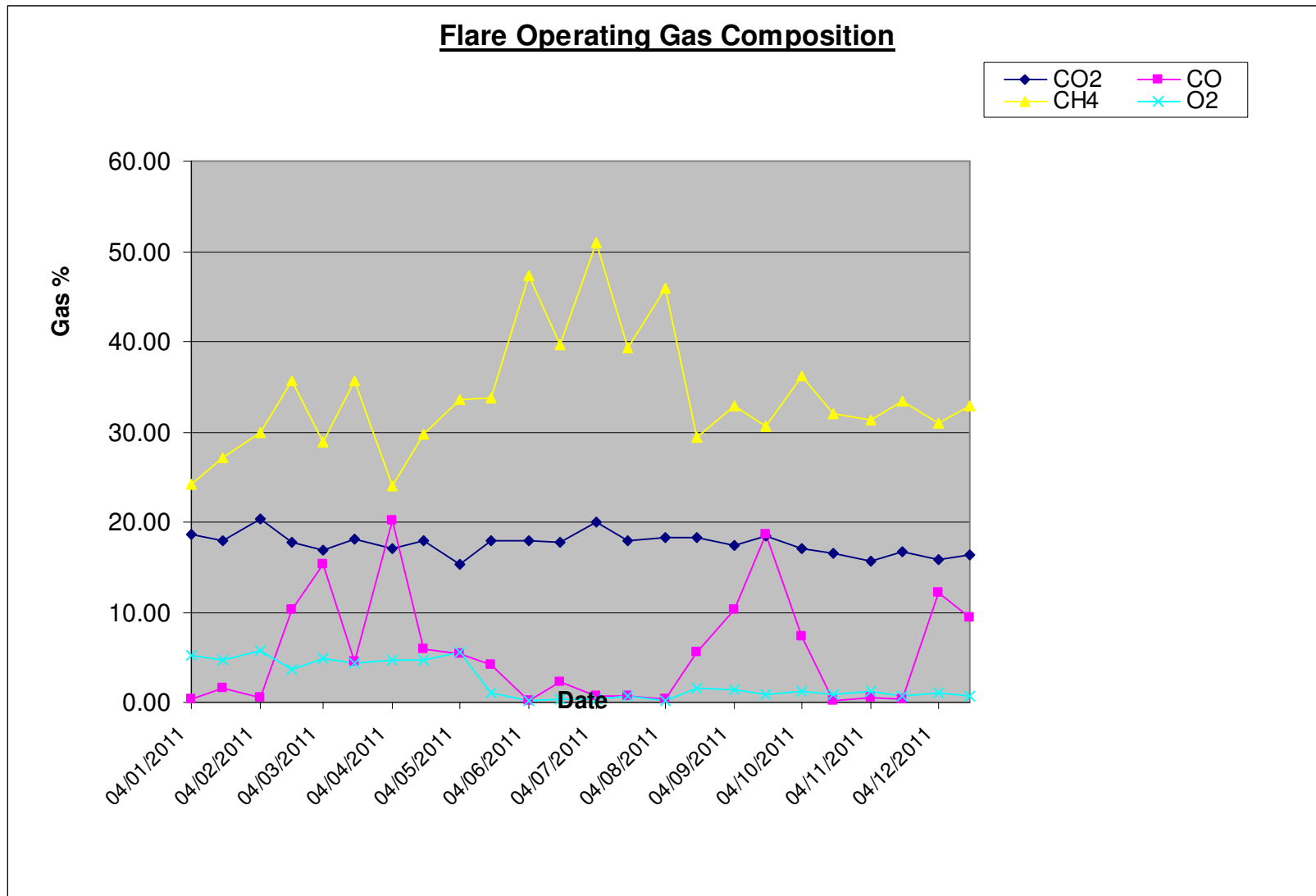














| PRTR# : W0070 | Facility Name : Benduff Landfill Site | Filename :
W0070_2011.xls | Return Year : 2011 |

23/02/2012 15:55

[Guidance to completing the PRTR workbook](#)

AER Returns Workbook

Version 1.1.13

REFERENCE YEAR	2011
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1. FACILITY IDENTIFICATION

Parent Company Name	Cork County Council
Facility Name	Benduff Landfill Site
PRTR Identification Number	W0070
Licence Number	W0070-01

Waste or IPPC Classes of Activity

No.	class_name
3.1	Deposit on, in or under land (including landfill).
3.13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
3.2	Land treatment, including biodegradation of liquid or sludge discards in soils.
3.4	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.
4.11	Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.

	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.
4.13	
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.
Address 1	Benduff
Address 2	Rosscarbery
Address 3	County Cork
Address 4	
	Cork
Country	Ireland
Coordinates of Location	-9.06927 51.5933
River Basin District	IESW
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	John P O' Donovan (W0070-01)
AER Returns Contact Email Address	johnp.odonovan@corkcoco.ie
AER Returns Contact Position	Facility Manager
AER Returns Contact Telephone Number	023 8850982
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	023 8850016
Production Volume	0.0
Production Volume Units	
Number of Installations	1
Number of Operating Hours in Year	0
Number of Employees	0

User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(d)	Landfills
5(c) 50.1	Installations for the disposal of non-hazardous waste General

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 [Link to previous years emissions data](#)

| PRTR# : W0070 | Facility Name : Benduff Landfill Site |
 Filename : W0070_2011.xls | Return Year : 2011 |

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR				
POLLUTANT		METHOD		
No. Annex II	Name	M/C/E	Method Used	
			Method Code	Designation or Description
01	Methane (CH4)	C	OTH	Total estimated methane generated minus methane flared
05	Nitrous oxide (N2O)	M	OTH	

METHOD			ADD EMISSION POINT	QUANTITY			
M/C/E	Method Used		Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
	Method Code	Designation or Description					
C	OTH	Total estimated methane generated minus methane flared	285630.0	0.0	285630.0	0.0	0.0
M	OTH		0.0	0.0	0.0	0.0	0.0

<p>Please enter summary data on the quantities of methane flared and / or utilised</p> <p>Total estimated methane generation (as per site model)</p> <p>Methane flared</p> <p>Methane utilised in engine/s</p> <p>Net methane emission (as reported in Section A above)</p>	T (Total) kg/Year	
	290283.0	
	4653.0	
	0.0	
	285630.0	

M/C/E	Method Used		Facility Total Capacity m3 per hour
	Method Code	Designation or Description	
C	OTH	Land GEM Modelling	N/A
C	OTH	hrs run	250.0
			0.0
C	OTH	Land GEM Modelling	N/A

(Total Flaring Capacity)
(Total Utilising Capacity)

[Link to previous years emissions data](#)

| PRTR# : W0070 | Facility Name : Benduff Landfill Site | Filename : W0070_2011.xls | Return Year : 2011 |

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

ADD NEW ROW | DELETE ROW *

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

SECTION B : REMAINING PRTR POLLUTANTS

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

ADD NEW ROW | DELETE ROW *

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

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

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

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

| PRTR# : W0070 | Facility Name : Benduff Landfill Site |
Filename : W0070_2011.xls | Return Year : 2011 |

23/02/2012 15:44

SECTION A : PRTR POLLUTANTS

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

ADD NEW ROW DELETE ROW *
Clicking on the Pollutant Name (Column B) then click the

delete button

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

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

[Link to previous years emissions data](#)

| PRTR# : W0070 | Facility Name : Benduff Landfill Site | Filename : W0070_2011.xls | Return Year : 2011 |

23/02/2012 15:44

4.4 RELEASES TO LAND

SECTION A : PRTR POLLUTANTS

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

ADD NEW ROW DELETE ROW *

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

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

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

**5. ONSITE TREATMENT & OFFSITE
TRANSFERS OF WASTE**

| PRTR# : W0070 | Facility Name : Benduff Landfill Site |
Filename : W0070_2011.xls | Return Year : 2011 |

23/02/2012 15:44

N/A