

***RAFFEEN CIVIC AMENITY & LANDFILL SITE
CORK COUNTY COUNCIL,
RAFFEEN,
MONKSTOWN,
CO. CORK***

***ANNUAL ENVIRONMENTAL REPORT
2012***

WASTE LICENCE NO. W0023-1

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Attachments – Maps Drawings 1-3 of Raffeen CA Site and Landfill

- Drawing 01 - Location Plan Showing Environmental Monitoring Points
- Drawing 02 – Location Plan Showing Gas & Leachate Extraction Points
- Drawing 03 – Site Plan Showing Final Capping Levels and Details
- Letter of Approval from the Agency to reduce the monitoring at Raffeen Landfill Site

ANNUAL ENVIRONMENTAL REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1.0 INTRODUCTION

1.1 Background

Raffeen Landfill site is operated by Cork County Council under Waste Licence W0023-01. The landfill is situated approximately 10 km south east of Cork City and approximately 2km south west of Monkstown. (National Grid Reference 1751E 0654N). The site is located adjacent to Monkstown Creek and the southern boundary of the site is located 100m to the north of the edge of the Cork Harbour Estuary. The landfilling of waste at the site took place between 1979 and October, 2001. The civic amenity centre has been open to the public for recycling and disposal since late January 2005. This report covers the period from 1st January, 2012 to 31st of December, 2012.

The site occupies an area of 7.25 hectares and is located in the centre of a narrow, steep sided valley to the west of a quarry. Quarrying was carried out prior to the commencement of landfilling operations at the site. The landfilling of waste has taken place and resulted in the formation of a steep sided valley.

Due to the considerable overlap between the required content of both the AER and the EMP reports, as outlined by the Agency in the “Draft Guidance On Environmental Management Systems & Reporting to the Agency” and the content specified in Schedule A and B of the Waste Licence, the two reports have been combined to form this (one) submission. The guidance notes indicate that the Environmental Management Programme Report is a sub section of the Annual Environmental Report.

1.2 Management and Staffing Structure of the Facility

The site is operated by Cork County Council, County Hall, Cork and is under the overall operational control of Mr. Liam Singleton, Senior Engineer, Cork County Council. Mr. Jerome O’Brien, Senior Executive Engineer is responsible for landfill operation and aftercare in South Cork, while Mr. Enda Kiernan, Executive Engineer is responsible for the management of the Raffeen closed landfill and Mr. Paul Collins is responsible for the Civic Amenity facility.

Ms. Lisa Collins is Manager of Raffeen Civic Amenity Site and is responsible for the day to day supervision and management. Mr. Paul Collins, Mr. Jerome O’Brien and Mr. Enda Kiernan act as Assistant Facility Managers and provide holiday, sick cover, etc., in Ms. Collins’ absence. Table 1.1 shows the management structure at Raffeen Landfill during 2012. Table 1.1: Management Structure

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Position	Employee Contact Details
<p>Senior Engineer Mr. Liam Singleton</p> <p>Executive Engineers – Civic Amenity Site Mr. Paul Collins Landfill Site - Mr. Enda Kiernan</p> <p>Deputy Managers: Mr. Jerome O’Brien</p>	<p>Cork County Council, County Hall, Carrigrohane, Cork.</p> <p>Telephone No: 021 4276891 Fax No: 021 4859786/7</p>
<p>Manager Raffeen CA Site Ms. Lisa Collins</p> <p>Manager Raffeen Landfill Mr. Enda Kiernan</p> <p>Deputy Managers: Mr. Jerome O’Brien Mr. Paul Collins</p>	<p>Cork County Council, Raffeen Recycling Centre & Landfill Site, Raffeen, Kerrycurrihy, Monkstown, Co. Cork</p> <p>Tel No: 021 4842082 / 4859350 Fax No: 021 4859787</p> <p>Out of Hours Emergency Contact Tel No.: 01 2575800</p>

Three General Operatives are employed at the civic amenity centre. They are responsible for the implementation of the waste acceptance procedures at the site, inspection of all loads arriving at the civic amenity centre and ensuring materials are placed in the correct receptacles. One general operative is based in the reception building/weighbridge adjacent to the site entrance during site opening hours.

Table 1.2 shows the operational staff currently employed at Raffeen Civic Amenity Centre. Any changes to this structure will be submitted to the EPA for agreement as per Condition 2.6.1 of Waste Licence Reg. No. W0023-01.

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Table 1.2: Operational Staff

Employee	Position	Duties and Responsibilities
Mr. John Hallihan	General Operative	Inspect all loads arriving at civic amenity centre.
Mr. William Mc Cormack	General Operative	Ensure materials are placed in correct receptacles.
Mr. Conor Galvin	General Operative	Dealing with the public and assisting the public as necessary.

2.0 WASTE MANAGEMENT ACTIVITIES AT THE FACILITY

2.1 Waste Quantities and Composition

The landfilling of waste was reported to have taken place at Raffeen Landfill site from circa 1979. It is estimated that a total of 580,300 tonnes of waste were landfilled at the site until it ceased landfilling of waste on site. No municipal waste has been accepted for landfilling at the site since 1st October, 2001. Final capping at Raffeen Landfill was completed in 2007.

The civic amenity centre has been open to the public since late January 2005. The centre accepts a range of materials, including:-

- Paper, newsprint, magazines
- Cardboard and Tetra Paks
- Glass bottles and flat glass
- Food tins
- Beverage/drink cans
- Plastic bottles
- Timber
- Green waste
- Scrap metal
- Aerosols
- Paint
- Textiles/reusable clothes
- Waste cooking oil
- Waste engine oil
- Empty gas bottles
- Lead acid, fence, and household batteries
- Fluorescent tubes and energy saving light bulbs and filament bulbs
- Waste electrical and electronic items including fridges and freezers
- Mobile phones
- Household construction and demolition waste (from April 2007 only rubble and ceramics are accepted).
- Printer cartridges

The quantity of materials (tonnes) collected for recycling during 2012 are outlined in Table 2.2. A total of 3294.92 tonnes of materials were collected for recycling during 2012. Figure 2.1 compares previous years.

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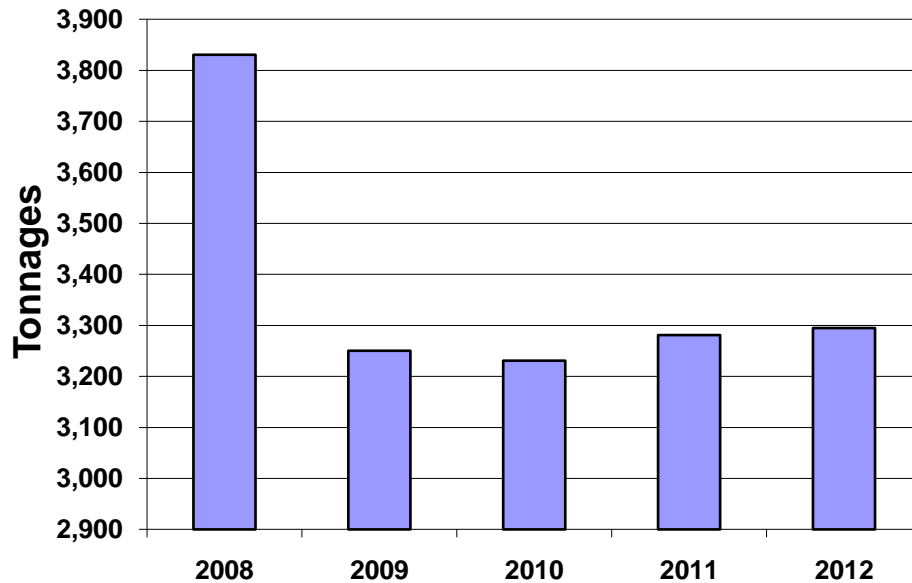


Figure 2.1: Tonnages of Recyclables Accepted at Raffeen CA Site

Residual waste from domestic sources is also collected at the Raffeen Civic Amenity Centre. A total of 1878.96 tonnes of residual domestic waste was collected and disposed of in 2012. This compares with:

- 1,636.67 tonnes in 2011
- 1,580.36 tonnes in 2010
- 1,709.36 tonnes in 2009
- 2,036.00 tonnes in 2008

All of the material was sent to Greenstar Ltd for treatment and disposal. Street sweepings from litter bin collections, fly tipping and other works carried out by the Carrigaline Area Office and the cleaning of bring sites amounted to a further 147.94 tonnes in 2012.

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	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Beverage Cans	0.34	0.08	0.36	0.20	0.18	0.16	0.10	0.38	0.16	0.10	0.12	0.16
Cardboard	9.30	9.58	7.98	14.76	4.98	9.48	10.48	6.72	9.02	7.96	9.48	8.02
DIY Waste	55.96	71.50	66.76	110.76	56.12	55.58	120.10	62.08	74.50	90.04	90.76	32.08
Food Tins	0.48	0.30	0.24	0.44	0.66	0.28	0.26	0.62	0.16	0.30	0.62	0.44
Glass Bottles	7.02	7.96	0.00	5.52	3.90	6.92	8.00	5.12	6.48	4.96	3.78	7.26
Green Waste	26.98	36.00	61.06	67.80	73.76	116.62	139.56	122.60	106.84	52.60	30.74	13.92
Household Batteries	0.20	0.00	0.26	0.10	0.00	0.18	0.28	0.00	0.00	0.00	0.00	0.28
Lead Acid Batteries	0.00	0.22	0.00	0.22	0.32	0.00	0.00	0.00	0.54	0.00	0.00	0.00
Paint	1.06	0.82	0.66	1.52	1.48	0.92	1.42	1.74	0.80	2.32	2.20	1.36
Paper	13.06	12.22	7.70	0.00	14.08	7.84	16.76	0.00	15.00	7.72	6.84	5.88
Plastic Bottles	3.46	2.16	2.40	2.78	2.64	2.70	3.16	2.70	2.36	2.50	2.62	2.68
Plate Glass	4.02	4.00	5.68	0.00	4.04	6.54	3.32	4.74	0.00	5.58	4.16	0.00
Plaster Board	10.46	0.00	7.84	0.00	7.40	0.00	10.34	0.00	9.86	0.00	6.90	0.00
Scrap Metal	15.08	15.38	11.80	15.42	15.86	12.84	13.96	17.18	15.54	11.28	14.40	8.28
Textiles	2.06	1.00	1.04	1.56	1.54	1.22	1.22	1.48	0.68	1.94	1.38	0.66
Timber	47.98	43.04	49.90	42.26	52.42	52.28	65.44	58.46	53.54	75.14	48.08	39.38
Waste Cooking Oil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00
Waste Engine Oil	0.94	0.00	1.04	0.00	1.26	0.00	1.20	1.14	0.00	0.46	0.00	1.00
WEEE	24.82	23.18	28.70	20.02	29.32	22.88	25.36	32.92	27.92	24.10	22.64	25.24
Totals	223.22	227.44	253.42	283.36	269.96	296.44	420.96	317.88	323.40	287.00	245.20	146.64

Table 2.2 – Raffeen Civic Amenity Centre Recycling Records 2012

3.0 SITE DEVELOPMENT WORKS

The following subsections describe the current and proposed future works at the site. The contract for the final restoration of the site is now complete. This contract involved the installation of the final capping, the gas abstraction system and the leachate abstraction system.

Development works on site were not carried out during 2012.

3.1 Leachate Management Infrastructure

During 2012 leachate was tankered from Raffeen Landfill to Carrigtohill Waste Water Treatment Plant. The total quantities removed from site were 27.16 tons in March 2012. In December 2012 an estimated additional 50m³ had been collected in the leachate tank and awaited delivery off site to the treatment plant.

3.3 Landfill Gas Management Infrastructure

The installation of the active gas abstraction system is complete. This was part of the Final Restoration Contract. The system comprises of gas abstraction wells within the waste body, condensate removal traps, gas abstraction wellheads and gas collection pipework. The permanent gas collection pipework is located within the subsoil layer of the final capping. The gas abstraction wells are composed of 300mm diameter boreholes. The installation of the gas abstraction wells was undertaken by a specialist sub contractor.

All gas abstraction boreholes (50 No. in total of which 10 No. are combined leachate and gas abstraction boreholes, and as shown on Drawing No. 02) were in place by late August 2006 with additional boreholes requested by the EPA in the central area of the landfill.

The flare compound was completed in June 2007 and is located in the area to the north of the Civic Amenity Centre. This location was selected in order to locate the flare compound as far as possible from existing houses in the area and in as low-lying an area of the site as possible to facilitate condensate removal. Within the Flare Compound, a partial vacuum induces a pressure gradient towards the abstraction wells and control the lateral movement of gas. An electrically driven centrifugal blower induces this vacuum. The extracted gas is flared to control emissions to atmosphere of methane and volatile organic compounds.

Gas pumping trials were carried out during the summer of 2007. The outcome of the trials determined that a 150cum/hr enclosed flare would be required for the site. The

flare was delivered to site in April 2008 and commissioned by July 1st 2008. AFS serviced the flare and carried out maintenance throughout 2012.

3.5 Access Roads and Paths

The gas flare compound is located on the northern boundary of the civic amenity centre. Access to the gas flare compound from the civic amenity centre. As part of the Final Restoration Contract, pedestrian pathways have been incorporated to provide access around the site to the environmental monitoring points.

3.6 Road Resurfacing

The road outside the facility was resurfaced during mid May 2008. Site traffic markings were re-lined in early 2010. This ensured that the public and collection vehicles are not using the same exit. It is anticipated that upgrading of line markings will take place in 2013.

3.7 Slides on the Compost Skip Railings

‘Slides’ were re-ordered in late 2011 to replace flaps on the bins to facilitate easier emptying of bags into the skip for the public.

3.8 Stream Diversion

Surface water from a quarry immediately to the east of the landfill had been entering the site. The quarry owner diverted this discharge to prevent it entering the landfill site during January 2008. Within the site the upper end of the stream diversion was relined to prevent surface water entering the body of the landfill.

4.0 EMISSIONS

4.1 Management of Emissions

Cork County Council is committed to ensuring that any emissions from the previous deposition of waste at Raffeen Landfill Site, and related activities will not result in the contravention of any relevant standard, including any standard for an environmental medium or any relevant emission limit value, prescribed under any other enactment.

Cork County Council is committed that the restoration of Raffeen Landfill and the operation of the civic amenity centre shall be carried on in accordance with such conditions as may be attached to the licence and will not cause environmental pollution.

Cork County Council shall use the best available technology to prevent or eliminate or, where that is not practicable, to limit, abate or reduce an emission from the activity concerned.

The environmental monitoring programme at the facility during the reporting period included monitoring of landfill gas, leachate levels and composition, groundwater, and surface water. The monitoring frequencies required by the Waste Licence and subsequent correspondence with the EPA are outlined in Table 4.1. The potential emissions from the site include dust, leachate and landfill gas are discussed in the following sections.

The Facility Landfill Managers application for a reduction in the environmental monitoring both in scale and frequency was approved on the 28/08/2012. Seven of the nine proposals presented were accepted. The approval of these proposals are attached as Attachment 2.

Table 4.1: Summary of Required Monitoring Frequencies

Parameter	No. of Locations	Monitoring Frequency
Groundwater Quality	6	Monthly, Quarterly & Annual
Surface Water Quality	5	Quarterly & Annual
Surface Water Inspection	4	Weekly
Leachate Composition	5	Quarterly & Annual
Landfill Gas Composition	6	Monthly
Landfill Gas Site Office Gas Monitoring Points	1	Continuously
	4	Weekly
Leachate Levels	5	Weekly
Groundwater Levels	7	Monthly
Dust Monitoring	3	3 times a year
Noise Monitoring	7	Annual

An Oliver IGD Tocsin 700 Gas Monitor was installed in the offices to continually monitor levels of methane, carbon dioxide and oxygen. This is serviced by CEMS.

4.2 Dust

Approval was obtained from the Agency by the Landfill Facility Manager, to cease dust monitoring at the facility from 2012 onwards as the landfill restoration is now complete

A wheel wash is on site to reduce the quantity of mud and debris taken off site and therefore reducing the generation of dust emissions on the adjacent public road. During 2012 the facility manager organised for road sweeping to be undertaken as necessary by Cork County Council personnel from the machinery yard.

4.3 Noise

A noise survey was carried at the landfill in accordance with the requirements of Schedule E and Table E.3.2, Schedule F.1 on the 18th of October 2012. All locations were within the limits as set out in the Waste Licence. This report was submitted to the Agency on the 12th of December 2012.

4.4 Odour

4.4.1 Odour

Potential for odour emissions has significantly reduced since municipal waste is no longer landfilled at the site. It is still accepted but placed in either a closed container (hopper with compactor attached), or in an open skip. There is potential for odours arising from this open skip, but this has not occurred as the open skips containing municipal waste are removed for landfilling almost every day.

The installation of an active gas abstraction system and flare controls the volume of gas being produced at the site and reduces the potential for malodours occurring from gas venting. The gas flare was installed in April 2008 and commissioned by July 2008. The permanent flare was in operation during 2012.

Odours were not found to be a nuisance during any of the site inspections of the civic amenity centre during the reporting period. Collection bins and skips in the civic amenity centre will be washed to prevent the generation of malodours should it be required.

4.5 Landfill Gas

4.5.1 Landfill Gas Monitoring

Monitoring of the composition of landfill gas was undertaken at eleven gas monitoring locations within and in the vicinity of the landfill site during the reporting period. The current monitoring points are G & L1, G & L3, G & L4, GM 6, GM 7, GM 9, G & L11, G & L12, GM11A, GM12A and GM13A and the site office. During 2012 it had not been possible to access all of the monitoring.

Monitoring is undertaken on a monthly frequency at six of the monitoring boreholes; G & L1, G & L3, G & L4, GM6 (G & L6), G & L11 (GW4) and G & L12 (GW6). At the request of the EPA monitoring is undertaken on a weekly frequency at the site office and at monitoring locations GM7 (G & L7), GM9, (G & L9), GM 11A, GM12A and GM13A. Monitoring was discontinued at GM10 on the 22nd of October 2007 as the three monitoring points GM11A, GM12A and GM13A installed in April 2007 are sufficient to monitor gas migration to the south of the landfill.

An Oliver IGD Tocsin 700 Gas Monitor continually monitors gas levels in the civic amenity site office. In the event of monitoring indicating that the concentration of methane exceeds 1% v/v or the concentration of carbon dioxide exceeds 1.5%. The Facility Manager will inform the licensing authority immediately. No methane has been detected within the site office to date and carbon dioxide levels are well within acceptable levels.

Landfill Gas Flare

The permanent gas flare was in operation during 2012. The average percentage for methane, oxygen and carbon dioxide gas burned on the site were of the order of 29.3%, 0.40% and 22.2% respectively. Gas field balancing is carried out on site when required. The gas is collected from 50 wells in the lined area of the landfill and 8 wells in the unlined area of the landfill. The results are relayed to a PC in the main office building. The total quantity of landfill gas flared off at Raffeen Landfill in 2012 was 246,483 m³ of which methane comprised 82,586m³.

4.6.0 Ground Water Monitoring

4.6.1 Scope of works

There are six groundwater monitoring boreholes at Raffeen Landfill Site - (GW1, GW2, GW3, GW5, GW7 and GW8). GW3 and GW7 are damaged and not in use. No access is permitted to GW1. Detailed recording of results are found in the quarterly reports for 2012.

4.6.2 Ground Water metal concentrations monitoring

Monitoring of the ground water at the various locations indicates that the level of metals tends to be within the IGV for groundwater. Historically iron and manganese concentrations have been above the IGV, results from 2012 annual monitoring schedule indicate that they are within the limits

Total chromium concentrations ranged from <0.001mg/l to 0.003 mg/l. All ground water sites are within the interim guideline value of 0.03 mg/l.

Cadmium concentrations at all the monitoring locations are within the IGV value of 0.005mg/l, results issued are detection limit values as the concentrations present were lower than the method detection limit. These results are similar to 2011 cadmium.

Cyanide concentrations are recorded as <0.10 ug/l for all sites. Indicating they are within the drinking water directive limit of 0.05 mg/l and corresponding IGV limit of 0.01 mg/l. Results indicate that cyanide levels for the site are within limits.

Monitoring from 2012 illustrate that mercury levels are within the target IGV value of 0.001 mg/l. These results are similar to 2011 mercury results.

Iron and manganese concentrations are within the IGV values for groundwater. Historically the levels for these metals were elevated due to the topography of the site. Iron results were recorded as <0.02 mg/l to 0.193 mg/l for all sites. This indicates that all sites up gradient and down gradient of the landfill are within the IGV value for iron 0.2 mg/l.

Results for lead concentrations ranged from <0.0003 ug/l to 0.0008 ug/l are below the IGV value of 0.01 mg/l, up gradient and down gradient of the landfill site. .

4.7.0 Surface Water

4.7.1 Scope of work

There are seven surface water monitoring locations for the landfill site at Raffeen, monitoring was carried out all the location as per license requirements. Monitoring locations SW4 are located up gradient of the site, while SW2, SW2A, SW3 and SW2B are all located down gradient of the landfill site. SW 5 known as the new culvert collects surface water runoff from the capping.

Results have been compared to the environmental quality standards (EQS) set for surface water by the EPA in the publication “Towards Setting Guideline Values for “The Protection of Groundwater in Ireland”.

The monitoring to date indicates that the landfill site is not significantly impacting on the surface water quality in the vicinity of the site. The water quality data for 2012 is similar to that recorded previously. Detailed recording of results are found in the quarterly reports for 2012.

The monitoring locations SW2, SW2A, SW2B and SW3 are located down gradient of the site within Monkstown Creek. This is a tidal estuary and for this reason the water chemistry of the samples taken from these locations can be influenced by the incoming sea water

4.7.2 Surface Water analysis results

Monitoring at the down gradient locations SW2, SW2A, SW2B and SW3 illustrates variations in the concentration of ammoniacal nitrogen. Locations SW2 and SW2B had the highest concentrations present; this is in keeping with trends from 2011 and 2012.

Results from BOD monitoring indicate similar trends to 2011. SW 2 continues to have the greatest concentration of BOD present of all surface water monitoring locations. Analysis of COD data indicates a similar trend in levels as BOD.

Cadmium, chromium, iron, zinc, lead, copper and mercury results were within the EQS for all surface water. Manganese and Iron results for SW2, SW2B, and SW3 were above the EQS limit of 0.05 mg/ and 200 ug/l. This is similar to previous results.

4.8.0 Leachate monitoring

4.8.1 Scope of work

There are three combined leachate monitoring boreholes located within the site these being; G & L1, G & L3 and G & L4. In 2006 the existing monitoring locations G & L11 (GW4) and G & L12 (GW6) were included as leachate monitoring locations.

There was no access to monitoring location G & L2 or G & L5 during the reporting period as these monitoring installations were damaged by construction activities taking place at the site during 2005. It will not be necessary to replace these two leachate monitoring boreholes as monitoring locations G & L11 (GW4) and G & L12 (GW6) monitor the leachate composition within the waste body.

Monitoring of the leachate composition is undertaken on a quarterly and annual basis.

4.8.2 Leachate monitoring

There has been no significant change in the composition of the leachate at the site. The highest strength leachate is seen at monitoring location G & L3 as reflected in the analytical data.

The monitoring of the composition of the leachate at the site indicates that the leachate is of a lower strength than the values typically quoted in the literature. Many of the parameters are within the standards set for drinking water. This is considered to be due to the high proportion of construction and demolition waste which has been landfilled at the site. The leachate composition is not considered to be significantly impacting on the environment in the vicinity of the site. The surface water and groundwater are naturally discharging to the estuary where significant dilution is available. Monitoring of the surface water quality in the vicinity of the site indicates that significant pollution is not occurring at the site. Detailed recording of results are in the quarterly reports.

Topographical Survey

A topographical survey was carried out in July 2010 by Focus Surveys Ltd. An original and three copies have been sent to the Agency as required under the licence. This survey is due to be repeated in 2013.

Leachate Generation

Raffeen Landfill is an unlined site. The leachate abstraction system has been installed as part of the Final Restoration Contract. The discharge of leachate from the waste body is taking place to the groundwater and / or the surface water in the vicinity of the site. Both the surface water and groundwater are discharging to the Cork Harbour estuary immediately down gradient of the landfill where significant dilution is available.

The water balance method has been used to predict the likely annual leachate generation rates at the landfill site in order to estimate the potential leachate emissions from the facility. This method is based on the use of a mathematical equation which provides a conservative estimate which caters for worst case scenarios. The method used for the Raffeen Landfill Site is based on the equation developed by Ehrig (Quality and Quantity of Sanitary Landfill Leachate, 1983).

The equation is as follows; $L_0 = [(ER.a) + LW + IR] - [aW]$

Where:-

L_0 : Free Leachate Produced

ER: Effective Rainfall (net precipitation after loss by evaporation).

a: Area of Cell(s)

LW: Liquid Waste

IR: Infiltration from restored areas
 aW: Absorptive capacity of waste
 a_R: Restored Area

The results of the leachate generation estimates are summarised in Table 4.4 with the calculations provided in Table 4.5. Data from Rossmore CA Site for 2012 has been used in the estimates as this is one of the closest meteorological stations to the site. Effective rainfall corresponds to the amount of total rainfall minus evapotranspiration. Monthly rainfall figures from the weather station at Rossmore CA Site for 2012 are shown in Table 4.4. Potential evapotranspiration data from Rossmore CA Site for 2012 was obtained (Table 4.4).

The water balance method assumes that the infiltration on an uncapped cell which is open for a full year is taken as being 100% of the effective rainfall on the site. As outlined in the EPA Landfill Site Design Manual in areas that have been temporarily capped / restored an infiltration rate of 25 – 30% of the annual rainfall is recommended while in restored areas infiltration would be between 2 – 10%. Since 100% of the final capping has been installed at the site an infiltration rate of 2% was used for the restored area to provide an estimate of the quantity of the leachate being generated at the site. This method does not take into account the steep nature of the site (up to 1:2.5) in the leachate generation calculations. The water balance for the site has been calculated based on the assumptions outlined below.

Table 4.4: Water Balance Data 2012

Month	Rainfall	Evapotranspiration	Capped Cells Area (m ²)	Effective Rainfall (mm)	Infiltration Factor	Leachate Production (m ³)
Jan	58.4	32.8	65000	25.6	0.02	33.3
Feb	45.8	27.3	65000	18.5	0.02	24.1
Mar	25.2	41.3	65000	0	0.02	0.0
Apr	74.2	53.3	65000	20.9	0.02	27.2
May	74.6	55.9	65000	18.7	0.02	24.3
June	267.4	57.8	65000	209.6	0.02	272.5
July	112.9	61.4	65000	51.5	0.02	67.0
Aug	108	69.6	65000	38.4	0.02	49.9
Sept	15.8	59.4	65000	0	0.02	0.0
Oct	94.2	40.2	65000	54	0.02	70.2
Nov	103.8	25.5	65000	78.3	0.02	101.8
Dec	138.4	27.4	65000	111	0.02	144.3
Total	1118.7	551.9		626.5		814.5 m ³

In its annual summary, MET Eireann states that the rainfall totals for 2012 were above or near the average everywhere except for some parts of the midlands and the west. March was the driest month of the year, and the warmest March in 50 years. June however was the wettest month of the year and one of the wettest on record.

Leachate Emissions

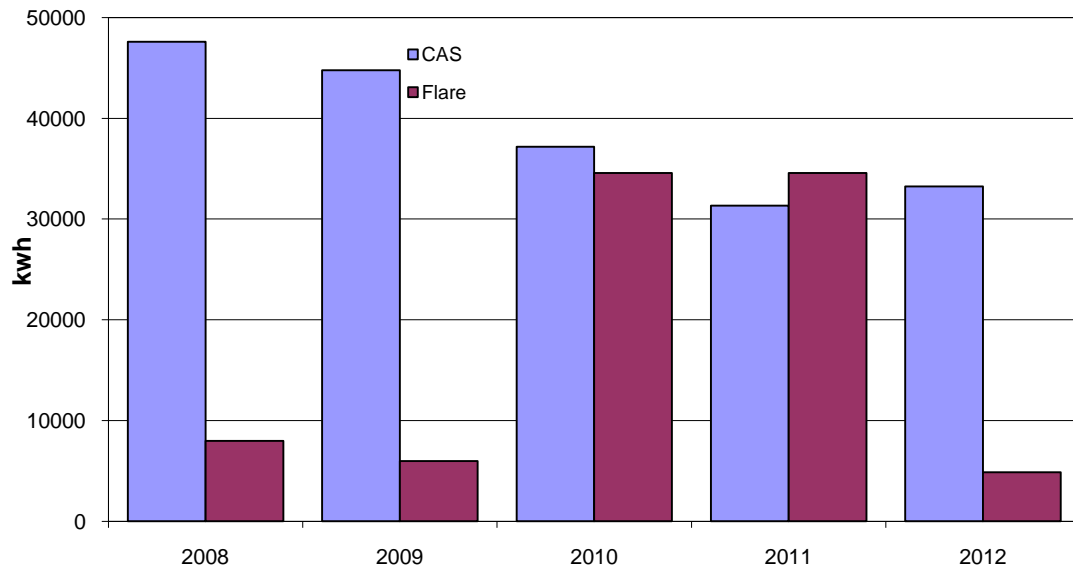
Leachate generation at Raffeen Landfill is estimated at 814.5 m³/annum. As indicated by the monitoring of the leachate composition since 2000 the leachate at Raffeen is of low strength when compared to the values typically quoted for leachate composition. The environmental monitoring programme at the site indicated no impact by leachate in the groundwater quality in the vicinity of the landfill

5.0 ENERGY CONSUMPTION/GENERATION

5.1 Resource and Energy Consumption Summary

The landfilling of waste has ceased at the site and therefore fuel is no longer used by site machinery. Records indicate that the ESB usage at the landfill site office during the year amounted to an estimated 38092kW hours in 2012. Usage trends are shown in Figure 5.1 below.

Figure 5.1: Energy Usage at Raffeen Landfill & Civic Amenity Site



A permanent flare was also installed in 2008 and was commissioned at the end of June. The energy usage for this is accounted for on a separate connection. In total an estimated 4863 kW hrs were used to run this flare in 2012. The reduction in the energy usages can be attributive to running the flare at night on the night rate premium.

The packing of the skips carried out by JCB used an estimated total of 3,000 litres in 2012.

6.0 ENVIRONMENTAL INCIDENTS AND COMPLAINTS

Condition 3 of the Waste Licence requires that the licensee shall make written records of environmental incidents and complaints.

6.1 Incidents & Complaints

There were no complaints or incidents in 2012.

6.2 Review of Nuisance Controls

6.2.1 Litter Abatement Measures

Any loose litter on the Civic Amenity Site are collected by site staff. The results of which are recorded in the weekly site inspection record sheet.

All contractors transporting materials offsite for recycling from the civic amenity centre are required to ensure that when transporting and discharging these loads that litter generation is kept to an absolute minimum. All vehicles are required to be totally sealed or covered with a net or tarpaulin to ensure that materials are not blown from the vehicles.

6.2.2 Birds

Municipal waste is no longer accepted for landfilling at the Raffeen waste facility. However, it is accepted into skips at the Civic Amenity Centre for transport to an alternative landfill. Waste is now being transported to Greenstar for segregation. Waste accepted from street sweepings has decreased.

To mitigate the impact of birds perching on skips when there is no human activity in that area the skips were retrofitted with a roll-over tarpaulin cover in April/May 2008. They are easily used and can be operated by one person. They are opened by Council workers when depositing residual waste and closed immediately afterwards.

6.2.3 Vermin and Flying Insects

The situation is continuously monitored by the Facility Manager and preventative baiting is undertaken by a specialist contractor on a regular basis. A comprehensive pest control programme is in place on site and on occasions, particularly coming into the winter, when vermin tend to migrate to warmer locations the pest control company lay extra bait where needed.

Flies do not pose a problem at the Raffeen Civic Amenity Centre. Residual (municipal) waste bins are emptied frequently at the Greenstar facility. Wasps however, do cause potential problems during the summer, however, Wasp 'catchers' and spray were purchased to minimise the impact on visitors to the site.

6.2.4 Fires

The burning of waste or other material is not permitted at the facility. In the event that a fire breaks out on the site, it will be treated as an emergency and dealt with immediately, in accordance with the Emergency Response Procedure for dealing with fires.

6.2.5 Odour Control

The landfilling of waste no longer presents a potential to generate odours. Other potential odours include odours from gas production from the waste body of the landfill. However, the gas management system and permanent flaring has been installed and commissioned since July 2008, and odours have not been a problem from the waste body.

The operation of the civic amenity centre also has the potential to generate odours. Odours may occur from putrescible waste in skips; however residual (municipal) waste bins are emptied frequently at Greenstar Ltd. Should it be required collection bins and skips in the civic amenity centre shall be washed to prevent the generation of malodours. Weekly inspections of the site have shown odour has not been a nuisance. Odour, where detected has been from farming activities in the area.

6.2.6 Dust Control

During 2012 the Facility Manager organised for road sweeping to be undertaken as necessary. The Facility Manager ensures that effective dust control measures are implemented on site.

7.0 ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

In accordance with Condition 2 (Management of the Facility) of the Waste Licence (W0023-1) Cork County Council (CCC) is required to establish and maintain a documented Environmental Management System (EMS) for the facility.

7.1 Objectives and Targets

The purpose of this section is to determine what progress has been made towards achieving the objectives and targets proposed during the previous year, and how the objectives will continue to be met and improved upon in the forthcoming year. It also outlines any new objectives proposed for the forthcoming year.

Objective 1: Establish an environmental awareness programme on site targeting the further development of recycling.

The civic amenity centre opened in late January 2005 and since then has increased recycling awareness in the area to the extent that the number of users at the site has been increasing steadily over the years. User numbers (or vehicles counted entering the site) dropped in 2012 compared to previous years; this may be as a result of the current economic climate and the fact that people are storing their recyclables for longer periods of time resulting in fewer trips to the site.

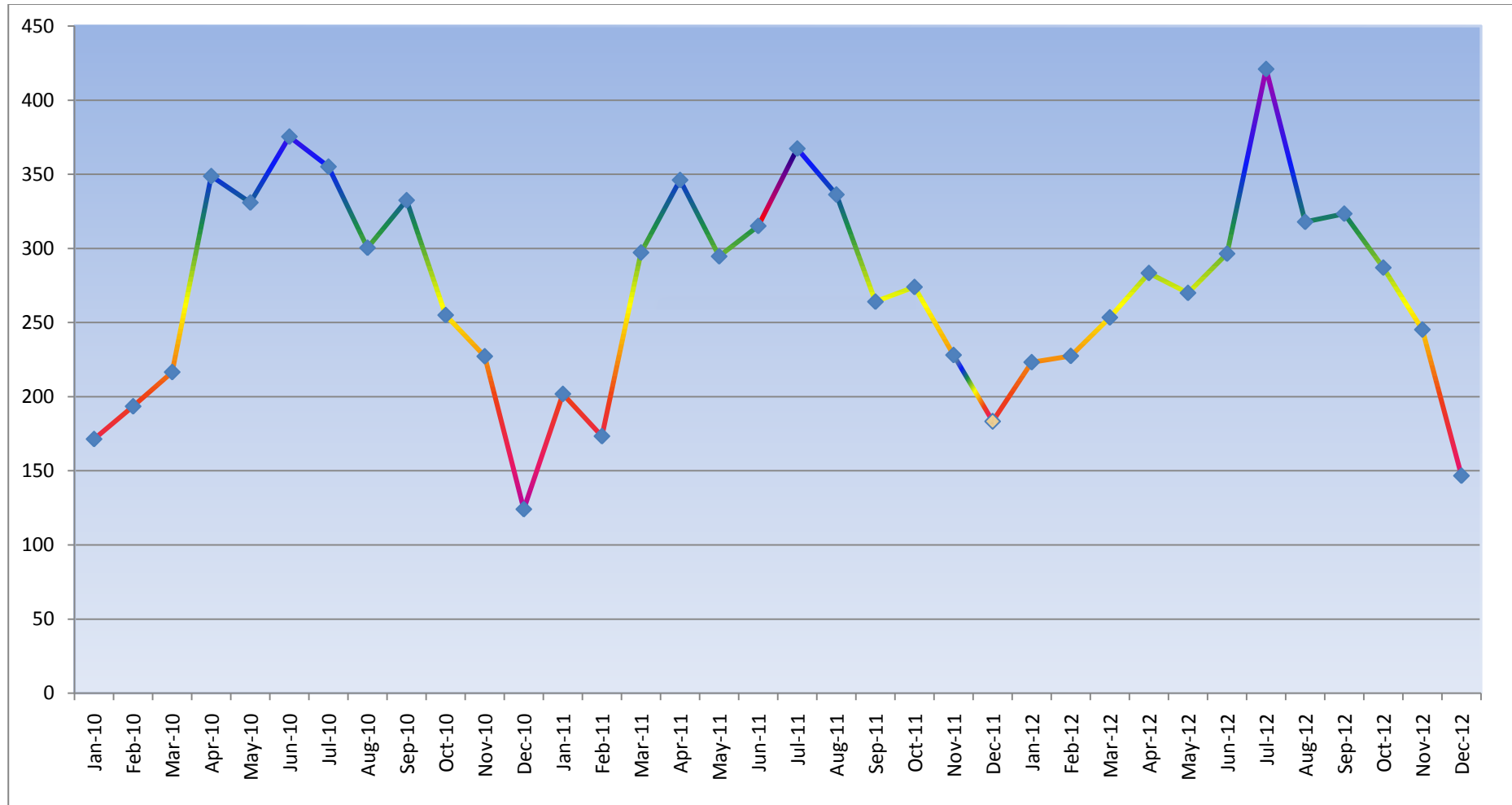
In 2012 over 42,627 vehicles were logged as entering the facility with the intention to recycle or dispose of material. This is a reduction on the numbers for 2011(45,493) 2010 (50,424 vehicles) and 2009 (60,001 vehicles). Usage has decreased on every day of the week compared to previous years.

Saturdays still tend to be busier in regards to the number of vehicles compared to week days, though the afternoons are now noted to be quieter in terms of user numbers than in previous years.

Statistics for 2012 give approximately 138 vehicles per day. However it is more realistic to take Saturday out of this calculation. This gives an average of 120 vehicles excluding Saturdays and an average of 229 vehicles for Saturdays only.

Weekends were busiest from April to September with Saturday 24th March being the busiest day of the year with 310 vehicles registered as entering the facility. Tuesday 1st of May was the quietest of the year with 44 vehicles registered as entering the site.

Figure 7.1: Monthly User Numbers at Raffeen CA 2010-2012



General Operatives are updated continuously on recycling information relevant to the operation of the site. Leaflets on the facility, what it accepts and how to present it at the site and on other recycling and environmental matters are available upon request at the site office. Numerous telephone queries are responded to on a daily basis advising people on the best way to present their materials at the site or sometimes a more suitable location.

The Facility Manager provides information on recycling and has completed the FÁS Waste Management Training Course. Any deputy/assistant Facility manager will also undergo this training. All general operatives have completed the FÁS Waste Operative Training Course.

The responsibility of achieving these targets lie with the Facility Manager, Deputies/ Assistants and the General Operatives employed at the site.

Objective 2: Cork County Council propose to continue investigating new materials and markets for collected recyclable material at the civic amenity centre.

Cork County Council provides collection facilities for the recycling of a wide range of goods. Materials currently collected at the civic amenity/ recycling centre are listed in Section 2.1 Waste Quantities and Composition. All aspects including costs of recycling versus landfilling and the impacts of certain materials in landfill (e.g. paints, aerosols, engine oil, containers, and polystyrene) must be carefully considered for the future operations of the site.

Objective 3: Cork County Council to examine the viability of inviting local school groups or other interested parties to the site.

A number of groups and individuals are interested in recycling and seen the activities at a working site. A site visit from a school did not occur during 2012.

It is intended to continue these informative site visits as there has been very good feedback in the past from students and teachers. It is the responsibility of the Facility Manager to ensure this occurs.

Objective 4: Cork County Council to investigate the possibility of providing nesting boxes and the establishment of bird hides.

Landscaping planting works were completed by mid April 2008. A suitable amount of time must be given for the establishment of vegetation, after which a suitable programme for the installation of nesting boxes will be investigated.

Objective 5: Implementation of Landscape Proposal

Landscaping works were completed by mid April 2008.

The implementation of the landscape proposals satisfies the following objectives:-

- Re-establishes native woodlands and scrub habitats that reflect the character of existing habitats and provides a wildlife corridor between existing fragmented habitats.
- Creates a diverse range of habitats including aquatic, marsh, meadow, hedgerow, scrub and woodland.
- Ensures that all adverse visual impacts affecting local properties and the landscape in general are effectively mitigated against.
- Provides an attractive setting to the recycling facility.
- Provides a planting specification that shall minimize long-term maintenance.

Objective 6: Maintain monitoring programme

The environmental monitoring programme has been in operation at the site since before the waste licence was issued. The programme meets the requirements of the waste licence and was expanded in 2006 in response to requests made by the Agency. The monitoring programme continued at current frequencies during 2012. A submission was made to the Agency outlining the proposed revised monitoring frequencies during the aftercare period. The Agency agreed to this proposal on 28/08/2012.

Objective 7: Full review of all procedures and forms

Procedures at the site were reviewed during 2011 and completed in 2012. This is the responsibility of the Facility Manager and General Operatives.

7.2 Summary of Procedures Associated with the Facility

There have been no new procedures developed at the site during the reporting period.

7.3 Financial Provisions

Cork County Council is committed to protecting the environment and will ensure the provision of the necessary funds to meet any financial commitments or liabilities incurred by the carrying out of the disposal activities relating to the Raffeen Landfill. These commitments include compliance with the waste management licence (No.

W0023-01) and restoration and aftercare of the site as specified in Condition 8 of the licence.

Under Section 38 of the Waste Management Act, 1996, Cork County Council “shall provide and operate, or arrange of, such facilities as may be necessary for the recovery and disposal of household waste arising within the functional area”. Compliance with section 38 and all other relevant sections of the waste management act, 1996 is a statutory obligation of Cork County Council. 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 and maintenance works required to fulfil conditions of the waste licence for the Raffeen Landfill.

In 2012 budget funding of approximately €80,000 was made available for operational / maintenance costs of the landfill, and approximately €400,000 for the operation and maintenance of the Civic Amenity Site.

8.0 ENERGY AUDIT

Two audits have been undertaken on site in 2007 and 2008.

In October 2007 an energy audit was carried out by the Energy Section of Cork County Council. A data logger recorded energy usage over a number of weeks. This identified lighting of the site as being the main usage of electricity on site contributing to 73% of energy costs. The audit identified an approximate daytime usage of 1.5 kW/hr compared to 8kW/hr at night. A night meter was installed in early November at Raffeen to reduce costs down.

In December 2008 an energy audit was carried out by the Energy Section of Cork County Council. A data logger recorded energy usage over a number of weeks. This identified lighting of the site as being the main usage of electricity on site. Operation of the Civic Amenity Site uses approximately 1.2 kW with occasional jumps of 7 - 12 kW during the day. However at night, with external lighting, usage averages at 8kW.

A reduction in energy usage from lighting has been achieved by turning off unnecessary outside lights after the site is closed.

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Attachments

AER -2012

Attachments

- Drawing 01 - Location Plan Showing Environmental Monitoring Points

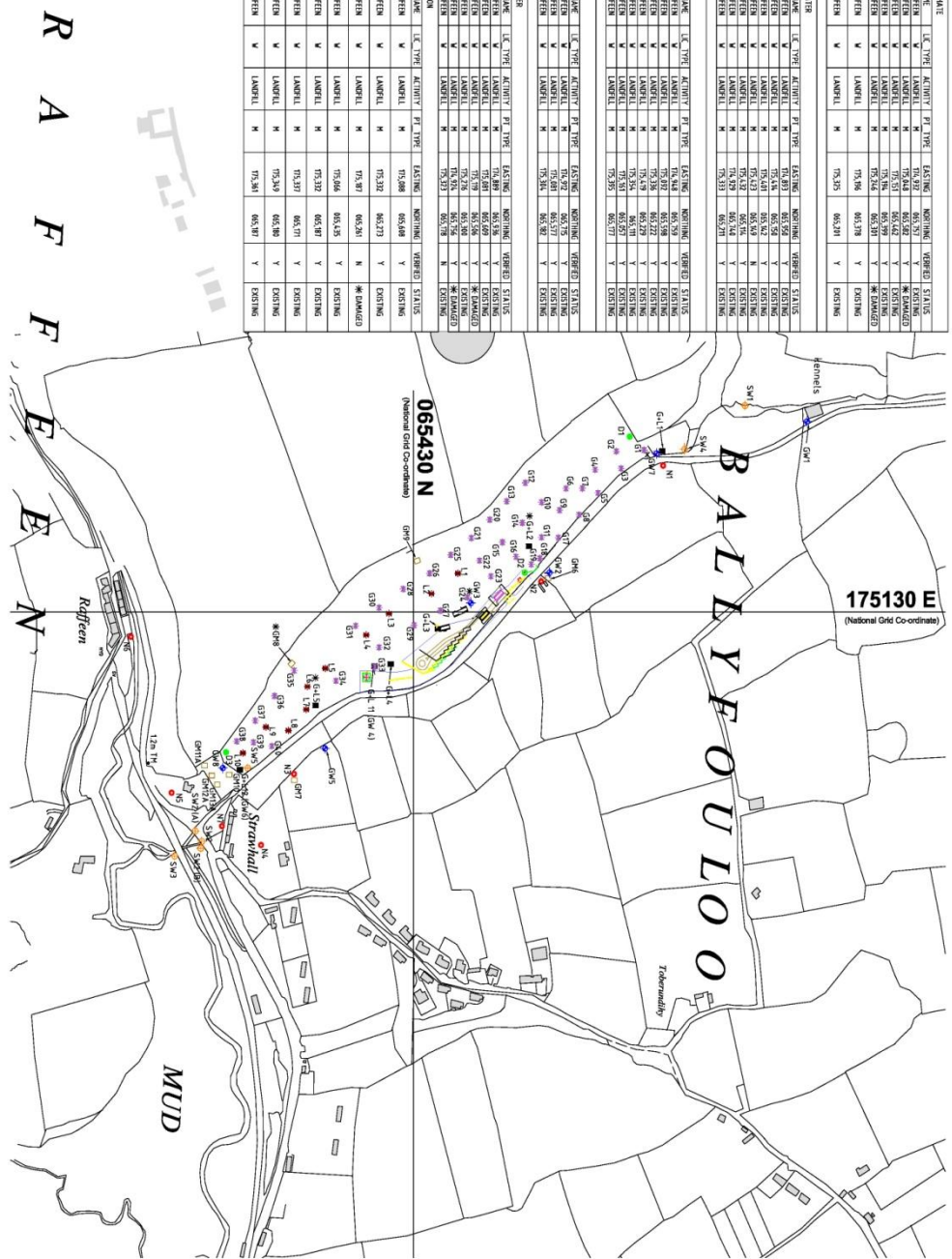
- Drawing 02 – Location Plan Showing Gas & Leachate Extraction Points

- Drawing 03 – Site Plan Showing Final Capping Levels and Details

- Letter of Approval from the Agency to reduce the monitoring at Raffeen Landfill Site

- PRTR- Raffeen Landfill

PT ID	NAME	LC TYPE	ACTIVITY	PT TYPE	EASTING	NORTHING	VERIFIED	STATUS
06A1	RAFFAEL	W	LANDFILL	M	75,542	06,571	Y	EXISTING
06A2	RAFFAEL	W	LANDFILL	M	75,541	06,572	Y	EXISTING
06A3	RAFFAEL	W	LANDFILL	M	75,541	06,562	Y	EXISTING
06A4	RAFFAEL	W	LANDFILL	M	75,541	06,579	Y	EXISTING
06A5	RAFFAEL	W	LANDFILL	M	75,538	06,570	Y	EXISTING
06A6	RAFFAEL	W	LANDFILL	M	75,538	06,570	Y	EXISTING
06A7	RAFFAEL	W	LANDFILL	M	75,539	06,570	Y	EXISTING
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NOTES

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Mr Enda Kiernan
Facility Manager
Cork County Council
Raffeen
Kerrycurrihy
Shanbally
Monkstown, Co Cork

South/South West Region
Environmental Protection Agency
Regional Inspectorate, Iniscarra
County Cork, Ireland

Cigireacht Réigiúnach, Inis Cara
Contae Chorcaí, Éire

T: +353 21 487 5540

F: +353 21 487 5545

E: info@epa.ie

W: www.epa.ie

LoCall: 1890 33 55 99

28/8/12

Our Ref: W0023-01/gen15vt.

Dear Mr Kiernan

The Agency has reviewed your risk assessment proposal to reduce the monitoring frequency in accordance with Condition 1.3 and Condition 9.7 submitted on 28/5/12. As part of the assessment the Agency notes that restoration of the landfill has been completed since summer 2007.

I am to advise that the following proposals are to the satisfaction of the Agency:

- Proposal 1 weekly landfill gas monitoring at G&L 9, G&L 7, GM 11A-13A, T1 & T2 be reduced to quarterly
- Proposal 4 Groundwater frequencies be reduced from (a) monthly to quarterly monitoring (b) quarterly to twice yearly monitoring, with (c) the annual monitoring suite being retained.
- Proposal 5 Noise monitoring locations reduced from 7 to 4, cease monitoring at N4, N5 and N6.
- Proposal 6 Dust monitoring to be discontinued on site.
- Proposal 7 Monitoring requirements of leachate reduced to twice yearly however maintain existing monitoring of leachate levels and the annual suite of monitoring shall remain in place.
- Proposal 8 Bund testing of the leachate storage tank to be discontinued while there is no leachate stored on site. The licensee shall notify the Agency if you propose to store leachate in the tank in future and ensure that any bunds in use continues to form part of the integrity testing regime on site in compliance with Condition 4.12.5.

The above agreements are subject to the following:

- Full compliance with the Conditions of your licence (Waste Licence Register No. W0023-1) and
- the above agreement may be revoked at any time by the Agency.

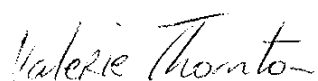


I am to advise that the following proposals are not to the satisfaction of the Agency:

- Proposal 2 & 3 monitoring frequencies are to remain in place

If you have any queries, please contact Team A at 021 4875540. Please quote the above reference number in future correspondence in relation to this matter.

Yours sincerely



Valerie Thornton, OEE
Office of Environmental Enforcement

AER Returns Workbook

REFERENCE YEAR	2012
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1. FACILITY IDENTIFICATION

Parent Company Name	Cork County Council
Facility Name	Raffeen Landfill Site
PRTR Identification Number	W0023
Licence Number	W0023-01

Waste or IPPC Classes of Activity

No.	class_name
3.1	Deposit on, in or under land (including landfill).
3.11	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.12	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
4.10	The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.
4.11	Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
4.13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.
4.2	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
4.3	Recycling or reclamation of metals and metal compounds.
4.4	Recycling or reclamation of other inorganic materials.
4.9	Use of any waste principally as a fuel or other means to generate energy.
Address 1	Raffeen
Address 2	Kerrycurmhy
Address 3	County Cork
Address 4	
Country	Cork
Country	Ireland
Coordinates of Location	-8.36184 51.8414
River Basin District	IESW
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Enda Kiernan
AER Returns Contact Email Address	enda.kiernan@corkcoco.ie
AER Returns Contact Position	Executive Engineer
AER Returns Contact Telephone Number	021-4285104
AER Returns Contact Mobile Phone Number	086 6076039
AER Returns Contact Fax Number	
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	1
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(d)	Landfills
5(c)	Installations for the disposal of non-hazardous waste
50.1	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. WASTE IMPORTED/ACCEPTED ONTO SITE

[Guidance on waste imported/accepted onto site](#)

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities)?	No
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This question is only applicable if you are an IPPC or Quarry site

Facility ID & Activities

SECTION A - SECTOR SPECIFIC PTRR POLLUTANTS											
RELEASES TO AIR											
POLLUTANT	Name	M/G/E	Method Code	Method Used	Please enter all quantities in this section in KGs			Please enter all quantities in this section in KGs			
					T (Total)	A (Accidental)	F (Fugitive)	T (Total)	A (Accidental)	F (Fugitive)	
No. Annex 1		C	OTH	LandGEM Model	Emission Point 1	2113.0	0.0	0.0	2113.0	0.0	0.0
01	Methane (CH ₄)	C	OTH	LandGEM Model	Emission Point 1	284528.0	0.0	0.0	284528.0	0.0	0.0
02	Carbon Dioxide (CO ₂)	C	OTH	LandGEM Model	Emission Point 1	284528.0	0.0	0.0	284528.0	0.0	0.0

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

SECTION B - REMAINING PTRR POLLUTANTS											
RELEASES TO AIR											
POLLUTANT	Name	M/G/E	Method Code	Method Used	Please enter all quantities in this section in KGs			Please enter all quantities in this section in KGs			
					T (Total)	A (Accidental)	F (Fugitive)	T (Total)	A (Accidental)	F (Fugitive)	
No. Annex 1		C	OTH	LandGEM Model	Emission Point 1	0.0	0.0	0.0	0.0	0.0	0.0

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

SECTION C - REMAINING POLLUTANT EMISSIONS (As required in your license)											
RELEASES TO AIR											
POLLUTANT	Name	M/G/E	Method Code	Method Used	Please enter all quantities in this section in KGs			Please enter all quantities in this section in KGs			
					T (Total)	A (Accidental)	F (Fugitive)	T (Total)	A (Accidental)	F (Fugitive)	

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

Additional Data Requested from Landfill operators

For the purposes of the National Inventory and Reporting, please provide the following information as requested by providing summary data on landfill gas (methane) for the environment under 'Total' (Total) (Gt/y) for Section A. Sector specific PTRR pollutants above. Operators should only report their Net methane (CH₄) emission for the environment under 'Total' (Total) (Gt/y) for Section A. Sector specific PTRR pollutants above. Please complete the table below:

M/G/E	Method Code	Method Used	Description of Description	Facility Total Capacity m3 per hour
C	MAB	LandGEM Model	N/A	N/A
M	MAB	Site Records	150.0 (Total Flaring Capacity)	0.0 (Total Utilising Capacity)
C	MAB	LandGEM Model	N/A	N/A
Total estimated methane generation (as per site model)				
Methane flared				
Methane utilised				
Net methane emission (as reported in Section A above)				

Releases to Air

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO WATERS

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

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

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS

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

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

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

RELEASES TO WATERS

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

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

Releases to Waters

[Link to previous years emissions data](#)

4.3 RELEASES TO WASTEWATER OR SEWER

SECTION A: PRTR POLLUTANTS OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER

Please enter all quantities in this section in KGs

No. Annex II	POLLUTANT Name	M/C/E	METHOD Method Code	METHOD Method Used Description or Description	QUANTITY		
					T (Total) KG/year	A (Accidental) KG/year	F (Fugitive) KG/year
					0.0	0.0	0.0

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

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence) OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER

Please enter all quantities in this section in KGs

Pollutant No.	POLLUTANT Name	M/C/E	METHOD Method Code	METHOD Method Used Description or Description	QUANTITY		
					T (Total) KG/year	A (Accidental) KG/year	F (Fugitive) KG/year
					0.0	0.0	0.0

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

Releases to Wastewater or Sewer

[Link to previous years emissions data](#)

4.4 RELEASES TO LAND

SECTION A : PRTR POLLUTANTS

POLLUTANT Name	M/C/E	METHOD Method Used Designation or Description	Please enter all quantities in this section in KGs	
			T (Total) KG/Year	A (Accidental) KG/Year
No. Annex II			0.0	0.0

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

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

POLLUTANT Name	M/C/E	METHOD Method Used Designation or Description	Please enter all quantities in this section in KGs	
			T (Total) KG/Year	A (Accidental) KG/Year
Pollutant No.			0.0	0.0

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

Releases to Land

5. ORIGIN, TREATMENT & OFFSITE TRANSFERS OF WASTE

Waste Code	Quantity (Tons) per Year	Description of Waste	Waste Treatment	Location of		Waste Management Authority	Waste Management Facility Name	Waste Management Facility Address	Waste Management Facility Phone	Waste Management Facility E-mail	Waste Management Facility Website
				Origin	Destination						
Within the County 13 02 08	Yes	7.54 asphalt, stone, soil and lubricating oil	R9	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 18 01 01	No	107.78 sawdust and cardboard shavings	R5	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 18 01 02	No	0.8 plastic packaging	R4	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 18 01 03	No	21.18 metal packaging	R8	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 18 01 04	No	2.34 metal packaging	R13	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 18 01 07	No	4.8 metal packaging	R13	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 18 02 07	No	86.52 glass packaging	R9	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 18 02 04	Yes	0.2 liquid hazardous inorganic/organic	R1	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 18 06 01	Yes	1.3 lead batteries	R0	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 17 01 07	No	880.24 oil	R5	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 17 02 02	No	23.18 petroleum products other than oil	R5	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 18 02 03	No	27.18 oil	R12	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 01 01	No	1507.1 paper and cardboard	R5	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 01 02	No	42.08 saws	R5	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 01 11	No	15.78 metals	R5	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 01 29	No	183.28 metal packaging	R2	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 01 38	No	627.52 wood other than that manufactured in 20 01 37	R3	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 01 40	No	197.02 metals	R4	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 02 01	No	846.49 biohazardous waste	R3	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 03 01	No	1545.14 mixed municipal waste	D1	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 03 07	No	832.62 bulky waste	R5	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 01 36	No	207.11, 01 11, 20 01 35 and 20 01 38	R4	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste
Within the County 20 01 34	No	1.3 batteries other than 20 01 33	R6	M	Washed	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste	ENVA Chromium Industrial Waste

Source: Countywide waste tracking by Department of Public Works for the year 2013.

Treatment & Transfers of Waste

List the address where waste was sent to treatment or transfer facility.

Please enter details below then click the OK button

Name of Recoverer / Disposer / Next Destination Facility	Greenstar Limited
Licence / Permit No. of Recoverer / Disposer / Next Destination Facility	WL 136-2; CKWMC 20/04
Address of Recoverer / Disposer / Next Destination Facility	Address 1 / Street name Sarsfield Court
Address 2 / Building number	Glanmire
Address 3 / City name	Co. Cork
Address 4 / Postcode	Cork
Country	Ireland

Please enter a full stop "." in an address field if there is no data to be entered

Alternatively, please select from previously entered details by clicking on the row below then click OK

Name and License / Permit No.	Address of Recoverer / Disposer / Broker
ENVA ,IPC 472 WMC 16/01	ENVA ,Clonminam Industrial Estate ,Portlaoise,...,Ireland
Greenstar Limited,WL 136-2; CKW Sarsfield Court	Glanmire ,Co. Cork ,Cork,Ireland
Green Dragon Recycling,CK3 46/0	Corbally North ,Glanmire ,Cork,...,Ireland
Mr. Binman,W0061-01	Kilmallock ,Co. ,Limerick,...,Ireland
KMK Metals ,W0133-03	Cappincur Industrial Estate ,Daingean Road ,Tullamore ,Co. Offaly,Ireland
Youghal Landfill ,W0068-03	Youghal Landfill ,Youghal Mudiands,Youghal ,Co. Cork ,Ireland
Gypsum Recycling Ireland Ltd ,W0	Gypsum Recycling Ireland Ltd ,First Floor ,Millennium House ,Main Street Tullamore Co. Offaly ,Ireland
Carrigtwohill wastewater treatment	Carrigtwohill ,Co Cork,...,Ireland
MSM Recycling ,W0079-01	41 Cookstown Industrial Estate ,Tallaght ,Co. Dublin,...,Ireland
Textile Recycling Ltd. ,Charity no nt	Glen Abbey Complex ,Belgard Road ,Tallaght ,Dublin 24 ,Ireland
CTO Environmental Solutions ,W00	CTO Environmental Solutions ,Kinsale Road Landfill ,Kinsale Road ,Cork,Ireland
Pouladuff Dismantlers,WMP 08/01	Forge Hill ,Cork,...,Ireland
Youghal Landfill ,W0068-03	Youghal Landfill ,Youghal Mudiands,Youghal ,Co. Cork ,Ireland

Please enter details below then click the OK button

Name of Final Recoverer / Disposer	KMK Metals
License / Permit No. of Final Recoverer / Disposer	W0133-03
Address of Final Recoverer / Disposer	
Address 1 / Street name	Cappincur Industrial Estate
Address 2 / Building number	Daingean Road
Address 3 / City name	Tullamore
Address 4 / Postcode	Co. Offaly
Country	Ireland
Address of Actual Recovery / Disposal Site	
Address 1 / Street name	Cappincur Industrial Estate
Address 2 / Building number	Daingean Road
Address 3 / City name	Tullamore
Address 4 / Postcode	Co. Offaly
Country	Ireland

Please enter a full stop "." in an address field if there is no data to be entered

Alternatively, please select from previously entered details by clicking on the row below then click OK

Name and License / Permit No.	Address of Final Recoverer / Disposer	Address of Actual Recovery / Disposal Site
ENVA ,W0184-01	ENVA ,Clonminam Industrial Estate ,Portlaoise, ,Ireland	ENVA ,Clonminam Industrial Estate ,Portlaoise, ,Ireland
KMK Metals ,W0133-03	Cappincur Industrial Estate ,Daingean Road ,Tullamore ,Co. Offaly	Cappincur Industrial Estate ,Daingean Road ,Tullamore ,Co. Offaly ,Ireland

Waste Details 2

Previous years data is correct as at 08/03/2013 12:46

Release_To	Year	Pollutant_Number	Pollutant_Description	M_C_E	Method_Code	Method_Description	Total
Air	2011	1	Methane (CH4)	C	OTH	LandGEM model	27474
Air	2011	3	Carbon dioxide (CO2)	C	OTH	LandGEM model	284526
Air	2011	900	Total estimated methane generation	C	MAB	LandGEM model	103699
Air	2011	901	Methane flared	M	MAB	Site records	76225
Air	2011	903	Net methane emission	C	MAB	LandGEM model	27474

Previous Years Emissions

Previous years data is correct as at 08/03/2013 12:46

Year	Destination	EWC	Hazardous	Total	Description	Treatment/Operation	U.C.E.	Method/Code	Treatment Location	Name/Address/Permit No	Address	Final Address/Permit No	Actual Address/Final Destination
2011	Within the Country	15 02 06	Y	6	Synthetic engine oil and lubricating oils	R2	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	15 01 01	N	207.2	Empty metal and plastic packaging	R5	M	Weighted	Office in Ireland	Green Dragon Recycling CIC 46/03 CDMWC 18/03	Green Dragon Recycling CIC 46/03 CDMWC 18/03, Carrifinch Hill, Co. Wick, Ireland	Green Dragon Recycling CIC 46/03 CDMWC 18/03	Green Dragon Recycling CIC 46/03 CDMWC 18/03
2011	Within the Country	15 01 02	N	4.02	Plastic packaging	R5	M	Weighted	Office in Ireland	Green Dragon Recycling CIC 46/03 CDMWC 18/03	Green Dragon Recycling CIC 46/03 CDMWC 18/03, Carrifinch Hill, Co. Wick, Ireland	Green Dragon Recycling CIC 46/03 CDMWC 18/03	Green Dragon Recycling CIC 46/03 CDMWC 18/03
2011	Within the Country	15 01 04	N	3	Metallic packaging	R13	M	Weighted	Office in Ireland	Green Dragon Recycling CIC 46/03 CDMWC 18/03	Green Dragon Recycling CIC 46/03 CDMWC 18/03, Carrifinch Hill, Co. Wick, Ireland	Green Dragon Recycling CIC 46/03 CDMWC 18/03	Green Dragon Recycling CIC 46/03 CDMWC 18/03
2011	Within the Country	15 01 04	N	6	Metallic packaging	R5	M	Weighted	Office in Ireland	Green Dragon Recycling CIC 46/03 CDMWC 18/03	Green Dragon Recycling CIC 46/03 CDMWC 18/03, Carrifinch Hill, Co. Wick, Ireland	Green Dragon Recycling CIC 46/03 CDMWC 18/03	Green Dragon Recycling CIC 46/03 CDMWC 18/03
2011	Within the Country	15 01 07	N	79	Plastic packaging	R5	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	16 05 04	Y	0.1	Empty containers including drums containing dangerous substances	R1	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	16 05 04	Y	1.33	Lead batteries	R6	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	17 05 01	Y	888.86	Mixture of concrete, silica, tiles and bricks	R5	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	17 05 07	N	46.12	Empty metal and plastic packaging other than that mentioned in 17 08 02	R5	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	18 02 03	N	201.2	Empty metal and plastic packaging other than that mentioned in 17 08 02	R17	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	20 01 01	N	140	Paper and cardboard	R5	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	20 01 02	N	84	Glass	R5	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	20 01 11	N	21	Textiles, paper, adhesives and resins other than those mentioned in 20 01 27	R5	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	20 07 28	N	21.84	Waste mentioned in 20 01 27	R2	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	20 04 38	N	533	Wood other than that mentioned in 20 01 37	R5	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	20 04 40	N	181	Metal	R5	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	20 02 01	N	826	Biodegradable waste	R3	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	20 02 01	N	855	Mixed municipal waste	D1	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate
2011	Within the Country	20 03 01	N	771.65	Bulky waste	R5	M	Weighted	Office in Ireland	ENVA IPC 472 WMC 16/01	ENVA, Abnhaman Industrial Estate, Carrifinch Hill, Co. Wick, Ireland	ENVA, Abnhaman Industrial Estate	ENVA, Abnhaman Industrial Estate

Previous years data is correct as at 08/03/2013 12:46

Type of Waste	Previous Year Total	Current Year Total	Percentage Change
Hazardous Waste inside the country for disposal	0	0	0
Hazardous Waste inside the country for recovery	7.63	8.34	9.305373526
Hazardous Waste outside the country for disposal	0	0	0
Hazardous Waste outside the country for recovery	0	0	0
Non-Hazardous Waste for disposal	865	1045.14	20.82543353
Non-Hazardous Waste for recovery	3936.55	4147.08	5.348083982

Previous Years Waste Stats