

Monaghan County Council
Scotch Corner Landfill



Scotch Corner Landfill

1st January 2012 – 31st December 2012

Annual Environmental Report

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1. INTRODUCTION

On 7th December 2001 the EPA granted a waste licence, W0020-01, subject to conditions to Monaghan County Council for its facility at Scotch Corner Landfill. This licence is for the operation and development of an existing non-hazardous landfill at Scotch Corner, Letterbane, Annyalla, Castleblaney, Co. Monaghan and also covers the operation of a Material Recovery Facility at the site. The Material Recovery Facility allows for the storage and processing of pre-segregated recyclable wastes.

This licence was reviewed by the Agency and a new licence, W0020-02 was issued on the 24th March 2010.

Condition 11.7 of Waste Licence W0020-02 states the following:

11.7 *Annual Environmental Report*

11.7.1 The licensee shall submit to the Agency, by the 31st March each year an AER covering the previous calendar year. This report, which shall to the satisfaction of the Agency, shall include as a minimum the information specified in Schedule G: Annual Environmental Report of this Licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.

The AER shall include as a minimum the information specified in Schedule G: Content of the Annual Environment Report of this licence and shall be prepared in accordance with any relevant written guidance issued by the Agency.

This Annual Environmental Report will include the following:

- Reporting Period.
- Waste activities carried out at the facility.
- Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year.
- Calculated remaining capacity of the facility and year in which final capacity is expected to be reached.
- Methods of deposition and recovery of waste.
- Summary report on emissions.
- Summary of results and interpretation of environmental monitoring.
- Resource and energy consumption summary.
- Proposed development of the facility and timescale of such development (including plant operating capacity at the MRF, provision of adequate standby and provision of contingency, backup and spares in the case of breakdown)
- Capacity and provision of contingency, backup and spares in the case of breakdown).
- Volume of leachate produced and volume of leachate transported / discharged off-site.
- Report on development works undertaken during the reporting period, and a timescale for those proposed during the coming year.
- Report on restoration of completed cells/ phases.
- Site survey showing existing levels of the facility at the end of the reporting period.
- Estimated annual and cumulative quantities of landfill gas emitted from the facility.
- Estimated annual and cumulative quantity of indirect emissions to groundwater.
- Annual water balance calculation and interpretation.
- Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year's report.
- Schedule of Environmental Objectives and Targets for the forthcoming year.
- Updates to Landfill Environmental Management Plan (LEMP)
- Review of Environmental Liabilities
- Report on waste recovery
- Full title and a written summary of any procedures developed by the licensee in the year which relates to the facility operation.

- Tank, pipeline and bund testing and inspection report.
- Reported incidents and Complaints summaries.
- Review of Nuisance Controls.
- Reports on financial provision made under this licence, management and staffing structure of the facility, and a programme for public information.
- Report on training of staff.
- Statement of compliance of facility with any updates of the relevant Waste Management Plan.
- Statement on the achievement of the waste acceptance and treatment obligations.
- Any other items specified by the Agency.

2. **REFERENCES**

Waste Licence W0020-02.

Waste Licence Application Form – Monaghan County Council 25th February 1998.

EPA Landfill Manuals – Landfill Operational Practises.

E.I.S. for Scotch Corner Landfill Site Monaghan – MCOS.

Scotch Corner Landfill 2012 Groundwater, Surface Water and Leachate Monitoring Reports.

Scotch Corner Landfill 2012 Noise Monitoring Report.

Scotch Corner Landfill 2012 Landfill Gas Monitoring Reports.

Scotch Corner Landfill 2012 Dust Monitoring Reports.

Pestproof Service Reports.

Rock Bird Control Service Reports.

Environmental Management System at Scotch Corner Landfill Rev.00.

Monaghan County Council Scotch Corner Landfill One Year Phasing Report – Phase 3 Rev 1 October 2007 by RPS and Monaghan County Council Scotch Corner Landfill Commencement Cell 4b Specified Engineering Works: Addendum 2 March 2010 by RPS.

Scotch Corner Landfill 1st January 2012– 31st December 2011 Annual Environmental Report.

Scotch Corner Landfill 2012 AER Returns Workbook.

Scotch Corner Landfill 2012 EPA Landfill Gas Survey.

Scotch Corner Landfill 2012 Biodegradable Municipal Waste Reporting Landfill Submission Report.

National Waste Report 2012 Survey.

North East Region Waste Management Plan 2005 – 2010.

Focus on Landfilling in Ireland – EPA.

3. **CONTENT OF ANNUAL ENVIRONMENTAL REPORT**

3.1 **Reporting Period**

This report covers the period 1st January 2012 to 31st December 2012.

3.2 **Waste activities carried out at the facility**

Scotch Corner Landfill is licensed to accept household waste, commercial waste, non-hazardous industrial waste and construction and demolition waste.

Wastes that will not be accepted at the landfill facility include the following:

- Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) and shredded tyres.
- Liquid Wastes
- Sludges
- Hazardous Wastes as defined by the European Waste Catalogue and Hazardous Waste List
- Unsorted Waste

Scotch Corner Landfill is closed to the public and accepts the above waste types from licensed hauliers only. All other persons must present their waste for disposal at the Material Recovery Facility (MRF). The MRF accepts the following clean, dry, segregated recyclables from householders and industrial and commercial sectors: paper, newspaper, cardboard, glass, timber, rubble, aluminium and steel cans, plastic, textiles/clothes, footwear, white goods, scrap metal, electrical goods (except printers), waste oil, used cooking oil, fluorescent tubes, batteries, gas cylinders, tyres, polystyrene, plasterboard, paint cans and green waste. The MRF also accepts mixed skips of recyclables from householders and kerbside collection of recyclables from waste hauliers.

Scotch Corner Landfill is licensed to accept and deposit the following waste types in lined cells as per Schedule A of the Waste Licence:

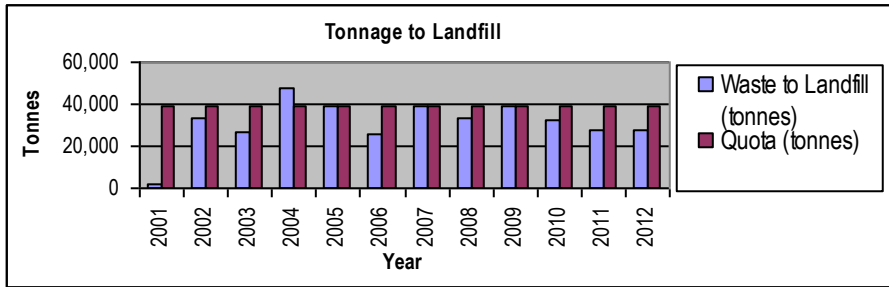
| Waste Type | Maximum Tonnes Per Annum |
|-----------------------------|--------------------------|
| Household | 18,200 |
| Commercial | 5,700 |
| Construction and Demolition | 2,800 |
| Industrial Non-Hazardous | 12,800 |
| TOTAL | 39,500 |

3.3 Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year

(A) Waste Disposal

Table 1: Types and Quantities of waste disposed to landfill from 07/12/01 – 31/12/12.

| Year | Household EWC 20 03 01 20 03 07 | Commercial EWC 20 03 01 20 03 02 19 12 12 | Industrial EWC 20 03 01 19 12 04 07 01 99 02 03 04 | Mixed Municipal Waste EWC 20 03 01 | Sewage Sludge EWC 19 08 05 | Industrial Sludge EWC 02 05 02 | Construction & Demolition EWC 17 09 04 | Street Cleanings EWC 20 03 03 | TOTAL (tonnes) |
|-------|---------------------------------------|--|--|---------------------------------------|-------------------------------|-----------------------------------|---|----------------------------------|----------------|
| 2001 | 908.52 | 121.89 | 562.75 | | 238.72 | 15.90 | 0 | 13.11 | 1,861 |
| 2002 | 15,103.3 | 3,736.66 | 8,390.4 | | 4,703.44 | 622.77 | 277.32 | 397.39 | 33,231 |
| 2003 | 11,895.14 | 2,047.01 | 6,833.30 | | 4,921.88 | 662.85 | 239.29 | 414.65 | 27,014 |
| 2004 | 19,096.03 | 3,757.94 | 16,210.71 | | 5,473.12 | 560.91 | 345.56 | 2,487.23 | 47,932 |
| 2005 | 20,111.51 | 2,981.29 | 8,085.37 | | 5,681.26 | 1020.06 | 214.28 | 729.77 | 38,824 |
| 2006 | 13,770.61 | 1,305.71 | 7,280.73 | | 1,232.70 | 169.60 | 291.48 | 1,693.69 | 25,745 |
| 2007 | 12,559.82 | 2,689.06 | 10,888.38 | 12,528.14 | 0 | 0 | 49.44 | 792.75 | 39,508 |
| 2008 | 12,976.48 | 1,972.74 | 7,121.10 | 10,137.14 | 0 | 0 | 40.9 | 706.38 | 32,955 |
| 2009 | 9,228.92 | 612.22 | 4,737.98 | 23,492.30 | 0 | 0 | 93.28 | 668.16 | 38,833 |
| 2010 | 18,689 | 9,140 | 3,717 | | 0 | 0 | 5 | 671 | 32,222 |
| 2011 | 7,326.62 | 681.30 | 5,070.06 | 13,587.82 | 0 | 0 | 0 | 701.90 | 27,368 |
| 2012 | 4,837.86 | 6,911.16 | 1,799.00 | 13,755 | 0 | 0 | 0 | 771.00 | 28,075 |
| Quota | 18,200 | 5,700 | 12,800 | | 0 | 0 | 2,800 | | 39,500 |



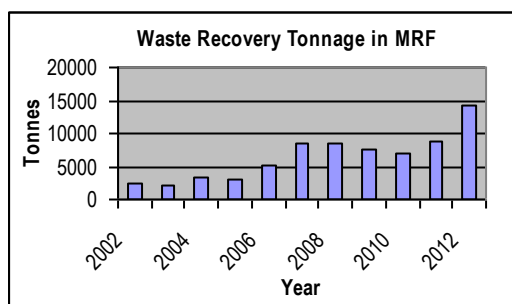
(B) Waste Recovery

Table 2: Waste Recovery Table for Scotch Corner Recycling Centre 01/01/12 – 31/12/12

| Load Type | EWC Code | Tonnes |
|----------------------------|----------|-----------------|
| Lead Batteries | 16 06 01 | 4.41 |
| Household Batteries | 16 06 02 | 1.23 |
| C & D waste | 17 09 04 | 1836.92 |
| Textiles | 20 01 11 | 13.38 |
| Glass | 15 01 07 | 211.12 |
| Brown Bin Organic Waste | 20 02 01 | 396.18 |
| Fluorescent lights & Bulbs | 20 01 21 | 0.37 |
| Newspaper and Magazines | 20 01 01 | 163.44 |
| Scrap metal | 20 01 40 | 192.49 |
| Timber/Woodchip | 20 01 38 | 647.50 |
| Cooking Oil | 20 01 25 | 0.22 |
| Waste oil | 13 02 08 | 1.58 |
| Metallic Packaging | 15 01 04 | 29.44 |
| Cardboard | 15 01 01 | 1835.08 |
| Mixed Paper | 20 01 01 | 292.08 |
| CRT's | 20 01 35 | 64.04 |
| LDA's | 20 01 36 | 9.57 |
| LDA's cold | 20 01 36 | 22.08 |
| SDA's | 20 01 36 | 36.13 |
| Mixed Dry Recyclables | 20 03 01 | 2362.3 |
| Plasterboard | 17 08 02 | 12.28 |
| Polystrene | 15 01 02 | 0.43 |
| Tyres | 16 01 03 | 9.74 |
| Hard Plastic Packaging | 17 02 03 | 71.66 |
| Plastic Bottles | 15 01 02 | 48.54 |
| Hard Plastic Non-Packaging | 17 02 03 | 0.81 |
| Waste Paint | 20 01 27 | 0.46 |
| Aerosol cans | 16 05 04 | 0.33 |
| Plastic Packaging | 15 01 02 | 190.57 |
| Green Waste | 20 02 01 | 110.3 |
| Mixed Residual Waste | 20 03 01 | 5816.18 |
| Total | | 14380.86 |

Table 3: Waste Recovery Table for Scotch Corner Recycling Centre 2001 – 2012

| Year | Tonnes |
|-----------------|----------|
| Dec 2001 & 2002 | 2,435.88 |
| 2003 | 2,067.32 |
| 2004 | 3,382.10 |
| 2005 | 1,749.69 |
| 2006 | 5280.5 |
| 2007 | 8531.999 |
| 2008 | 8460.12 |
| 2009 | 7683.77 |
| 2010 | 6999.56 |
| 2011 | 8674.42 |
| 2012 | 14380.86 |



3.4 Calculated Remaining Capacity of the Facility and year in which Final Capacity is expected to be reached

Monaghan County Council estimates that the remaining capacity on site is 50,000-60,000T with a lifespan of approximately 2 years.

3.5 Methods of Deposition and Recovery of Waste

All waste in 2012 was deposited to landfill into Cell 4c of Phase 3. Waste was compacted using a compactor and/or hymax and/or dozer as required.

From 25th April 2005 to date the MRF is operated by McElvaney Waste & Recycling Ltd. During this period 1/1/12 to 31/12/12, source segregated recyclable materials and mixed recyclables from their skip collection service at the MRF are sent to recycling outlets approved by the Agency. Unsorted household recyclable materials collected by kerbside is not sorted at the MRF but are sent directly to approved recycling outlets.

Waste deposited in the compactor at the MRF was landfilled in Cell 4c.

Ref. "SOP 05 Waste Acceptance and Characterisation Procedure at Scotch Corner Landfill"

3.6 Summary Report on Emissions

3.6.1 Dust

Results for all dust monitoring locations were below the Waste Licence dust deposition limit of 350mg/m²/day except as follows:

Results for the second schedule for dust monitoring locations D2 & D3 exceeded the dust deposition limit slightly due to a number of tiny insects in the samples.

Results for the third schedule for dust monitoring location D4 exceeded the Waste Licence dust deposition limit of 350mg/m²/day because of algae growth in the sample.

Data since 2002 shows significant improvements since monitoring commenced in 2002.

Ref. 'Scotch Corner Landfill 2012 Dust Monitoring Report'.

3.6.2 Noise

As per in previous years the noise survey carried out at Scotch Corner Landfill in 2012 indicated that there are no significant noise emissions at the facility.

Results for noise monitoring locations NSL1, NSL 2, D1 and D4 are below the Waste Licence noise emission limits of 45 Night dB(A) L_{AEQ}(30 minutes) and 55 Day dB(A) L_{AEQ}(30 minutes).

Ref. 'Scotch Corner Landfill 2012 Noise Monitoring Report'.

3.6.3 Landfill Gas

Permanent landfill gas extraction and flaring has operated from Area 1 and Area 2 (capped cells since 2004) since 8th December 2005 including this period 1/1/11 to 31/12/11. Landfill gas extraction and flaring has operated from Phase 2 (capped cells since 2010) from vertical extraction wells since 10th December 2007. Landfill gas extraction and flaring has operated from Cell 5a (partially capped cell and temporarily capped cell since 2010) from horizontal extraction pipework since 29th January 2008 and from vertical extraction wells 16th December 2009. Landfill gas extraction and flaring has operated from Cell 4a (temporarily capped cell since 2010) from horizontal extraction pipework since 19th January 2009 and from vertical extraction wells 16th December 2009. Landfill gas extraction and flaring has operated from cell 4b from horizontal extraction pipework since 30th June 2010 and from vertical extraction wells since 27th October 2011. Landfill gas extraction and flaring has operated from cell 4c from horizontal extraction pipework since 28th January 2012 and from one vertical extraction well since 13th September 2012.

Landfill gas produced by the decomposition of waste from Phase 2 (cells 2 & 3) discharged to the atmosphere since waste deposition commenced in this cell on 22/10/03 until 10/12/07 when flaring from this area commenced.

Landfill gas produced by the decomposition of waste from Cell 5a discharged to the atmosphere since waste deposition commenced in this cell on 21/6/07 until 29/1/08 when flaring from this area commenced.

Landfill gas produced by the decomposition of waste from the Cell 4a discharged to the atmosphere since waste deposition commenced in this cell on 23/6/08 until 19/1/09 when flaring from this area commenced.

Landfill gas produced by the decomposition of waste from the Cell 4b discharged to the atmosphere since waste deposition commenced in this cell on 15/3/10 until 30/6/10 when flaring from this area commenced.

Landfill gas produced by the decomposition of waste from the Cell 4c discharged to the atmosphere since waste deposition commenced in this cell on 29/6/11 until 28/1/2012 when flaring from this area commenced.

See also 3.7 Summary of results and interpretation of environmental monitoring and 3.14 Estimated annual and cumulative quantities of landfill gas emitted from the facility.

3.6.4 Leachate

An analysis of surface water and groundwater at the Scotch Corner facility indicates that there is contamination of surface water and groundwater by leachate from the old landfill.

See also 3.7 Summary of results and interpretation of environmental monitoring and 3.10 Volume of leachate produced and volume of leachate transported / discharged off-site and 3.15 Estimated annual and cumulative quantities of indirect emissions to groundwater.

3.7 Summary of results and interpretation of environmental monitoring

3.7.1 Landfill Gas

During 2012, analysis of the inlet the landfill gas flare stack indicates active decomposition of waste since monitoring commenced on 1/3/06.

Analysis of the outlet the landfill gas flare stack was carried out by Odour Monitoring Ireland on 25th June 2012 and 23rd November 2012. All parameters remained below the flare stack emission trigger levels for these dates.

During 2012, analysis of gas in boreholes at the perimeter of the facility (B1a, B2a, B3a, B4a, B5a, B6a and S3) indicate that there is no migration of gas from the current facility i.e. Area 1 (comprising of Cell 1 and the unlined cell to the north of Cell 1), Area 2 (comprising of the unlined cell behind the MRF), Phase 2 (Cells 2 and 3) and Phase 3 (Cells 5a and 4a, 4b & 4c)

Landfill Gas readings for boreholes L7, L8 and L9, located within the body of waste, are typical for waste that is actively decomposing.

Continuous monitoring of landfill gas in the weighbridge office, MRF office and in the MRF canteen indicate that the results are below the Waste Licence trigger levels for landfill gas emission levels of less than or equal to 1.0%v/v methane and less than or equal to 1.5% Carbon Dioxide.

Ref. 'Scotch Corner January to March 2012 Landfill Gas Monitoring Report'

'Scotch Corner Landfill April to June 2012 Landfill Gas Monitoring Report'

'Scotch Corner Landfill July to September 2012 Landfill Gas Monitoring Report'

'Scotch Corner Landfill October to December 2012 Landfill Gas Monitoring Report'

"Air Emission Testing of one landfill Flare located in Scotch Corner Landfill, Letterbane, Annyalla, Castleblaney, Co. Monaghan" performed by Odour Monitoring Ireland on behalf of Monaghan County Council on 25/6/12 & 23/11/12

3.7.2 Noise Monitoring

See 3.6.2 Noise above.

3.7.3 Groundwater Monitoring

Analytical results of groundwater samples taken from private wells within 250m of the facility indicate no contamination from the landfill.

Old G1 was connected to the leachate collection system on 28/5/07. Works to install groundwater interceptor drains around the perimeter of old landfill took place in early 2007 and the discharge from this system was sampled and analysed as new G1 since April 2007.

Further investigations at the old landfill have identified the source of contamination and further remedial works were completed in summer of 2008 to prevent this source of contamination entering this groundwater collection system.

Analysis of groundwater at new G1 represents the quality of groundwater that is discharging from upstream of the old landfill (across the road from the current facility) to a surface water drain at the

western side of Cell 1. When compared to the Department of the Environment's MACs for Salmonid Water Regulations 1988, new G1 continues to show exceedance levels of ammonia which indicates continued contamination by leachate from the old landfill with levels ranging from <0.05mg/l to 65.88g/l in 2012 until this discharge point was blocked on 23/5/2012. Further remedial works upstream of new G1 were completed by Irish Biotech on 19/6/2012 and therefore the discharge at new G1 ceased completely on 19/6/2012.

A flow meter was fitted to new g1 on 10/11/09 and a replacement was fitted on 4/10/10. From 4/1/2012 to 19/6/2012 when the discharge ceased completely, 17,875m³ has discharged from new G1 with an ammonia loading of 391kg.

Groundwater from G2 (discharge of groundwater from under Phase 3 since July 2007) indicates no contamination from the landfill and its quality remains typical of background levels for a boggy area with slight exceedance of the ammonia MAC for Salmonid Water Regulations 1988 noted in July and November 2012.

The leachate interceptor drain has been fully operational around unlined Cell 1 since 04/06/03 and this has eliminated leachate contamination from this unlined cell to Boreholes S3 and RC1.

Analysis of groundwater sampled from S3, RC1, B1, B1a, B2, B2a, B3, B3a, B4, B4a, B6 and B6a show no contamination from the landfill while analysis of groundwater from boreholes B5 and B5a continues to indicate leachate contamination from the old landfill. As per 2009, 2010 and 2011 significant improvement in water quality at B5a was noted in 2012.

Groundwater levels and temperature continued to be monitored in groundwater boreholes RC1, S3, B1, B1a, B2, B2a, B3, B3a, B4, B4a, B5, B5a, B6 and B6a on a quarterly basis during 2012.

Ref. Scotch Corner Landfill January to June 2012 Groundwater, Surface Water and Leachate Monitoring Report.

Scotch Corner Landfill July to December 2012 Groundwater Monitoring Report.

3.7.4 Leachate Monitoring

Results of analysis of leachate in all boreholes on site are typical of leachate from waste that is actively decomposing, with elevated readings of BOD, COD, Ammonia, Chloride and Minerals during this reporting period.

Leachate levels continue to be recorded on a weekly basis in leachate boreholes L5, L7, L8 and L9 from pressure transducer data on the Scada computer located in the landfill manager's office.

Leachate levels in Phase 2 and Phase 3 were also recorded on a weekly basis during 2012 from pressure transducer data on the Scada computer located in the landfill manager's office.

The leachate level in Phase 3 exceeded the 1m threshold in 2012 between 31/12/2011 and 10/1/2012 (Ref. Incident Sheet 02/12).

Ref. Scotch Corner Landfill January to June 2012 Groundwater, Surface Water and Leachate Monitoring Report.

Scotch Corner Landfill July to December 2012 Leachate Monitoring Report.

3.7.5 Surface Water Monitoring

Surface water samples S5, S6 and S7 continue to show contamination from the landfill. This contamination is attenuated with distance from the landfill as seen by analysis data for S7, EPA 155 and EPA 180.

However a significant improvement in water quality at S7 is noted since June 2012 as a result of the blocking of New G1 discharge on 23/5/2012 with the average ammonia level of 8.1mg/l in January to June 2012 decreasing to 3.4mg/l in July to December 2012.

S8 is the surface water sampling point upstream of the landfill and is typical of background surface water quality. Oil Interceptor S9, discharging to the leachate lagoon shows elevated ammonia levels but mineral oil analysis remains below the trigger level.

Ref. Scotch Corner Landfill January to June 2012 Groundwater, Surface Water and Leachate Monitoring Report.

Scotch Corner Landfill July to December 2012 Surface Water Monitoring Report.

3.7.6 Meteorological Monitoring

Met Eireann on behalf of Monaghan County Council recorded the meteorological parameters as per Schedule D.6 of the Waste Licence W0020-02 for its facility at Scotch Corner.

Ref. Scotch Corner Landfill Meteorological Monitoring Report for 2012.

3.7.7 Topographical Survey

This survey completed by QED Engineering in June 2012.

3.7.8 Biological Assessment

This survey was completed by Conservation Services in June 2012 and indicated that water quality remained the same as 2009, 2010 and 2011 levels with S7 remaining at Q2-3 and EPA155 at Q3. Biological monitoring was carried out monitoring location S8 for the first time in 2010 and was classified as moderately polluted (Q2-3). The water quality entering Scotch Corner landfill site at S8 deteriorated in 2011 to seriously polluted (Q2) and remains classified as seriously polluted (Q2) in 2012.

3.7.9 Archaeological Assessment

No archaeological assessment was carried out at the facility in 2012.

3.7.10 Nuisance Monitoring

Nuisance monitoring was carried out at least twice weekly basis by the landfill manager or by the deputy landfill manager or by the acting landfill manager. These site inspections recorded the presence or absence of nuisances caused by litter, vermin, birds, flies, mud, dust and odours at the facility and at its immediate surrounds and the corrective actions to be carried out. Completed 'Site Inspection Forms at Scotch Corner Landfill' are maintained at the Landfill Office.

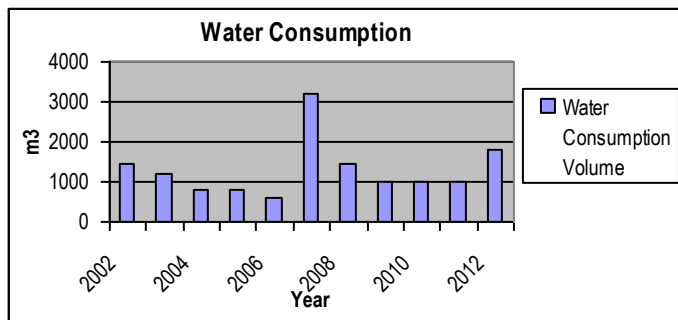
Ref. "SOP 11 Site Inspection Procedure in Environmental Management System at Scotch Corner Landfill

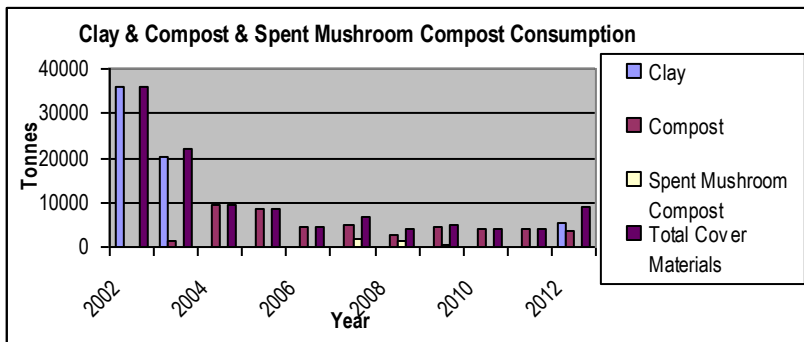
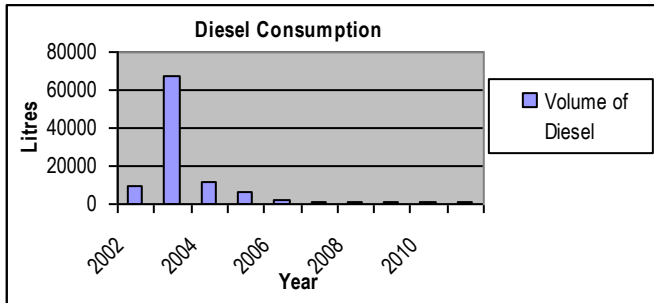
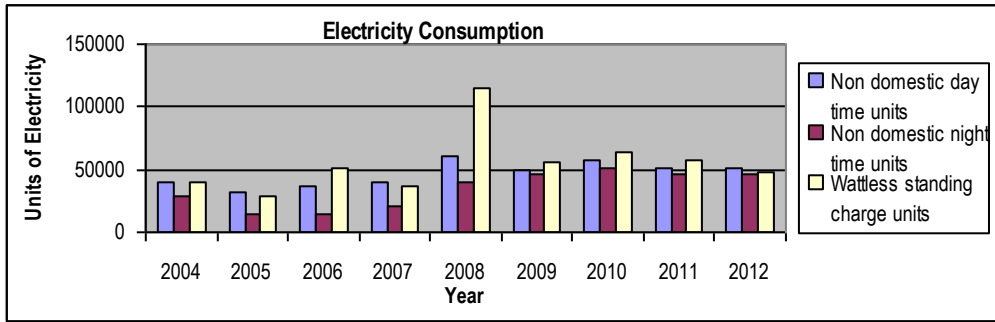
3.8 Resource and energy consumption summary

The following table summaries the consumption on site of water, electricity, diesel, and gravel. Water consumption consisted of usage by the wheel wash facility and domestic purposes. Electricity consumption consisted of usage by the landfill office, leachate pumps, groundwater pumps and the landfill gas flare. Diesel consumption includes the diesel supplied for the jeep and other hired in plant and equipment (e.g. dumper, generator etc). Gravel was required for maintenance of site roads, installation of horizontal gas extraction pipework and vertical gas extraction boreholes and other works on site as they arose (e.g. placement of ducting).

Table 8: Resource and Energy Consumption Table

| Resource/Energy Source | Units consumed |
|------------------------|---|
| Water | 1,785m3 |
| Electricity | Non-domestic day time units 51,588 Non-domestic night time units 45,924 Wattless standing charge units 47,940 |
| Diesel | ~500L |
| Stones/Gravel | 1,028.7 tonnes |
| C&D | 2023.21 tonnes |
| Compost | 3,514.66 tonnes |
| Imported Top Soil | 674.36 tonnes |
| Imported Sub Soil | 4781.98 tonnes |
| Spent Mushroom Compost | 0 tonnes |
| Tarmacadam | 0 tonnes |





3.9 Proposed development of the facility and timescale of such development (including plant operating capacity at the MRF, provision of adequate standby and provision of contingency, backup and spares in the case of breakdown)

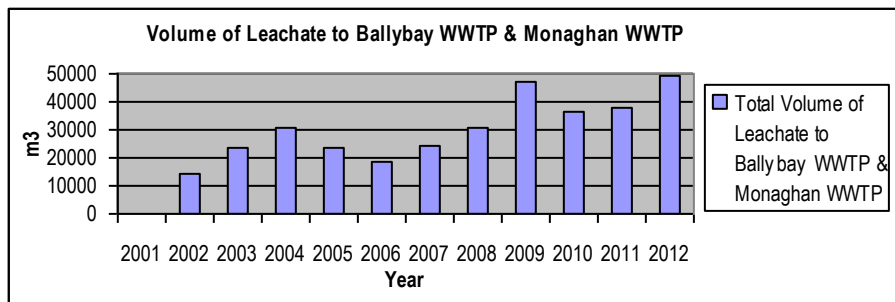
The following are the proposed development works for the year 2013/2014 subject to approval from the Agency, planning permission and/or funding from the Department of the Environment as appropriate:

- Gas infrastructure in Cells 4c and Cell 5b.
- Final and Temporary Capping of Phase 3.
- EIS for construction of wetlands for leachate treatment on old landfill and current facility.
- Construction of wetlands for leachate treatment on old landfill and current facility
- Installation of CHP plant.
- Infrastructure from alternative processing at MRF e.g. MBT, removal of high calorific waste.
- Construction of hard standing area for fire fighter training.

3.10 Volume of leachate produced and volume of leachate transported / discharged off-site

Table 9: Disposal of Leachate from 07/12/12 – 31/12/12

| Year | Total Volume to Monaghan WWTP |
|---------------------|-------------------------------|
| 07/12/01 – 31/12/01 | 81.97 m ³ |
| 2002 | 14,484.68 m ³ |
| 2003 | 23,411.11 m ³ |
| 2004 | 30,841.64 m ³ |
| 2005 | 23,490.46 m ³ |
| 2006 | 18,344.17 m ³ |
| 2007 | 24,313.93 m ³ |
| 2008 | 30,631.02 m ³ |
| 2009 | 47,498.06 m ³ |
| 2010 | 36,149.02 m ³ |
| 2011 | 38,020.37 m ³ |
| 2012 | 49,124.87 m ³ |



3.11 Report on development works undertaken during the reporting period, and a timescale for those proposed during the coming year

The following development works were undertaken during the reporting period 01/01/12 to 31/12/12:

- Installation of horizontal gas infrastructure in Cell 4c and 5b.
- Connection of vertical gas extraction well GE61 to gas collection system and flare.
- Remedial works to Waste Inspection Area & Quarantine Area hard standing surfaces and replacement of drainage gullies & pipework to Waste Inspection Area & Quarantine Area tanks.
- Remedial works to increase the size of the hard standing area for leachate extraction at the leachate lagoon.
- Remedial works to unfilled Cells 5b prior to commencement of filling waste in Cell 5b.
- Remedial works to gas wells in temporary capped area in Phase 2 & Phase 3 (boot legs fitted).
- Replacement of valves on pipework from oil interceptor to S9 discharge point & leachate lagoon.
- Planning permission and Agency approval granted for CHP plant on site.

See also 3.9 Proposed development of the facility and timescale of such development (including plant operating capacity at the MRF, provision of adequate standby and provision of contingency, backup and spares in the case of breakdown) above.

3.12 Report on restoration of completed cells/ phases

No restoration works were carried out in 2012.

3.13 Site survey showing existing levels of the facility at the end of the reporting period

A topographical survey was carried out by QED Engineering in June 2012.

3.14 Estimated annual and cumulative quantities of landfill gas emitted from the facility

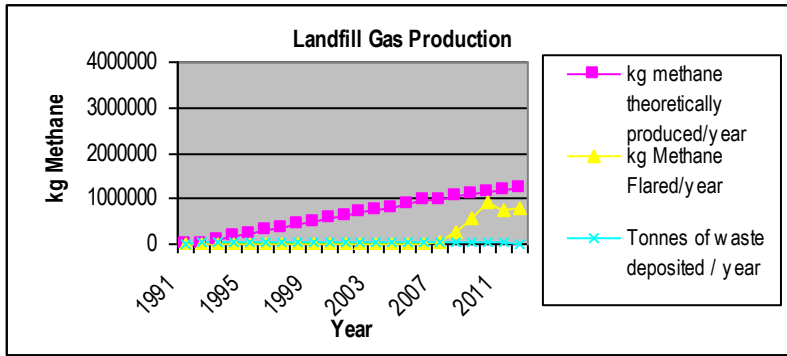
The volume of landfill gas has been estimated as 200m³ of gas per tonne of waste over its life in the Waste Licence Application. This figure assumes that the waste comprises of a 50/50 mix of slowly decomposable and rapidly decomposable material. The rapidly decomposable material is assumed to generate gas for 5 years after placement with peak gas generation for each tonne of waste being 1 year after placement. Gas generation for the slowly decomposable material is assumed to be on going for 15 years after placement with a peak at 5 years after placement.

Using the Landgem program 3.654 x 10⁶ m³ of landfill gas (assumed 50% methane by volume) was theoretically produced in 2012 by waste deposited at Scotch Corner. This is equivalent to 1,219,000kg Methane in 2012. The figure below for waste deposition excludes 13,755T of repatriated waste from Northern Ireland which is classified by the Agency as 0% BMW.

Landfill gas extracted and flared from Area 1, Area 2, Phase 2 and Phase 3 in 2012 was calculated to be 1,174,425m³ CH₄ which is equivalent to 780,475kg.

The follows summaries landfill gas production since the site opened in 1991 using the Landgem Program and EPA Landfill Survey Data for 2008, 2009, 2011 and 2012:

| Year | Tonnes of waste deposited / year | Theoretical kg methane produced /year | Actual kg methane flared /year |
|-------------|---|--|---------------------------------------|
| 1991 | 6750 (estimated) | 0 | 0 |
| 1992 | 28000 (estimated) | 17,690 | 0 |
| 1993 | 28000 (estimated) | 90,390 | 0 |
| 1994 | 28000 (estimated) | 160,200 | 0 |
| 1995 | 28000 (estimated) | 227,300 | 0 |
| 1996 | 28000 (estimated) | 291,800 | 0 |
| 1997 | 32237 (estimated) | 353,800 | 0 |
| 1998 | 30,120.87 | 424,400 | 0 |
| 1999 | 33,882.46 | 486,700 | 0 |
| 2000 | 36,762.53 | 556,400 | 0 |
| 2001 | 33,256.37 | 631,000 | 0 |
| 2002 | 33,231.28 | 693,400 | 0 |
| 2003 | 27,014.12 | 753,300 | 0 |
| 2004 | 47,931.5 | 794,600 | 0 |
| 2005 | 38,823.53 | 889,100 | 0 |
| 2006 | 25,744.52 | 956,000 | 0 |
| 2007 | 39,507.59 | 986,000 | ~59,614 |
| 2008 | 32,954.74 | 1,051,000 | 258,086 |
| 2009 | 38,832.86 | 1,096,000 | 588,747 |
| 2010 | 32,222 | 1,155,000 | 921,191 |
| 2011 | 27,367.7 | 1,194,000 | 762,589 |
| 2012 | 14,320 | 1,219,000 | 780,475 |



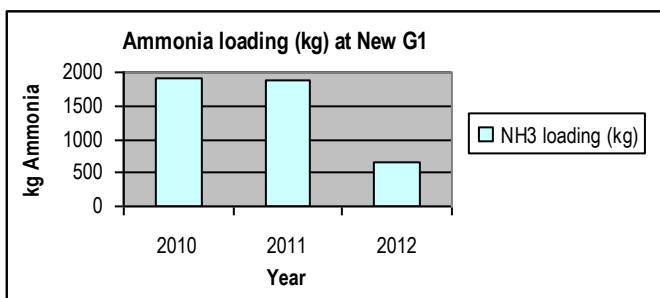
3.15 Estimated annual and cumulative quantities of indirect emissions to groundwater

Waste for disposal at Scotch Corner landfill is placed in lined cells to prevent potential discharge to groundwater. Leachate is pumped from the lined cell to the leachate lagoon and tankered off-site for treatment at Monaghan WWTP.

However, prior to the construction of lined cells on site, the landfill operated on a dilute and disperse principle with leachate collection by gravity in the old leachate lagoon. Consequently leachate from the unlined cells also migrated to groundwater. Leachate interceptor drains have been put in place around unlined cells at the facility to mitigate the risk of leachate contamination of groundwater and capping of unlined cells was completed on 28/7/05.

Despite remediation works that were undertaken at the old landfill, leachate contamination from the old landfill continues to discharge to surface water at new G1. In 2010 46,610m³ discharged from New G1 with an average ammonia concentration of 41mg/L. This equates to ammonia loading of approx. 1911kg of ammonia to this surface water in 2010. In 2011 58,840m³ discharged from New G1 with an average ammonia concentration of 31mg/L. This equates to reduced ammonia loading of approx. 1882kg of ammonia to this surface water in 2011. Before the ceasing of the discharge at New G1 19/6/2012 17,975m³ discharged to surface water with an average ammonia concentration of 37mg/L. This equates to reduced ammonia loading of approx. 665kg of ammonia to this surface water body in 2012

| Date | Volumetric Loading (m3) | Average NH3 (mg/l) | NH ₃ loading (kg) |
|------|-------------------------|--------------------|------------------------------|
| 2010 | 46610 | 41 | 1911 |
| 2011 | 58840 | 32 | 1882 |
| 2012 | 17975 | 37 | 665 |



See also 3.7.3 Groundwater Monitoring.

3.16 Annual water balance calculation and interpretation

The calculation for annual water balance is as follows:

$$Lo = [ER(A) + LW + IRCA + ER(1)] - [aW]$$

Where

- Lo = leachate produced (m³)
- ER = effective rainfall (use actual rainfall (R) for active cells)(m)
- A = area of cell (m²)
- LW = liquid waste (also includes excess water from sludges) (m³)
- IRCA = infiltration through restored and capped areas (m)
- 1 = surface area of lagoons (m²)
- a = absorptive capacity of waste (m³/t)
- W = weight of waste deposited (t/a)

ER = 1.0242m (Total rainfall for 2012 from Met Eireann Data)

A = 17,700m² (~Area of unlined cell 1 & Area of unlined cell behind MRF)
 + 7,800m² (~Area of Cell 1)
 + 20,000m² (~Area of Cell 2 & 3)
 + 8,100m² (~Area of Cell 5a)
 + 4,500m² (~Area of Cell 4a)
 + 4,500m² (~Area of Cell 4b)
 + 4,000m² (~Area of Cell 4c)

LW = 0m³

IRCA = 30% of ER x Area of capped cells
 = (30% of 1.0242) x (7800m² + 17700m² + 14240m² + 8048m²)
 = 0.3073m x 47788 m² = 14685m³

1 = 350m² (~ area of new leachate lagoon)

a = 0.025m³/t

W = 28075 (total weight deposited in landfill in 2012)

ER(A) = 1.0242m x (20000m² + 8100m² + 4500m² + 4500m² + 4000m² - 14240m² - 8048m²)
 = 1.0242m x 18812m²
 = 19267m³

Lo = [ER(A) + LW + IRCA + ER(1)] - [aW]
 = 19267m³ + 0m³ + 14685m³ + (1.0242 x 350m²) - [0.025m³/t x 28075t]
 = [19267m³ + 0m³ + 14685m³ + 358m³] - 702m³
 = 33608m³

Theoretical volume of leachate produced in 2012 = 33608m³.

Actual volume of leachate tankered off site to Monaghan WWTP = 49125m³.

The figure of 49,125m³ of leachate tankered to Monaghan WWTP also includes approximately 11,391m³ of contaminated water from the old landfill (old G1), approximately 5000m³ from S9 (which has been discharging to the leachate lagoon since 20/4/2010 and condensate from the gas collection system (estimated at ~250m³ for 2012). Therefore the actual volume of leachate produced and tankered off site in 2012 was ~32,000m³.

There are a number of unknowns in the calculations of both the theoretical and actual volume of leachate generated on site. These are:

- The water balance formula does not take into account the fact that 17,700m² of the capped area on site are actually unlined cells and that leachate generation is as a result of ingress of groundwater at the base of the cells.
- The volume of condensate generated on site and discharged to the leachate lagoon via 5 knockout pots on site is estimated with the exception of KOP1 which has a flow meter installed. KOP1 discharged 2.54 m³ of condensate to the leachate lagoon in 2012.
- The volume of surface water discharge S9 from the oil interceptor which discharges to the leachate lagoon is estimated.

There it is not possible to compare the theoretical and actual volume of leachate generated on site.

3.17 Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year’s report

The following progress toward achieving the Environment Objectives and targets listed in the 2011 AER was achieved in 2012:

- Implementation of EMS.
- Environmental Liabilities Risk Assessment (ELRA) was carried out in May 2012
- Submission of Scotch Corner Landfill 1st January 2011 – 31st December 2011 Annual Environmental Report in April 2012.
- Provision of Staff training as per training plans in 2012.
- Temporary capping of Cell 4b using soil.
- Reconnection of gas wells and horizontal gas pipework disconnected from the gas extraction pipework and flare in November 2011(Ref. Incident 31/10)
- Installation of horizontal gas collection pipework for the active collection & flaring of landfill gas from Cell 4c and connection to flare.
- Ceasing of the discharge at New G1.
- Implementation of new Waste Licence 20-02.
- On-going implementations of “Scotch Corner Landfill Resource Use and Energy Efficiency Report” dated December 2006 and subsequent Energy Audits.

3.18 Schedule of Environmental Objectives and Targets for the forthcoming year

Table 12: Schedule of Environmental Objectives and Targets for 2013

| Objective | Target | Completion Date |
|--|---|------------------------------------|
| Maintain EMS | Update and implement changes to EMS and continuous implementation of EMS to meet requirements of ISO14001, Audit by Odour Monitoring Ireland, “Energy Map” by SEI and new waste licence W0020-02. | December 2013 |
| Implement new requirements of W002-02 | Carry out a Risk Screening and where necessary a technical assessment in accordance with the “Guidance on the Authorisation of Discharges to Groundwater” published by the EPA | June 2014 |
| Prepare AER | Submit Annual Environmental Report 2013 to the Agency | By 31 st March 2013 |
| Provision of Training | Provide training as per training plans for 2013. | December 2013 |
| Provision of MRF Infrastructure / Reduce waste to landfill | Provision of baled waste storage facility at rear of existing MRF if required. Provision of concrete hardstanding area to facilitate composting if required. | December 2015 December 2015 |

| | | |
|---|--|--|
| | Provision of new infrastructure at MRF for MBT if required. | December 2015 |
| Provision of Landfill Infrastructure | Temporary capping of Cell 4b & Cell 4c Installation of vertical gas extraction boreholes and horizontal gas collection pipework for the active collection & flaring of landfill gas from Cell 4c Further remediation of Old Landfill if required by Agency. Carry out an EIS for Integrated Constructed Wetlands. Obtain Planning Permission and EPA approval for Integrated Constructed Wetlands if EIS process is successful. Construction of Integrated Constructed Wetlands (pending Planning Permission and EPA approval). | May 2013 December 2013 or until cell is full. December 2013 December 2013 December 2014 December 2015 |
| Provision of Restoration & Aftercare | On-going implementation of Restoration and Aftercare Plan. | December 2013 |
| Improve Energy Efficiency & Reduce Resource Use | On-going implementation of "Scotch Corner Landfill Resource Use and Energy Efficiency Report" dated December 2006 and subsequent Energy Audits and "Energy Map" recommendations by SEI. | December 2013 |

3.19 Updates to Landfill Environmental Management Plan (LEMP)

Landfill Environmental Management Plan (LEMP) will be completed by 30th December 2013 and submitted to the Agency for approval.

3.20 Review of Environmental Liabilities

An Environmental Liabilities Risk Assessment was completed by Fehily, Timoney & Company Ltd. in May 2012 and was submitted to the Agency for approval as required by Waste Licence W20-02 Condition 12.3 Environmental Liabilities. Monaghan County Council awaits Agency approval of this document.

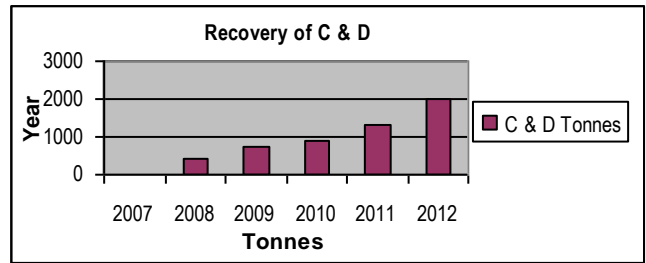
3.21 Report on Waste Recovery

See also 3.3 Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year

3.21.1 The recovery of Construction and Demolition Waste

In 2012 Scotch Corner Landfill reused 2015.45tonnes of C & D waste collected at its MRF for maintenance of entrance pad and tipping area in its active Cell.

| Year | C & D Tonnes |
|------|--------------|
| 2007 | 0 |
| 2008 | 399.62 |
| 2009 | 760.7 |
| 2010 | 877.8 |
| 2011 | 1340.18 |
| 2012 | 2014.45 |



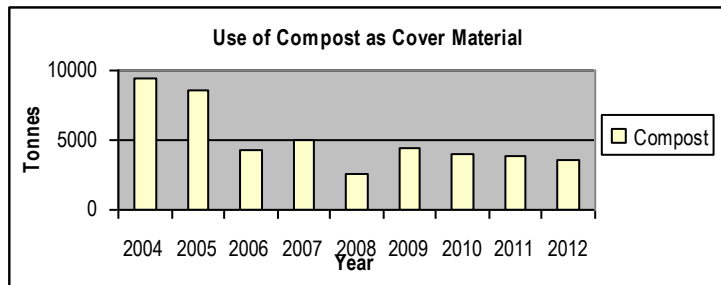
3.21.2 The recovery of energy from other waste at Scotch Corner MRF, by incineration

In 2012 Scotch Corner MRF sent 856.34T of Commercial mixed residual waste (EWC Code 20 03 01) and 4959.84T of Household mixed residual waste (EWC Code 20 03 01) to Indaver’s incinerator at Duleek, Co. Meath for energy recovery.

3.21.3 The recovery of other waste in landfill operation, including restoration

In 2012 Scotch Corner Landfill used 3514.66tonnes of compost from NWP for daily cover material and intermediate cover material.

| Year | Compost |
|------|---------|
| 2004 | 9413.32 |
| 2005 | 8624.64 |
| 2006 | 4292.1 |
| 2007 | 5014 |
| 2008 | 2632.18 |
| 2009 | 4422.98 |
| 2010 | 3990.38 |
| 2011 | 3824.22 |
| 2012 | 3514.66 |



In addition Scotch Corner landfill used on site clay and peat as intermediate cover material.

3.21.4 The recovery of energy through landfill gas combustion

There is no recovery of energy through landfill gas combustion on site at present. However a planning application for the installation of a CHP plant at Scotch Corner landfill was granted by Monaghan County Council and Agency approval received.

3.22 Full Title and a written summary of any procedures developed by the licensee in the year which relates to the facility operation

No procedures were created in 2012.

No procedures were revised in 2012.

The following SOPs are in operation on site:

Title: SOP 01 Document Control and Records
Revision No: Rev.00
Issue Date: 22/10/02
Summary: This procedure outlines how documentation and data relating to the operation of the landfill at Scotch Corner is controlled and how records are maintained to demonstrate compliance with the Waste Licence 20-1. This procedure covers the control of the following documents and the records associated with them:
Waste Licence 20-1; Environmental Management Plan; SOPs; Master Forms.

Title: SOP 02 Procedure for Leachate Management at Scotch Corner Landfill
Revision No: Rev.02
Issue Date: 07/03/02, Revised 29/04/02, Revised 12/04/07
Summary: This procedure details the leachate collection and removal system in operation at Scotch Corner landfill.

Title: SOP 03 Procedure for Operation of Weighbridge at Scotch Corner Landfill
Revision No: Rev.01,
Issue Date: 12/04/07, Revised 22/11/11
Summary: This procedure details the protocol for the weighbridge using Riteweigh software at Scotch Corner landfill.

Title: SOP 04 Emergency Response Procedure
Revision No: Rev.01
Issue Date: 28/08/02, Revised 05/12/02
Summary: This procedure details the Emergency Response Procedure that will be implemented at the facility at Scotch Corner to comply with Condition 9.2 of Waste Licence 20-1. This procedure and SOP 07 Corrective Action Procedure will be followed in the event of an emergency situation arising on site. The Emergency Response Procedure applies, but is not limited to the following incidents: Major Fire / Explosion; Migration of Landfill Gas; Spillage; Serious injury/accident to persons; Equipment Breakdown greater than 24 hours; Any other incident that may pose a significant threat to persons or to the environment.

Title: SOP 05 Waste Acceptance and Characterisation Procedure at Scotch Corner Landfill
Revision No: Rev.02
Issue Date: 29/05/02, Revised 18/10/04 & 22/11/11
Summary: This procedure details the waste acceptance and characterisation operations in place at Scotch Corner landfill to comply with Condition 5.2 of Waste Licence W0020-02. The procedure is summarized under the following headings:
Waste Acceptance; Waste Rejection; Waste Handling; Waste Characterisation; Sludge Testing.

Title: SOP 06 Communications Programme
Revision No: Rev.00
Issue Date: 20/08/02
Summary: This procedure details the Communications Programme that will be implemented at the facility at Scotch Corner to comply with Condition 2.4.1 of Waste Licence 20-1. The Communications Programme includes newspaper advertisements, web site advertisements, and letters to the elected members and information requests to the Landfill Manager.

Title: SOP 07 Corrective Action Procedure
Revision No: Rev.00

- Issue Date:** 28/08/02
Summary: This procedure details the Corrective Action Procedure that will be implemented at the facility at Scotch Corner to comply with Condition 2.3.2.3 of Waste Licence 20-1. This procedure will be followed in the event of any non-compliance of the Waste Licence that occurs in relation to the operation of the site. This includes incidents, complaints from the public, non-conforming waste loads, etc.
- Title:** SOP 08 Procedure for Operation of Scotch Corner Landfill in Adverse Wind Conditions
Revision No: Rev.00
Issue Date: 04/10/02
Summary: This procedure details the programme that operates at Scotch Corner landfill in adverse wind condition resulting in either complete closure, limited closure or complete closure.
- Title:** SOP 09 Procedure for Acceptance and Handling of Sludge at Scotch Corner Landfill
Revision No: Rev.01
Issue Date: 09/10/02, Revised 18/10/04
Summary: This procedure details the operations for accepting and handling sludges (sewage sludge and industrial non-hazardous sludges) at Scotch Corner landfill including restricted acceptance hours and deep burial of sludge on site to minimize nuisance by odours from sludges on site.
- Title:** SOP 10 Awareness and Training Programme
Revision No: Rev.00
Issue Date: 22/10/02
Summary: This procedure details the Awareness and Training Programme that has implemented at the facility at Scotch Corner to comply with Condition 2.3.2.4 of Waste Licence 20-1. The purpose of this programme is to outline how training needs are identified, carried out and documented for all staff whose work is related to the operation of Scotch Corner Landfill by means of training plans and training records.
- Title:** SOP 11 Site Inspection Procedure
Revision No: Rev.00
Issue Date: 03/12/02
Summary: This procedure details the protocol for performing a site inspection at Scotch Corner to comply with Condition 8.14 of Waste Licence W0020-01 and completion of Site Inspection Forms at Scotch Corner Landfill.
- Title:** SOP 12 Sampling Procedure
Revision No: Rev.00
Issue Date: 04/12/02
Summary: This procedure details the frequency and protocol for sampling and analysis of groundwater, well water, surface water, leachate, and dust and landfill gas at Scotch Corner to comply with Condition 8.1 of Waste Licence W0020-01.
- Title:** SOP 16 Wheel Wash Facility Procedure
Revision No: Rev.00
Issue Date: 05/12/02
Summary: This procedure details the protocol for operation and maintenance of the wheel wash facility in operation at Scotch Corner since 21/10/2002.

Title: SOP 17 Procedure for Landfill Gas Management at Scotch Corner Landfill
Revision No: Rev.01
Issue Date: 13/06/2007, Revised 21/09/2009
Summary: This procedure details the landfill gas analysis and balancing protocol for efficient landfill gas flare operation at Scotch Corner landfill.

3.23 Tank, pipeline and bund testing and inspection report

An Electrical leak location survey was carried out on Cell 5b by Metlab in December 2012 prior to Agency approval of waste deposition in this cell on 14/1/2013.

Integrity surveys were carried out on the Waste Inspection Tank, the Waste Quarantine Tank and the asphalt lined Waste Inspection and Quarantine Area by Metlab in December 2012 following completion remedial works.

All passed the survey requirements and reports were forwarded to the Agency in December 2012.

3.24 Reported Incidents and Complaints Summaries

3.24.1 Incidents

Incident 02/12 records an exceedance in the waste license W0020-02 trigger levels for leachate in Phase 3 at Scotch Corner Landfill.

Incident No. 09/12, 26/12, 28/12, 30/12, 33/12, 34/12, 35/12 and 38/12 record shutdowns of the landfill gas flare.

Incident 25/12 records exceedance of MAC (Salmonid Regulations for surface water and Drinking Water Regulations for groundwater) for ammonia, copper, fluoride, sulphate, chromium, iron, manganese and lead Ref. Groundwater and Surface Water monitoring at Scotch Corner Landfill.

Incident No. 01/12, 03/12, 04/12, 05/12, 06/12, 07/12, 08/12, 10/12, 11/12, 12/12, 13/12, 14/12, 15/12, 16/12, 17/12, 18/12, 19/12, 20/12, 21/12, 22/12, 23/12, 24/12, 27/12, 29/12, 31/12, 32/12, 36/12, 37/12 and 39/12 record deliveries of diesel washings to Scotch Corner landfill.

3.24.2 Complaints

Complaint 01/11: Relates to a complaint from a local resident about flies around their house.

3.25 Review of Nuisance Controls

3.25.1 Litter

The erection and maintenance of 5m high anti-litter netting has been very successfully in controlling wind blown litter within the active face. Holes in netting are repaired and landfill operatives collect any litter that escapes from the tipping area. Compaction, daily cover with compost or clay and

intermediate covering of the waste with compost or clay will continue as to prevent nuisance by litter at the facility.

3.25.2 Vermin

During 2012 rodent control duties were carried out by Pestproof. From inspection of the bait boxes on site, Pestproof has noted sporadic low levels of infestation from mice and to a lesser extent rat infestation at varying times of the year. Satisfactory rodent control was provided by Pestproof during the reporting period.

3.25.3 Birds

Bird control at Scotch Corner landfill is an integrated approach of keeping the tipping face as small as possible, compacting the waste, daily covering with compost or clay and intermediate covering of the waste with compost or clay and deployment of visual deterrents and use of acoustic deterrents. To compliment bird control management by landfill operatives, Monaghan County Council also contract the services of Rock Bird Control on site. Satisfactory bird control was provided by Rock Bird Control during the reporting period.

3.25.4 Flies

Fly control at Scotch Corner landfill is also an integrated approach of keeping the tipping face as small as possible, compaction of the waste, and covering the tip head daily with compost or clay and intermediate covering of the waste with compost or clay. The above measures proved to be very successful in preventing nuisance by flies in 2012. The spraying of insecticide was carried out as required.

3.25.5 Mud

The installation of the wheel wash facility at Scotch Corner Landfill has been successful as it has virtually eliminated mud as a nuisance at the facility. Additional measures in place to prevent nuisance by mud are the regular maintenance of site roads and regular cleaning of the site entrance and the weighbridge.

3.25.6 Dust

Nuisance by dust was not a problem at the facility during the reporting period due to compaction of the waste and spraying of site roads with water when necessary.

3.25.7 Odour

Nuisance by odour was addressed during the reporting period by an integrated approach that involved keeping the tipping face as small as possible, compacting the waste, daily covering with compost and or clay, intermediate covering with compost and clay, capping of completed cells, installation of both horizontal gas extraction pipework and vertical gas extraction boreholes in the active cell from commencement of waste deposition and operation of permanent flare on a continuous basis.

3.26 Reports on financial provision made under this licence, management and staffing structure of the facility, and a programme for public information

3.26.1 Report on financial provision made under this licence

From the period January to December 2012, Monaghan County Council paid €22,200.26 to the Agency in Wexford for Waste Licence monitoring for this reporting period.

The operating cost of the landfill was €1,317,210 for 2012. This included a loan repayment of €537,450.

Income from the deposition of waste at Scotch Corner was €1,048,013 for 2012.

Monaghan County Council completed and submitted the workbook as required by the Agency to comply with the reporting obligations under Section 53A of the Waste management Act, 1996 (as amended) in May 2012.

3.26.2 Report on management and staffing structure

The management and staffing structure at Scotch Corner Landfill consisted of Executive Senior Engineer, Landfill Manager, Deputy Landfill Manager/Weighbridge Operative, Part-time Weighbridge Operative, Landfill Operative and subcontracted Machine Operatives for this reporting period.

The management and staffing structure at Scotch Corner Recycling Centre at the end of 2012 was employed by McElvaney Waste and Recycling and consisted of Director, General Manager, 2 Operations Managers, 1 Transport manager, 1 Environmental and Quality Manager, 5 Civic Amenity Attendants, 2 Office staff, 2 sales reps and 18 Drivers.

3.26.3 Report on programme for public information

Environmental information relating to the landfill and to the Recycling Centre is on display at the landfill offices and available in the Environment Section of Monaghan County Council. A notice to this effect is on the Monaghan County Council Web site.

3.27 Report on training of staff

Training plans and records were compiled for all staff at the facility including the subcontracted machine operators. Training was been completed as per training plans during the reporting period.

Training completed for this period included the following:

01/12 "Risk Assessment" by Phoenix Safety Ltd.

02/12 "Practical Management of Control of Landfill Gas Training Course" by The Chartered Institute of Waste Management.

03/12 "First Aid Refresher Course" by Civil Defence.

3.28 Statement of Compliance of facility with any updates of the relevant Waste Management Plan

The facility at Scotch Corner is operated under the conditions of Waste Licence W0020-02 and is in compliance with the “North East Region Waste Management Plan 2005 – 2010”.

3.29 Statement of the achievement of the waste acceptance and treatment obligations

Scotch Corner Landfill has not achieved their waste acceptance and treatment obligation of less than 47% BMW in the first 3 quarters but achieved their waste acceptance and treatment obligation of less than 55% BMW in the last quarter of 2012:

| Date | % BMW | % BMW (Target) |
|-------------------------|--------------|-----------------------|
| January – March 2012 | 52.58% | 47% |
| April – June 2012 | 51.30% | 47% |
| July – September 2012 | 50.40% | 47% |
| October – December 2012 | 50.39% | 55% |

Ref. EPA correspondence W0020-02/gc14rc(bmw limit).docx

3.30 Any Other Items Specified by the Agency,

3.30.1 AER / PRTR Electronic Reporting Workbook 2012

A copy of the 2012 AER / PRTR Electronic Reporting Workbook is contained in Appendix 1.

3.29.2 EPA Landfill Gas Survey 2012

A copy of the Scotch Corner Landfill EPA Landfill Gas Survey 2012 is contained in Appendix 2.

3.29.3 Biodegradable Municipal Waste Reporting 2012

A copy of the Scotch Corner Landfill EPA Biodegradable Municipal Waste Reporting Landfill Submission Reports for 2012 is contained in Appendix 3.

| | | |
|--|--|--------------|
| Report Prepared By: | Report Approved By: | Date: |
| <hr/> Irene Williamson <i>Landfill Manager</i> | <hr/> Eugene Hickey <i>Senior Executive Engineer</i> | <hr/> |

APPENDIX 1

AER / PRTR Electronic Reporting Workbook for 2012



| PRTR# : W0020 | Facility Name : Scotch Corner Landfill | Filename : W0020_2012 PRTR.xls | Return Year : 2012 |

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.16

| | |
|-----------------------|------|
| REFERENCE YEAR | 2012 |
|-----------------------|------|

1. FACILITY IDENTIFICATION

| | |
|----------------------------|-------------------------|
| Parent Company Name | Monaghan County Council |
| Facility Name | Scotch Corner Landfill |
| PRTR Identification Number | W0020 |
| Licence Number | W0020-02 |

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. |
| 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. |
| 3.5 | Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment. |
| 4.1 | Solvent reclamation or regeneration. |
| 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. |
| 4.8 | Oil re-refining or other re-uses of oil. |

| | |
|--|---|
| Address 1 | Letterbane |
| Address 2 | Annyalla |
| Address 3 | Castleblaney |
| Address 4 | Co. Monaghan |
| | Monaghan |
| Country | Ireland |
| Coordinates of Location | -7.32431 54.0181 |
| River Basin District | GBNIIENB |
| NACE Code | 3821 |
| Main Economic Activity | Treatment and disposal of non-hazardous waste |
| AER Returns Contact Name | Irene Williamson |
| AER Returns Contact Email Address | iwilliam@monaghancoco.ie |
| AER Returns Contact Position | Landfill Manager |

| | |
|--|------------|
| AER Returns Contact Telephone Number | 04780930 |
| AER Returns Contact Mobile Phone Number | 0876991844 |
| AER Returns Contact Fax Number | 04780930 |
| Production Volume | 0.0 |
| Production Volume Units | |
| Number of Installations | 0 |
| Number of Operating Hours in Year | 0 |
| Number of Employees | 4 |
| 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 |
| 5(d) | Landfills |
| 50.1 | General |

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

| | |
|---|----|
| Is it applicable? | No |
| Have you been granted an exemption ? | |
| 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) ? | |
|--|--|

4.1 RELEASES TO AIR [Link to previous years emissions data](#)

PRTR# : W0020 | Facility Name : Scotch Corner Landfill | File name : W0020_2012 PRTR.xls | Return Year : 2012 |

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

| No. Annex I | POLLUTANT | Name | M/C/E | Method Code | METHOD Description of Description | Please enter all quantities in this section in KGs | | |
|-------------|--|------|-------|-------------|--|--|-------------------|--|
| | | | | | | Old Stock of Filler Emission Point 1 | T (Total) KG/Year | QUANTITY A (Accidental) KG/Year F (Fugitive) KG/Year |
| 01 | Methane (CH ₄) | | C | OTH | Calculated using "hardened" theoretical landfill gas production model and landfill gas survey 2012 | 0.0 | 438526.0 | 0.0 438526.0 |
| 03 | Carbon dioxide (CO ₂) | | E | OTH | Calculated using "hardened" theoretical landfill gas production model and actual flow data from flare and in house quantification data | 0.0 | 1822206.0 | 0.0 1822206.0 |
| 02 | Carbon monoxide (CO) | | M | OTH | Calculated using actual flow meter data from flare and analysis data by Ochor Monitoring Ireland | 3.8 | 3.8 | 0.0 0.0 |
| 08 | Nitrogen oxide (NO _x /NO ₂) | | M | OTH | Calculated using actual flow meter data from flare and analysis data by Ochor Monitoring Ireland | 141.55 | 141.55 | 0.0 0.0 |
| 11 | Sulphur oxides (SO _x /SO ₂) | | M | OTH | Calculated using actual flow meter data from flare and analysis data by Ochor Monitoring Ireland | 267.03 | 267.03 | 0.0 0.0 |

SECTION B : REMAINING PRTR POLLUTANTS

| No. Annex II | POLLUTANT | Name | M/C/E | Method Code | METHOD Description of Description | Please enter all quantities in this section in KGs | | |
|--------------|-----------|------|-------|-------------|--------------------------------------|--|-------------------|--|
| | | | | | | Emission Point 1 | T (Total) KG/Year | QUANTITY A (Accidental) KG/Year F (Fugitive) KG/Year |
| | | | | | | 0.0 | 0.0 | 0.0 0.0 |

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

| Pollutant No. | POLLUTANT | Name | M/C/E | Method Code | METHOD Description of Description | Please enter all quantities in this section in KGs | | |
|---------------|-----------|------|-------|-------------|--------------------------------------|--|-------------------|--|
| | | | | | | Emission Point 1 | T (Total) KG/Year | QUANTITY A (Accidental) KG/Year F (Fugitive) KG/Year |
| | | | | | | 0.0 | 0.0 | 0.0 0.0 |

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilized on their facilities to accompany the figure for total methane generated. Operators should only report their Methane (CH₄) emission to the environment under (V) and (W) for Section A, Sector specific PRTR pollutants above. Please complete the data below:

| Landfill: Please enter summary data on the quantities of methane flared and/or utilized | Method Used | | Facility Total Capacity m ³ per hour |
|--|-------------|-------------|--|
| | M/C/E | Method Code | |
| Total estimated methane generation (as per site model) Methane flared Methane utilized in engines Net methane emission (as reported in Section A above) | C | OTH | N/A |
| | M | OTH | 1000.0 (Total Flaring Capacity) |
| Scotch Corner Landfill | C | OTH | N/A |
| | M | OTH | 0.0 (Total Utilising Capacity) |
| | | | 438526.0 |

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

PRTR#: W0020 | Facility Name : Scotch Corner Landfill | Filename : W0020_2012 PRTR.xls | Return Year : 2012 |

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO WATERS

Date on ambient monitoring of storm/effluent water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER/PRTR Reporting as this only Please enter all quantities in this section in KGs

| No. Annex II | POLLUTANT | Name | M/C/E | | Emission Point 1 | QUANTITY | | |
|--------------|-----------|------|-------------|----------------------------|------------------|-------------------|------------------------|----------------------|
| | | | Method Code | Designation or Description | | 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

Please enter all quantities in this section in KGs

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

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

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

RELEASES TO WATERS

Please enter all quantities in this section in KGs

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

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

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

PRTR#: W0020 | Facility Name: South Corner Landfill | Filename: W0020_2012 PRTR.xls | Rev

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SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER

| No. Annex It | POLLUTANT Name | M/C/E Method Code | METHOD | | Please enter all quantities in this section in Kgs | | | | |
|--------------|----------------|-------------------|-------------|----------------------------|--|-------------------|------------------------|----------------------|-----|
| | | | Method Used | Designation or Description | Emission Point 1 | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year | |
| | | | | | | 0.0 | 0.0 | 0.0 | 0.0 |

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

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

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER

| Pollutant No. | POLLUTANT Name | M/C/E Method Code | METHOD | | Please enter all quantities in this section in Kgs | | | | |
|---------------|----------------|-------------------|-------------|----------------------------|--|-------------------|------------------------|----------------------|-----|
| | | | Method Used | Designation or Description | Emission Point 1 | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year | |
| | | | | | | 0.0 | 0.0 | 0.0 | 0.0 |

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

[Link to previous years emissions data](#)

4.4 RELEASES TO LAND

[Link to previous years emissions data](#)

| PRT# : W0020 | Facility Name : Scotch Corner Landfill | Filename : W0020_2012 PRTs.xls | Return Year : 2012 |

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SECTION A : PRT POLLUTANTS

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

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

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

Please enter all quantities on this sheet in Tonnes

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| Transfer Destination | European Waste Code | Hazardous | Quantity (Tonnes per Year) | Description of Waste | Waste Treatment Operation | Method Used | | Location of Treatment | Hazard Waste Name and Licence/Permit No of Next Recipient | Hazard Waste Name and Licence/Permit No of Next Recipient | Name and Licence/Permit No and Address of Final Receiver/Disposer (UK/EU/US WASTE ONLY) | Actual Address of Final Destination (UK/EU/US WASTE ONLY) |
|----------------------|---------------------|-----------|----------------------------|------------------------------|---------------------------|-------------|-------------|-----------------------|--|--|---|---|
| | | | | | | M/C/E | Method Used | | | | | |
| Within the County | 13 02 06 | Yes | 1.58 | Engine oil | R9 | M | Weighted | Offsite in Ireland | Enva Ireland Ltd., WO-184-02 | Portlaoise Co. Laois, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 15 01 01 | No | 1835.08 | Cardboard | R3 | M | Weighted | Offsite in Ireland | Irish Packaging Recycling WPR 021-2 | Ballymount Road, Dublin 12, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 17 02 03 | No | 3.44 | Hard Plastic (Packaging) | R3 | M | Weighted | Offsite in Ireland | RCC Recycling Solutions WFP-LS-11-0001-01 | Ballymacken Industrial Estate, Ballymacken, Co. Laois, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 15 01 02 | No | 48.54 | Plastic bottles | R3 | M | Weighted | Offsite in Ireland | Shabra Recycling Ltd., WFP-1N-09-0022-01 | Killycand Industrial Estate, Bee, Castletaney, Co. Monaghan, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 15 01 02 | No | 0.43 | Polystyrene | R13 | M | Weighted | Offsite in Ireland | Shabra Recycling Ltd., WFP-1N-09-0022-01 | Killycand Industrial Estate, Bee, Castletaney, Co. Monaghan, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 15 01 02 | No | 14.92 | Plastic Packaging (Film) | R3 | M | Weighted | Offsite in Ireland | RCC Recycling Solutions WFP-LS-11-0001-01 | Ballymacken Industrial Estate, Ballymacken, Co. Laois, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 15 01 02 | No | 75.65 | Plastic Packaging (Film) | R3 | M | Weighted | Offsite in Ireland | Lainster Environmental W/P2009/06 | Park, Haggardstown, Dundalk Co. Louth, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 15 01 04 | No | 29.44 | Metallic packaging | R4 | M | Weighted | Offsite in Ireland | Sternginn Recycling WML | 81 Killyclopher Road, Ormagh Co. Tyrone, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 15 01 07 | No | 170.18 | Commercial glass bottles | R5 | M | Weighted | Offsite in Ireland | Glassdon Recycling WML | Road, Toomebridge Co. Antrim, BT14 3SE, United Kingdom | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 15 01 07 | No | 40.94 | Household glass bottles | R5 | M | Weighted | Offsite in Ireland | Glassco Recycling Limited (Renold Recycling) WFP-KE-08-0357-01 | Unit 4 Caberstown Business Park, Carragh Road, Kears, Co. Kildare, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 16 01 03 | No | 9.74 | Tyres | R3 | M | Weighted | Offsite in Ireland | Duffy Tyre Recycling Ltd., WFP-PL-01/0-01 16-01 | Tonyhabroc, Next to Cummin gnan., Co. Donegal, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 16 05 04 | Yes | 0.33 | Aerosol Cans | R12 | M | Weighted | Offsite in Ireland | Enva Ireland Ltd., WO-184-02 | Portlaoise Co. Laois, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 16 08 01 | Yes | 4.41 | Lead acid batteries | R12 | M | Weighted | Offsite in Ireland | Wilton Waste Recycling WFP-CN_10-0005 | Kilfe., Ballymashuffr. Co. Caran, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 16 08 02 | Yes | 1.23 | Household batteries | R13 | M | Weighted | Offsite in Ireland | ERP Ireland Compliance | Avenue, Rathfriland, Dublin 14, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 17 02 03 | No | 48.9 | Hard Plastic (Packaging) | R3 | M | Weighted | Offsite in Ireland | Lainster Environmental W/P2009/06 | Park, Haggardstown, Dundalk Co. Louth, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |
| Within the County | 17 02 03 | No | 0.81 | hard plastic (non-packaging) | R3 | M | Weighted | Offsite in Ireland | Lainster Environmental W/P2009/06 | Park, Haggardstown, Dundalk Co. Louth, Ireland | Enva Ireland Ltd., WO-184-02, Portlaoise Co. Laois, Ireland | Portlaoise Co. Laois, Ireland |

| Transfer Destination | European Waste Code | Hazardous | Quantity (Tonnes per Year) | Description of Waste | Waste Treatment Operation | Method Used | | Location of Treatment | H2O Waste Name and Licence/Permit No. of Next Destination Facility (H2O Waste Name and Licence/Permit No. of Receptor/Disposer) | H2O Waste Address of Next Destination Facility (H2O Waste Address of Receptor/Disposer) | Name and License/Permit No. and Address of Final Receiver/Disposer (HAZARDOUS WASTE ONLY) | Actual Address of Final Destination (HAZARDOUS WASTE ONLY) |
|----------------------|---------------------|-----------|----------------------------|--|---------------------------|-------------|-------------|-----------------------|---|---|---|--|
| | | | | | | M/CE | Method Used | | | | | |
| Within the Country | 17 08 02 | No | 12.28 | Plasterboard | R5 | M | Weighted | Offsite in Ireland | Wilton Waste Recycling WFR-CN_10-0005 Kifra, Ballymasstuliff Co. Caran, Ireland | | | |
| Within the Country | 17 09 04 | No | 1609.2 | C&D Waste | R10 | M | Weighted | Offsite in Ireland | Scotch Corner Landfill, W0020-02 | Lethbridge Annville, Castleberry, Co. Monaghan, Ireland | | |
| Within the Country | 19 07 03 | No | 49124.87 | landfill leachate other than those mentioned in 19 07 02 | D8 | M | Weighted | Offsite in Ireland | Monaghan Waste Water Treatment Plant, D0081-01 | Trillickan, Monaghan, Ireland | | |
| Within the Country | 20 01 01 | No | 239.04 | Mixed paper | R3 | M | Weighted | Offsite in Ireland | Irish Packaging Recycling WFR 021-2 | Ballymount Road, Dublin 12, Ireland | | |
| Within the Country | 20 01 01 | No | 53.04 | Mixed paper | R3 | M | Weighted | Offsite in Ireland | ROC Recycling Solutions WFR-LS-11-0001- | Ballymacken Industrial Estate, Ballymacken, Co. Laois, Ireland | | |
| Within the Country | 20 01 01 | No | 163.44 | News and Pams | R3 | M | Weighted | Offsite in Ireland | Irish Packaging Recycling WFR 021-2 | Ballymount Road, Dublin 12, Ireland | | |
| Within the Country | 17 02 03 | No | 19.32 | Hard Plastic (Packaging) | R3 | M | Weighted | Offsite in Ireland | Re-Gen Waste Ltd., WML 22/25 and LNV10/50M | Drive Cambane Industrial Estate, Newry, Co. Down, BT35 6UD, United Kingdom | | |
| Within the Country | 20 01 11 | No | 13.38 | Clothes | R12 | M | Weighted | Offsite in Ireland | Textile Recycling Ltd., WFR 014 | Belgard Road, Tallaght, Co. Dublin, Ireland | | |
| Within the Country | 20 01 21 | Yes | 0.37 | Fluorescent tubes | R4 | M | Weighted | Offsite in Ireland | KMK Metals Recycling Ltd., W0173-03 | Capprincur Industrial Estate, Dangean Road, Tulamore, Co. Offaly, Ireland | | |
| Within the Country | 20 01 25 | No | 0.22 | Cooking oil | R9 | M | Weighted | Offsite in Ireland | Enva Pure, LNV1/163 | Swords, Co. Dublin, Ireland | | |
| Within the Country | 20 01 27 | Yes | 0.46 | Paints | R2 | M | Weighted | Offsite in Ireland | Enva Ireland Ltd., WO-194 | Portlaise, Co. Laois, Ireland | | |
| Within the Country | 20 01 35 | Yes | 64.04 | CRT's | R4 | M | Weighted | Offsite in Ireland | The Recycling Village, WFR2007-20 | Tenure Business Park, Monastereboice Co. Louth, Ireland | | |
| To Other Countries | 20 01 36 | No | 9.57 | LDA's | R4 | M | Weighted | Abroad | European Metal Recycling Ltd., 40041/40099/40110 | South Carriston, West Midlands, WS10 8LW, United Kingdom | | |
| To Other Countries | 20 01 36 | No | 22.08 | LDA's cold | R4 | M | Weighted | Abroad | European Metal Recycling Ltd., 40041/40099/40110 | South Carriston, West Midlands, WS10 8LW, United Kingdom | | |
| To Other Countries | 20 01 36 | No | 36.13 | SDA's | R4 | M | Weighted | Abroad | European Metal Recycling Ltd., 50447/101767 | Dock, Boole, Liverpool Merseyside, L20 1BX, United Kingdom | | |
| To Other Countries | 20 01 38 | No | 647.5 | Woodchip | R10 | M | Weighted | Offsite in Ireland | Local Farmers and School, Irish Packaging Recycling WFR 021-2 |, Ireland | | |
| Within the Country | 17 09 04 | No | 227.72 | Mixed construction and demolition wastes (commercial) | R3 | M | Weighted | Offsite in Ireland | Irish Packaging Recycling WFR 021-2 | Ballymount Road, Dublin 12, Ireland | | |
| Within the Country | 20 01 40 | No | 192.49 | Metals | R4 | M | Weighted | Offsite in Ireland | T-Met, WML 03/13 and LNV1/104 | 84 Armath Road, Moy Dungannon Co. Tyrone BT71 7JA, Ireland | | |

| Transfer Destination | European Waste Code | Hazardous | Quantity (Tonnes per Year) | Description of Waste | Waste Treatment Operation | Method Used | | Location of Treatment | Haz Waste - Name and Licence/Permit No of Next Haz Waste Name and Licence/Permit No of Recover/Disposer | Haz Waste - Address of Next Destination Facility (Haz Waste Address of Recover/Disposer) | Name and License / Permit No and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY) | Actual Address of Final Destination (HAZARDOUS WASTE ONLY) |
|----------------------|---------------------|-----------|----------------------------|-----------------------------------|---------------------------|-------------|-------------|-----------------------|--|--|---|--|
| | | | | | | M/C/E | Method Used | | | | | |
| Within the Country | 20 02 01 | No | 29.28 | Garden Waste | R3 | M | Weighed | Offsite in Ireland | Thomtons Recycling W0195- abnham Wood Co. Meath, Ireland. Kilmaham Wood | Compost, Ballynainrgan, Kim Meath, Ireland. Kilmaham Wood | | |
| Within the Country | 20 02 01 | No | 396.18 | Brown Bin Organic Waste | R3 | M | Weighed | Offsite in Ireland | Thomtons Recycling W0195- abnham Wood Co. Meath, Ireland. Tullvhattra, Castlebarney, C o Monaghan, Ireland | Compost, Ballynainrgan, Kim Meath, Ireland. Tullvhattra, Castlebarney, C o Monaghan, Ireland | | |
| Within the Country | 20 02 01 | No | 41.64 | Garden waste | R3 | M | Weighed | Offsite in Ireland | Wilton Waste Recycling, WFP-CX_10-0005 Kfha, Ballyjamesduff Co. Cavan, Ireland | Wilton Waste Recycling, WFP-CX_10-0005 Kfha, Ballyjamesduff Co. Cavan, Ireland | | |
| Within the Country | 20 02 01 | No | 39.2 | Garden waste | R3 | M | Weighed | Offsite in Ireland | Scotch Corner Landfill W0020-02 Indaver, Ireland Ltd. W0167 Carrinstown, Duleek Co. Meath, Ireland | Scotch Corner Landfill W0020-02 Indaver, Ireland Ltd. W0167 Carrinstown, Duleek Co. Meath, Ireland | | |
| Within the Country | 20 03 01 | No | 892.14 | Mixed residual waste (Household) | D5 | M | Weighed | Offsite in Ireland | Scotch Corner Landfill W0020-02 Carrinstown, Duleek Co. Meath, Ireland | Scotch Corner Landfill W0020-02 Carrinstown, Duleek Co. Meath, Ireland | | |
| Within the Country | 20 03 01 | No | 856.34 | Mixed residual waste (Commercial) | D10 | M | Weighed | Offsite in Ireland | Indaver, Ireland Ltd. W0167 Carrinstown, Duleek Co. Meath, Ireland | Indaver, Ireland Ltd. W0167 Carrinstown, Duleek Co. Meath, Ireland | | |
| Within the Country | 20 03 01 | No | 4959.84 | Mixed residual waste (Household) | D10 | M | Weighed | Offsite in Ireland | Scotch Corner Landfill W0020-02 Carrinstown, Duleek Co. Meath, Ireland | Scotch Corner Landfill W0020-02 Carrinstown, Duleek Co. Meath, Ireland | | |
| Within the Country | 20 03 01 | No | 4427.96 | Mixed Residual Waste (Commercial) | D5 | M | Weighed | Offsite in Ireland | Scotch Corner Landfill W0020-02 Carrinstown, Duleek Co. Meath, Ireland | Scotch Corner Landfill W0020-02 Carrinstown, Duleek Co. Meath, Ireland | | |
| Within the Country | 20 03 01 | No | 2362.3 | Mixed Dry Recyclables | R12 | M | Weighed | Offsite in Ireland | Shergim Recycling WML 25/01 | Shergim Recycling WML 25/01 | | |

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

Appendix 2

EPA Landfill Gas Survey 2012



A survey of landfill sites to determine the quantity of methane flared and or recovered in utilisation plants for 2012

Please choose from the drop down menu the license number for your site
 Please choose from the drop down menu the name of the landfill site
 Please enter the number of flares operational at your site in 2012
 Please enter the number of engines operational at your site in 2012

W0020
 Scotch Corner Landfill

1
 0

Total methane flared 780,475 kg/year
 Total methane utilised in engines 0 kg/year

Please note that the closing date for receipt of completed surveys is 31/03/2013

Introduction

The Office of Climate Licensing and Resource Use (OCLR) of the Environmental Protection Agency acts as the inventory agency in Ireland with responsibility for compiling and reporting national greenhouse gas inventories to the European Commission and the United Nations Framework Convention on Climate Change. In addition to meeting international commitments Ireland's national greenhouse gas inventory informs national agencies and Government departments as they face the challenge to curb emissions and meet Ireland's targets under the Kyoto Protocol. The national inventory also informs data suppliers, making them aware of the importance of their contributions to the inventory process and a means of identifying areas where input data may be improved.

It is on this basis that the Environmental Protection Agency is asking landfill operators to partake in this survey so that the most up-to-date information on methane flaring and recovery in utilisation plants at landfills sites is used in calculating the contribution of the waste sector to national greenhouse gas emissions

The Environmental Protection Agency wishes to thank you for partaking in this survey. If you have any questions about the survey and how to complete it please view the "Help sheet" worksheet. If however, your query is not answered by viewing the "Help sheet" worksheet please contact:

LFGProtect@epa.ie

Once completed please send the completed file as an attachment clearly stating the name and/or license number of the landfill site (e.g. W000 Xanadu landfill_2012) to:

LFGProtect@epa.ie

to be filled in by licensee calculated by spreadsheet

Flare No. 1

Flare type ? if "other" enter flare description here

is the flare an open or enclosed flare ? Rated flare capacity ? m³/hr

Month/year commissioned ?

Month decommissioned if decommissioned in 2012 ?

What is the function of the flare ? if "other" enter flare function here

Enclosed

Select

Extraction from capped and uncapped areas

| Monthly | Method | Runtime days/month | Runtime hrs/day | Runtime hrs/month | Downtime hrs | Total runtime hrs/month | Average Inlet Pressure (mbg) | Average Flow Rate (m ³ /hr) | Average CH ₄ %v/v | Average CO ₂ %v/v | Average O ₂ %v/v | Combustion efficiency (%) | Total CH ₄ m ³ | Total CH ₄ kgs |
|--------------|--------|--------------------|-----------------|-------------------|--------------|-------------------------|------------------------------|--|------------------------------|------------------------------|-----------------------------|---------------------------|--------------------------------------|---------------------------|
| January | MCE | 31 | 24.0 | 744 | 21.6 | 722 | -40 | 437 | 38.70 | 31.40 | 1.10 | 98.0 | 119,728 | 79,403 |
| February | MCE | 29 | 24.0 | 696 | 0.0 | 696 | -37 | 385 | 41.70 | 31.50 | 1.10 | 98.0 | 109,505 | 72,846 |
| March | MCE | 31 | 24.0 | 744 | 0.0 | 744 | -37 | 369 | 41.30 | 32.10 | 1.00 | 98.0 | 111,116 | 73,918 |
| April | MCE | 30 | 24.0 | 719 | 0.8 | 719 | -36 | 364 | 41.70 | 32.30 | 1.70 | 98.0 | 106,983 | 71,242 |
| May | MCE | 31 | 24.0 | 744 | 0.0 | 744 | -31 | 303 | 43.30 | 31.80 | 2.10 | 98.0 | 95,660 | 64,028 |
| June | MCE | 30 | 24.0 | 718 | 1.7 | 718 | -30 | 269 | 48.00 | 33.80 | 1.00 | 98.0 | 90,892 | 60,898 |
| July | MCE | 31 | 24.0 | 744 | 0.0 | 744 | -35 | 289 | 47.40 | 34.60 | 1.00 | 98.0 | 99,879 | 66,579 |
| August | MCE | 31 | 24.0 | 737 | 7.1 | 737 | -38 | 299 | 45.40 | 33.40 | 1.00 | 98.0 | 98,031 | 65,147 |
| September | MCE | 30 | 24.0 | 708 | 12.2 | 708 | -42 | 264 | 43.80 | 32.40 | 2.30 | 98.0 | 80,207 | 53,084 |
| October | MCE | 31 | 24.0 | 737 | 6.9 | 737 | -43 | 264 | 47.50 | 33.50 | 1.50 | 98.0 | 90,584 | 59,889 |
| November | MCE | 30 | 24.0 | 656 | 64.2 | 656 | -45 | 259 | 47.90 | 33.60 | 1.70 | 98.0 | 79,732 | 52,606 |
| December | MCE | 31 | 24.0 | 744 | 0.3 | 744 | -44 | 284 | 44.50 | 33.10 | 1.60 | 98.0 | 92,109 | 60,835 |
| Total | | | | | | 8,669 | | | | | | | 1,174,425 | 780,475 |

Please note: Only fill the "Yearly" table if data is not available or cannot be calculated nor estimated on a monthly basis

| Yearly | Method | Runtime days/year | Runtime hrs/day | Total runtime hrs/year | Downtime hrs | Average Inlet Pressure (mbg) | Average Flow Rate m ³ /hr | Average CH ₄ %v/v | Average CO ₂ %v/v | Average O ₂ %v/v | Combustion efficiency (%) | Total CH ₄ m ³ | Total CH ₄ kgs |
|--------|--------|-------------------|-----------------|------------------------|--------------|------------------------------|--------------------------------------|------------------------------|------------------------------|-----------------------------|---------------------------|--------------------------------------|---------------------------|
| 2012 | | | | 0 | | | | | | | 98.0 | 0 | 0 |

Appendix 3

Biodegradable Municipal Waste Reporting 2012

Biodegradable Municipal Waste Reporting Landfill Submission Report

Waste licence number: W0020-02 Scotch Corner Landfill
 Report created on: 05/04/2012 15:18

Submission details

Year: 2012 Quarter: 1
 Reporting period: January - March
 Reference number: R-W0020-2012-1

Site details

License number: W0020-02
 Parent company name: Monaghan County Council
 Facility name: Scotch Corner Landfill
 Facility address: Letterbane, Annyalla, Castleblaney, Co. Monaghan

Contact details of person who made the return

Contact name: D. Fallon Contact position:
 Email address: Telephone number:
 Mobile number: Fax number:

BMW details

Summary for Q1 2012

| Type of MSW | Total Qty MSW | Factor Type | Factor Value | Total Qty BMW | Comment | % BMW |
|---|---------------|----------------------|--------------|---------------|------------------|-------|
| Untreated 1-bin household waste | 1.28 | EPA Approved factor | 0.65 | 0.83 | | 64.84 |
| 2-bin residual household waste | 527.87 | EPA Approved factor | 0.63 | 332.56 | | 63.00 |
| 3-bin residual household waste | 90.56 | EPA Approved factor | 0.47 | 42.56 | | 47.00 |
| 3-bin residual commercial waste | 695.09 | EPA Approved factor | 0.68 | 472.66 | | 68.00 |
| Bulky waste from sorting of MSW skips | 344.28 | EPA Approved factor | 0.50 | 172.14 | | 50 |
| Oversize residues from MSW skips | 1244.1 | EPA Approved factor | 0.43 | 534.96 | | 43.00 |
| Oversize residues from MSW bin collections ("wet waste") | 87.52 | EPA Approved factor | 0.41 | 27.68 | | 41.00 |
| Untreated cleansing waste (fly-tipping, street bins, road sweepings etc.) | 223.68 | EPA Approved factor | 0.65 | 145.39 | | 65.00 |
| Residual MSW from civic amenity facility | 69.38 | EPA Approved factor | 0.63 | 43.71 | | 63.00 |
| Other | 107.56 | Site Specific factor | 0.00 | 0.00 | zero bmw content | 0 |
| | 3371.32 | | | 1772.49 | | 52.58 |

Biodegradable Municipal Waste Reporting Landfill Submission Report

Waste licence number: W0020-02 Scotch Corner Landfill
 Report created on: 06/07/2012 14:45

Submission details

Year: 2012 Quarter: 2
 Reporting period: April - June
 Reference number: R-W0020-2012-2

Site details

License number: W0020-02
 Parent company name: Monaghan County Council
 Facility name: Scotch Corner Landfill
 Facility address: Letterbane, Annyalla, Castleblaney, Co. Monaghan

Contact details of person who made the return

Contact name: D. Fallon Contact position:
 Email address: Telephone number:
 Mobile number: Fax number:

BMW details

Summary for Q2 2012

| Type of MSW | Total Qty MSW | Factor Type | Factor Value | Total Qty BMW | Comment | % BMW |
|---|---------------|----------------------|--------------|---------------|------------------|-------|
| Untreated 1-bin household waste | 3.82 | EPA Approved factor | 0.65 | 2.48 | | 64.92 |
| 2-bin residual household waste | 409.67 | EPA Approved factor | 0.63 | 258.09 | | 63.00 |
| 3-bin residual household waste | 150.15 | EPA Approved factor | 0.47 | 70.57 | | 47.00 |
| 3-bin residual commercial waste | 626.69 | EPA Approved factor | 0.68 | 426.15 | | 68.00 |
| Bulky waste from sorting of MSW skips | 276.41 | EPA Approved factor | 0.50 | 138.20 | | 50.00 |
| Oversize residues from MSW skips | 1386.98 | EPA Approved factor | 0.43 | 596.40 | | 43.00 |
| Untreated cleansing waste (fly-tipping, street bins, road sweepings etc.) | 81.36 | EPA Approved factor | 0.65 | 52.88 | | 65.00 |
| Residual MSW from civic amenity facility | 89.4 | EPA Approved factor | 0.63 | 56.32 | | 63.00 |
| Other | 96.54 | Site Specific factor | 0.00 | 0.00 | zero bmw content | 0 |
| | 3121.02 | | | 1601.09 | | 51.30 |

Cumulative report for year

Biodegradable Municipal Waste Reporting Landfill Submission Report

Waste licence number: W0020-02 Scotch Corner Landfill

Report created on: 11/10/2012 14:46

Submission details

Year: 2012 Quarter: 3

Reporting period: July - September

Reference number: R-W0020-2012-3

Site details

License number: W0020-02

Parent company name: Monaghan County Council

Facility name: Scotch Corner Landfill

Facility address: Letterbane, Annyalla, Castleblaney, Co. Monaghan

Contact details of person who made the return

Contact name: Jim MacEntee Contact position: Dep. Landfill Manager

Email address: landfill@monaghancoco.ie Telephone number: 047 80930

Mobile number: Fax number:

BMW details

Summary for Q3 2012

| Type of MSW | Total Qty MSW | Factor Type | Factor Value | Total Qty BMW | Comment | % BMW |
|---|---------------|----------------------|--------------|---------------|------------------|-------|
| 2-bin residual household waste | 926.58 | EPA Approved factor | 0.63 | 583.75 | | 63.00 |
| 3-bin residual household waste | 36.63 | EPA Approved factor | 0.47 | 17.22 | | 47.01 |
| 2-bin residual commercial waste | 141.64 | EPA Approved factor | 0.75 | 106.23 | | 75 |
| 3-bin residual commercial waste | 269.85 | EPA Approved factor | 0.68 | 183.50 | | 68.00 |
| Bulky waste from sorting of MSW skips | 114.48 | EPA Approved factor | 0.50 | 57.24 | | 50 |
| Oversize residues from MSW skips | 1410.56 | EPA Approved factor | 0.43 | 606.54 | | 43.00 |
| Oversize residues from MSW bin collections ("wet waste") | 445.88 | EPA Approved factor | 0.41 | 182.81 | | 41.00 |
| Residues from source separated recyclable waste ("clean MRF") | 14.74 | EPA Approved factor | 0.47 | 6.93 | | 47.01 |
| Residual MSW from civic amenity facility | 58.9 | EPA Approved factor | 0.63 | 37.11 | | 63.01 |
| Other | 114.98 | Site Specific factor | 0.00 | 0.00 | zero bmw content | 0 |
| | 3534.24 | | | 1781.33 | | 50.40 |

Biodegradable Municipal Waste Reporting Landfill Submission Report

Waste licence number: W0020-02 Scotch Corner Landfill
 Report created on: 10/01/2013 14:21

Submission details

Year: 2012 Quarter: 4
 Reporting period: October - December
 Reference number: R-W0020-2012-4

Site details

License number: W0020-02
 Parent company name: Monaghan County Council
 Facility name: Scotch Corner Landfill
 Facility address: Letterbane, Annyalla, Castleblaney, Co. Monaghan

Contact details of person who made the return

Contact name: Mark T. Johnston Contact position:
 Email address: mjohnston2@monaghancoco.ie Telephone number: 047 30500
 Mobile number: Fax number:

BMW details

Summary for Q4 2012

| Type of MSW | Total Qty MSW | Factor Type | Factor Value | Total Qty BMW | Comment | % BMW |
|---|---------------|----------------------|--------------|---------------|------------------|-------|
| 2-bin residual household waste | 1055.53 | EPA Approved factor | 0.63 | 664.98 | | 63.00 |
| 3-bin residual household waste | 4.31 | EPA Approved factor | 0.47 | 2.03 | | 47.10 |
| 2-bin residual commercial waste | 355.98 | EPA Approved factor | 0.75 | 266.98 | | 75.00 |
| 3-bin residual commercial waste | 148.87 | EPA Approved factor | 0.68 | 101.23 | | 68.00 |
| Bulky waste from sorting of MSW skips | 222.36 | EPA Approved factor | 0.50 | 111.18 | | 50 |
| Oversize residues from MSW skips | 1531.39 | EPA Approved factor | 0.43 | 658.50 | | 43.00 |
| Oversize residues from MSW bin collections ("wet waste") | 692.72 | EPA Approved factor | 0.41 | 284.02 | | 41.00 |
| Residues from source separated recyclable waste ("clean MRF") | 115.58 | EPA Approved factor | 0.47 | 54.32 | | 47.00 |
| Residual MSW from civic amenity facility | 30.9 | EPA Approved factor | 0.63 | 19.47 | | 63.01 |
| Other | 134.12 | Site Specific factor | 0.00 | 0.00 | zero bmw content | 0 |
| | 4291.76 | | | 2162.71 | | 50.39 |