

| Facility Information Summary   |   |
|--|---|
| AER Reporting Year   | 2013  |
| Licence Register Number  | W0059-03  |
| Name of site   | Ballaghaderreen Landfill  |
| Site Location  | Aghalustia Townland, Ballaghaderreen, County Roscommon  |
| NACE Code  | 3821  |
| Class/Classes of Activity  | Treatment and disposal of non-hazardous waste   |
| National Grid Reference (6E, 6 N)  | 163350 292800   |
| A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year <b>and an overview of compliance with your licence listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise.</b> | The landfill site stopped accepting waste for disposal to landfill in July 2010. There were no activities or process at the site during 2013, except for monitoring (as required by the Licence) and the installation of two new pneumatic pumps in the knock out pots due to fire safety issues. During 2013, there were exceedances of the licence limits for carbon dioxide in some of the perimeter boreholes and the groundwater ammoniacal nitrogen GTV and DWS in upgradient borehole BH4/01 and downgradient borehole BH103. Annual flare monitoring and noise monitoring were not carried out in 2013; annual flare emission monitoring will be carried out in April 2014 and noise monitoring has not been carried out since the landfill ceased accepting waste in 2010. |

**Declaration:**

All the data and information presented in this report has been checked and certified as being accurate. The quality of the information is assured to meet licence requirements.

|   |                   |
|---|-------------------|
| <b>John Mockler</b>                                       | <b>28/03/2014</b> |
| Signature   | Date              |
| Group/Facility manager                                    |                   |
| (or nominated, suitably qualified and experienced deputy) |                   |

**AIR-summary template** Lic No: W0059-03 Year 2013

Yes No  
 Answer all questions and complete all tables where relevant

|   |                        |  |
|---|------------------------|--|
| 1 Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If <b>you do not have</b> licenced emissions and <b>do not complete a solvent management plan</b> (table A4 and A5) you <u>do not</u> need to complete the tables | Additional information |  |
|   | Yes                    | For the landfill gas flare and perimeter monitoring boreholes as per Condition 6 of the Licence. |

**Periodic/Non-Continuous Monitoring**

|  |     |   |
|--|-----|---|
| 2 Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below   | Yes | Carbon dioxide in perimeter boreholes.    |
| 3 Was all monitoring carried out in accordance with EPA guidance <a href="#">Basic air monitoring checklist</a> note AG2 and using the basic air monitoring checklist? <span style="float: right;">AGN2</span> | Yes | Flare monitoring not carried out in 2013. |

**Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)**

| Emission reference no:                        | Parameter/ Substance        | Frequency of Monitoring | ELV in licence or any revision thereof                | Licence Compliance criteria | Measured value                       | Unit of measurement | Compliant with licence limit                    | Method of analysis | Annual mass load (kg)                        | Comments -reason for change in % mass load from previous year if applicable   |
|---|-----------------------------|-------------------------|---|-----------------------------|--------------------------------------|---------------------|---|--------------------|--|---|
| Perimeter monitoring boreholes<br>GM201-GM208 | Methane (CH4)               | Monthly                 | 1.0% v/v  | 100 % of values < ELV       | Max 0.0% v/v                         | SELECT              | yes   | SELECT             | 0  | Method of analysis for methane and carbon dioxide in perimeter monitoring boreholes is in accordance with Site Operating Procedure SOP17.   |
| Perimeter monitoring boreholes<br>GM201-GM208 | Carbon dioxide (CO2)        | Monthly                 | 1.5% v/v  | 100 % of values < ELV       | Max 6.1% v/v (GM202, September 2013) | SELECT              | no (if no please enter details in comments box) | SELECT             | Cannot calculate as flow rates not recorded. | Given that there are no corresponding elevated methane levels within the perimeter monitoring boreholes then landfill gas is unlikely to be the source of the carbon dioxide. Elevated carbon dioxide concentrations could occur as a result of decomposition processes within the peat into which the monitoring boreholes are installed. It is recommended that the EPA are consulted on increasing the carbon dioxide trigger levels to 1.5% v/v above the 95th percentile carbon dioxide level for each borehole. |
| Flare Outlet                                  | volumetric flow             | Annually                | -   | SELECT                      | 246                                  | Nm3/hour            | SELECT  | SELECT             | N/A  | Flow monitoring completed on monthly basis - measured value is average from available data.   |
| Flare Outlet                                  | Nitrogen oxides (NOx/NO2)   | Annually                | <150 mg/Nm <sup>3</sup>                               | 100 % of values < ELV       | N/A - see comments                   | SELECT              | SELECT  | SELECT             | N/A - see comments                           | Flare monitoring not completed in 2013.   |
| Flare Outlet                                  | Total Organic Carbon (as C) | Annually                | <10 mg/Nm <sup>3</sup>                                | 100 % of values < ELV       | N/A - see comments                   | SELECT              | SELECT  | SELECT             | N/A - see comments                           | Flare monitoring not completed in 2013.   |
| Flare Outlet                                  | Total acids                 | Annually                | Hydrochloric acid - <50 mg/Nm <sup>3</sup> >0.3 kg/hr | 100 % of values < ELV       | N/A - see comments                   | SELECT              | SELECT  | SELECT             | N/A - see comments                           | Flare monitoring not completed in 2013.   |
| Flare Outlet                                  | Total acids                 | Annually                | Hydrogen fluoride - <5 mg/Nm <sup>3</sup> >0.05 kg/hr | 100 % of values < ELV       | N/A - see comments                   | SELECT              | SELECT  | SELECT             | N/A - see comments                           | Flare monitoring not completed in 2013.   |

Note 1: Volumetric flow shall be included as a reportable parameter

**Continuous Monitoring**

|  |     |   |
|--|-----|---|
| 4 Does your site carry out continuous air emissions monitoring?<br>If yes please review your continuous monitoring data and report the required fields below in Table A2 and | Yes | Continuous carbon monoxide monitoring required from flow outlet in Table D.7 of Licence |
| 5 Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below   | Yes | See Table A2  |
| 6 Do you have a proactive service agreement for each piece of continuous monitoring equipment?   | Yes |   |
| 7 Did your site experience any abatement system bypasses? If yes please detail them in table A3 below  | No  |   |

**Table A2: Summary of average emissions -continuous monitoring**

| Emission reference no: | Parameter/ Substance | ELV in licence or any revision thereof | Averaging Period | Compliance Criteria | Units of measurement | Annual Emission | Annual maximum | Monitoring Equipment downtime (hours) | Number of ELV exceedences in current reporting year | Comments                                |
|------------------------|----------------------|--|------------------|---------------------|----------------------|-----------------|----------------|---------------------------------------|---|---|
| Flare Outlet           | Carbon monoxide (CO) | <50 mg/Nm <sup>3</sup>                 | Daily            | Daily average < ELV | mg/Nm3               | N/A             | N/A            | N/A                                   | N/A   | Flare monitoring not completed in 2013. |
|                        | SELECT               |  |                  |                     | SELECT               |                 |                |                                       |   |   |
|                        | SELECT               |  |                  |                     | SELECT               |                 |                |                                       |   |   |
|                        | SELECT               |  |                  |                     | SELECT               |                 |                |                                       |   |   |
|                        | SELECT               |  |                  |                     | SELECT               |                 |                |                                       |   |   |

note 1: Volumetric flow shall be included as a reportable parameter.

[Bypass protocol](#)

**Table A3: Abatement system bypass reporting table**

| Date* | Duration** (hours) | Location | Reason for bypass | Impact magnitude | Corrective action |
|-------|--------------------|----------|-------------------|------------------|-------------------|
|       |                    |          |                   |                  |                   |
|       |                    |          |                   |                  |                   |
|       |                    |          |                   |                  |                   |
|       |                    |          |                   |                  |                   |
|       |                    |          |                   |                  |                   |
|       |                    |          |                   |                  |                   |
|       |                    |          |                   |                  |                   |
|       |                    |          |                   |                  |                   |

\* this should include all dates that an abatement system bypass occurred

\*\* an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

| Solvent use and management on site   |                                  |   |  |  |                               |  |   |                                       |       |
|--|----------------------------------|---|--|--|-------------------------------|--|---|---------------------------------------|-------|
| 8 Do you have a total Emission Limit Value of direct and fugitive emissions on site? If yes please fill out tables A4 and A5 |                                  |   |  |  |                               | No   |   |                                       |       |
| <b>Table A4: Solvent Management Plan Summary</b>   |                                  |   |  | <a href="#">Solvent regulations</a> Please refer to linked solvent regulations to complete table 5 and 6 |                               |  |   |                                       |       |
| <b>Total VOC Emission limit value</b>  |                                  |   |  |  |                               |  |   |                                       |       |
| Reporting year   | Total solvent input on site (kg) | Total VOC emissions to Air from entire site (direct and fugitive) | Total VOC emissions as %of solvent input | Total Emission Limit Value (ELV) in licence or any revision therof                                       | Compliance                    |  |   |                                       |       |
|  |                                  |   |  |  | SELECT                        |  |   |                                       |       |
|  |                                  |   |  |  | SELECT                        |  |   |                                       |       |
| <b>Table A5: Solvent Mass Balance summary</b>  |                                  |   |  |  |                               |  |   |                                       |       |
|  | (I) Inputs (kg)                  |   | (O) Outputs (kg)                         |  |                               |  |   |                                       |       |
| Solvent  | (I) Inputs (kg)                  | Organic solvent emission in waste gases(kg)                       | Solvents lost in water (kg)              | Collected waste solvent (kg)   | Fugitive Organic Solvent (kg) | Solvent released in other ways e.g. by-passes (kg) | Solvents destroyed onsite through physical reaction e.g. incineration(kg) | Total emission of Solvent to air (kg) |       |
|  |                                  |   |  |  |                               |  |   |                                       |       |
|  |                                  |   |  |  |                               |  |   |                                       |       |
|  |                                  |   |  |  |                               |  |   |                                       |       |
|  |                                  |   |  |  |                               |  |   |                                       | Total |

Additional Information

1 Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If **you do not have** licenced emissions you **only** need to complete table W1 and or W2 for storm water analysis and visual inspections

|     |   |
|-----|---|
| Yes | The lagoon provides buffer storage for leachate pumped from the lined cells, before it is pumped to the public sewer to discharge to Ballaghaderreen STW. |
|-----|---|

2 Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising only any evidence of contamination noted during visual inspections

|     |   |
|-----|---|
| Yes | Table D.5.1 requires weekly visual inspection of surface water. |
|-----|---|

**Table W1 Storm water monitoring**

| Location reference | Location relative to site activities | PRTR Parameter | Licensed Parameter | Monitoring date | ELV or trigger level in licence or any revision thereof* | Licence Compliance criteria | Measured value | Unit of measurement | Compliant with licence | Comments |
|--------------------|--------------------------------------|----------------|--------------------|-----------------|--|-----------------------------|----------------|---------------------|------------------------|----------|
|                    | SELECT                               | SELECT         | SELECT             |                 |  | SELECT                      |                | SELECT              | SELECT                 |          |
|                    | SELECT                               | SELECT         | SELECT             |                 |  | SELECT                      |                | SELECT              | SELECT                 |          |

\*trigger values may be agreed by the Agency outside of licence conditions

**Table W2 Visual inspections-Please only enter details where contamination was observed.**

| Location Reference              | Date of inspection | Description of contamination | Source of contamination | Corrective action | Comments |
|---------------------------------|--------------------|------------------------------|-------------------------|-------------------|----------|
| N/A - no contamination observed | Weekly             |                              | SELECT                  |                   |          |
|                                 |                    |                              | SELECT                  |                   |          |

**Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)**

3 Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below

|        |                        |
|--------|------------------------|
| SELECT | Additional information |
|--------|------------------------|

4 Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box

[External /Internal Lab Quality Assessment of results checklist](#) Yes

**Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)**

| Emission reference no: | Emission released to | Parameter/ Substance <sup>Note 1</sup> | Type of sample | Frequency of monitoring                              | Averaging period | ELV or trigger values in licence or any revision thereof <sup>Note 2</sup> | Licence Compliance criteria                    | Measured value           | Unit of measurement | Compliant with licence | Method of analysis   | Procedural reference source | Procedural reference standard number | Annual mass load (kg) | Comments   |
|------------------------|----------------------|--|----------------|--|------------------|--|--|--------------------------|---------------------|------------------------|----------------------|-----------------------------|--------------------------------------|-----------------------|--|
| LS-1                   | Wastewater/Se wer    | volumetric flow                        | discrete       | Daily  | 24 hour          | N/A  | No flow value shall exceed the specific limit. | Total 21,019 m3 for 2013 | m3/day              | yes                    | INSTRUMENTAL METHODS | Other (please specify)      | Standard Operating Procedure SOP16   | 21019000              |  |
| LS-1                   | Wastewater/Se wer    | Volatile organic compounds (as TOC)    | discrete       | Frequency and method are still to be agreed with EPA |                  | 0.14 mg/l  |  |                          | mg/L                |                        |                      |                             | N/A                                  | N/A                   | This relates to methane, which could not be selected from dropdown box |

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

**Continuous monitoring**

Additional Information

5 Does your site carry out continuous emissions to water/sewer monitoring?

|    |  |
|----|--|
| No | Table D.8.1 in the Licence requires daily flow monitoring and methane monitoring at a frequency 'to be agreed'. We have assumed that daily flow monitoring is not classified as continuous monitoring. |
|----|--|

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

**AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)** Lic No: W0059-03 Year 2013

|   |  |    |     |
|---|--|----|-----|
| 6 | Did continuous monitoring equipment experience downtime? If yes please record downtime in table W4 below | No | N/A |
| 7 | Do you have a proactive service contract for each piece of continuous monitoring equipment on site?      | No | N/A |
| 8 | Did abatement system bypass occur during the reporting year? If yes please complete table W5 below       | No |     |

**Table W4: Summary of average emissions -continuous monitoring**

| Emission reference no: | Emission released to | Parameter/ Substance | ELV or trigger values in licence or any revision thereof | Averaging Period | Compliance Criteria | Units of measurement | Annual Emission for current reporting year (kg) | % change +/- from previous reporting year | Monitoring Equipment downtime (hours) | Number of ELV exceedences in reporting year | Comments |
|------------------------|----------------------|----------------------|--|------------------|---------------------|----------------------|---|---|---------------------------------------|---|----------|
|                        | SELECT               | SELECT               |  | SELECT           | SELECT              | SELECT               |   |   |                                       |   |          |
|                        | SELECT               | SELECT               |  | SELECT           | SELECT              | SELECT               |   |   |                                       |   |          |

note 1: Volumetric flow shall be included as a reportable parameter.

**Table W5: Abatement system bypass reporting table**

| Date | Duration (hours) | Location | Resultant emissions | Reason for bypass | Corrective action* | Was a report submitted to the EPA? | When was this report submitted? |
|------|------------------|----------|---------------------|-------------------|--------------------|------------------------------------|---------------------------------|
|      |                  |          |                     |                   |                    | SELECT                             |                                 |
|      |                  |          |                     |                   |                    |                                    |                                 |

\*Measures taken or proposed to reduce or limit bypass frequency

**Bund testing**

dropdown menu click to see options

Additional information

Are you required by your licence to undertake integrity testing on bunds and containment structures ? If yes please fill out table B1 below listing all **new bunds and containment structures** on site, in addition to **all bunds which failed the integrity test- all bunding structures which failed including mobile bunds must be listed in the table below, please include all bunds outside the licenced testing period** (mobile bunds and chemstore included)

- 1 Please provide integrity testing frequency period
- Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to "Chemstore" type units and mobile bunds)
- 2 How many bunds are on site?
- 3 How many of these bunds have been tested within the required test schedule?
- 4 How many mobile bunds are on site?
- 5 Are the mobile bunds included in the bund test schedule?
- 6 How many of these mobile bunds have been tested within the required test schedule?
- 7 How many sumps on site are included in the integrity test schedule?
- 8 How many of these sumps are integrity tested within the test schedule?

|         |                                 |
|---------|---------------------------------|
| Yes     | Condition 10.4 c) of Licence    |
| 3 years | Condition 3.10.5 of the Licence |
| Yes     |                                 |
| 1       | Leachate lagoon bund            |
| 0       | Due September 2012              |
| 0       |                                 |
| SELECT  | N/A                             |
| N/A     |                                 |
| 0       |                                 |
| N/A     |                                 |

Please list any sump integrity failures in table B1

- 11 Do all sumps and chambers have high level liquid alarms?
- 12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?
- 13 Is the Fire Water Retention Pond included in your integrity test programme?

|     |   |
|-----|---|
| Yes | High level alarms installed in pump sumps and leachate lagoon |
| Yes | In accordance with site Operating Procedures.                 |
| N/A | No fire water retention pond.                                 |

**Table B1: Summary details of bund /containment structure integrity test**

| Bund/Containment structure ID | Type                             | Specify Other type   | Product containment | Actual capacity                | Capacity required*  | Type of integrity test | Other test type | Test date  | Integrity reports maintained on site? | Results of test | Integrity test failure explanation <50 words | Corrective action taken | Scheduled date for retest | Results of retest(if in current reporting year) |
|-------------------------------|----------------------------------|--|---------------------|--------------------------------|---|------------------------|-----------------|------------|---------------------------------------|-----------------|--|-------------------------|---------------------------|---|
| Leachate lagoon bund          | Other (please specify)<br>SELECT | Granular basal support layer, BES layer, HDPE layer, geotextile protection layer and granular layer supported by geoweb on side slopes | Leachate            | Approximately 800 cubic metres | N/A: bund walls form the structure of the lagoon (i.e. it is not a bund containing a tank or similar) | Structural assessment  |                 | 09/09/2009 | Yes                                   | Pass            |  | SELECT                  | Sep-12                    | N/A - see above                                 |
|                               |                                  |  |                     |                                |   | SELECT                 |                 |            | SELECT                                | SELECT          |  | SELECT                  |                           |   |

\* Capacity required should comply with 25% or 110% containment rule as detailed in your licence

Commentary

Has integrity testing been carried out in accordance with licence requirements and are all structures tested in line with B58007/EPA Guidance? [bundling and storage guidelines](#)

16 Are channels/transfer systems to remote containment systems tested?

|     |   |
|-----|---|
| Yes | Lagoon integrity tested every 3 years in accordance with Licence, although now overdue. |
| Yes | Connecting pipework to lagoon was tested following installation in 2003.                |
| Yes | Connecting pipework to lagoon was tested following installation in 2003.                |

17 Are channels/transfer systems compliant in both integrity and available volume?

**Pipeline/underground structure testing**

Are you required by your licence to undertake integrity testing\* on underground structures e.g. pipelines or sumps etc ? If yes please fill out table 2 below listing all underground structures and pipelines on site **which failed the integrity test and all which have not been tested within the integrity test period as specified**

- 2 Please provide integrity testing frequency period
- \*please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)

|                        |                              |
|------------------------|------------------------------|
| No                     | Pipework installed under CQA |
| Other (please specify) | N/A                          |

**Table B2: Summary details of pipeline/underground structures integrity test**

| Structure ID | Type system | Material of construction: | Does this structure have Secondary containment? | Type secondary containment | Type integrity testing | Integrity reports maintained on site? | Results of test | Integrity test failure explanation <50 words | Corrective action taken | Scheduled date for retest | Results of retest(if in current reporting year) |
|--------------|-------------|---------------------------|---|----------------------------|------------------------|---------------------------------------|-----------------|--|-------------------------|---------------------------|---|
|              | SELECT      | SELECT                    | SELECT  | SELECT                     | SELECT                 | SELECT                                | SELECT          |  |                         |                           | SELECT  |
|              |             |                           |   |                            |                        |                                       |                 |  |                         |                           |   |
|              |             |                           |   |                            |                        |                                       |                 |  |                         |                           |   |

Please use commentary for additional details not answered by tables/ questions above

## Groundwater/Soil monitoring template

Lic No:

W0059-03

Year

2013

## Comments

|    |  |     |   |   |
|----|--|-----|---|---|
| 1  | Are you required to carry out groundwater monitoring as part of your licence requirements?   | yes | Schedule D of Licence.  | Please provide an interpretation of groundwater monitoring data in the interpretation box below or if you require additional space please include a groundwater/contaminated land monitoring results interpretation as an additional section in this AER  |
| 2  | Are you required to carry out soil monitoring as part of your licence requirements?  | no  |   |   |
| 3  | Do you extract groundwater for use on site? If yes please specify use in comment section   | no  |   |   |
| 4  | Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below. | yes | See interpretation box to the right. The text is lifted from the quarterly site monitoring reports produced by AMEC.  | <p><b>January 2013:</b> The reported monitoring results for January 2013 from the limestone aquifer boreholes (BH04/1, BH102 and BH103) are below the trigger levels for the site. The highest ammoniacal nitrogen concentration recorded at BH102 was 9.27 mg/l, recorded in March 2004. The ammoniacal nitrogen trigger level of 3 mg/l was previously exceeded in March 2012 (4.05 mg/l) but not in August or November 2012. The remaining results for ammoniacal nitrogen are generally within previously reported ranges. The rest of the results for the other typical landfill leachate indicator parameters (chloride, dissolved oxygen, electrical conductivity) are again generally within the range of previous results.</p> <p><b>April 2013:</b> The reported monitoring results for April 2013 from the limestone aquifer boreholes are below the trigger levels for the site.</p> <p><b>September 2013:</b> The reported monitoring results for September 2013 from the limestone aquifer boreholes are mainly below the trigger levels for the site, with the exception of ammoniacal nitrogen in boreholes BH04/1 and BH103. Borehole BH04/1 is hydraulically up-gradient of the site, whereas borehole BH103 is hydraulically down-gradient of the site. The ammoniacal nitrogen concentration of 38.28 mg/l recorded in borehole BH103 is the highest recorded in this borehole since records began in 2001 (previous maximum of 5.987 mg/l, August 2003). The concentration recorded in borehole BH04/1 is the highest concentration recorded in this borehole since July 2009 (12.8 mg/l). The trigger levels for ammoniacal nitrogen in boreholes BH04/1 and BH103 were last exceeded in July 2009 and October 2008, respectively. The rest of the results for the other typical landfill leachate indicator parameters (chloride, dissolved oxygen, electrical conductivity) are again predominantly within the range of previous results, although boreholes BH04/1 and BH103 recorded the highest chloride concentrations measured in these boreholes since records began, at 53.67 mg/l and 35.71 mg/l, respectively.</p> <p><b>November 2013:</b> The reported monitoring results for November 2013 from the limestone aquifer boreholes are almost all below the trigger levels for the site, with the exception of ammoniacal nitrogen in borehole BH103, which is hydraulically down-gradient of the site. The ammoniacal nitrogen concentration of 7.47 mg/l recorded in borehole BH103, whilst exceeding the trigger level, is much lower than the previous result of 38.28 mg/l measured in September 2013. The rest of the results for the other typical landfill leachate indicator parameters (chloride, dissolved oxygen and electrical conductivity) are generally within the range of previous results. The borehole BH103 headworks have been severely damaged, allowing surface water to enter the borehole. This borehole is outside the landfill boundary to the west of the perimeter ditch and in an area where there has been reported recent peat cutting (i.e. a peat bog). From discussion with RCC in January 2014, it is understood that borehole BH103 has not been repaired yet and it appears that there is tyre around the borehole with a stake and piece of ducting pipe placed around it. It is assumed that this has been done as a temporary measure to protect the well headworks from further damage.</p> |
| 5  | Is the contamination related to operations at the facility (either current and/or historic)  | yes | Cells 1 to 5 at the site were designed and operated on the principles of 'dilute and disperse' and are therefore unlined.   |   |
| 6  | Have actions been taken to address contamination issues? If yes please summarise remediation strategies proposed/undertaken for the site   | yes | Capping and landfill gas/leachate management of Cells 1 to 5.   |   |
| 7  | Please specify the proposed time frame for the remediation strategy  | yes | Ongoing.  |   |
| 8  | Is there a licence condition to carry out/update ELRA for the site?  | yes | Condition 12.4.2 of Licence.  |   |
| 9  | Has any type of risk assessment been carried out for the site?   | yes | Please refer to Waste Licence Review application, Entec reference 00966rr529i2 dated March 2002.  |   |
| 10 | Has a Conceptual Site Model been developed for the site?   | yes | Please refer to EMS, latest version is 2010 update, Entec (now AMEC) ref: 15951rr689i1 and Waste Licence Review application, Entec reference 00966rr529i2 dated March 2002. |   |
| 11 | Have potential receptors been identified on and off site?  | yes | Please refer to EMS, latest version is 2010 update, Entec (now AMEC) ref: 15951rr689i1 and Waste Licence Review application, Entec reference 00966rr529i2 dated March 2002. |   |
| 12 | Is there evidence that contamination is migrating offsite?   | yes | See interpretation box to the right. The text is lifted from the quarterly site monitoring reports produced by AMEC.  |   |

## Groundwater/Soil monitoring template

Lic No:

W0059-03

Year

2013

Table 1: Upgradient Groundwater monitoring results

| Date of sampling                                  | Sample location reference | Parameter/ Substance | Methodology                    | Monitoring frequency | Maximum Concentration++ | Average Concentration+ | unit | GTV's* | DWS | Upward trend in pollutant concentration over last 5 years of monitoring data |
|---|---------------------------|----------------------|--------------------------------|----------------------|-------------------------|------------------------|------|--------|-----|--|
| 30 Jan, 9<br>Apr, 11<br>Sep and<br>20 Nov<br>2013 | BH04/1                    | Ammoniacal nitrogen  | Site Operating Procedure SOP15 | Quarterly            | 7.48                    | 1.9                    | mg/l | 3      | 0.3 | yes  |
| 30 Jan, 9<br>Apr, 11<br>Sep and<br>20 Nov<br>2013 | BH04/1                    | Chloride             | Site Operating Procedure SOP15 | Quarterly            | 53.67                   | 35.97                  | mg/l | 100    | 250 | yes  |
| 30 Jan, 9<br>Apr, 11<br>Sep and<br>20 Nov<br>2013 | BH04/1                    | TOC                  | Site Operating Procedure SOP15 | Quarterly            | 7.54                    | 6.37                   | mg/l | 80     | N/A | yes  |

.+ where average indicates arithmetic mean

.++ maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year



**Table 2: Downgradient Groundwater monitoring results**

| Date of sampling                                  | Sample location reference | Parameter/ Substance | Methodology                    | Monitoring frequency | Maximum Concentration | Average Concentration | unit | GTV's* | DWS | Upward trend in yearly average pollutant concentration over last 5 years of monitoring data |
|---|---------------------------|----------------------|--------------------------------|----------------------|-----------------------|-----------------------|------|--------|-----|---|
| 30 Jan, 9<br>Apr, 11<br>Sep and<br>20 Nov<br>2013 | BH102                     | Ammoniacal nitrogen  | Site Operating Procedure SOP15 | Quarterly            | 1.08                  | 0.44                  | mg/l | 3      | 0.3 | no  |
| 30 Jan, 9<br>Apr, 11<br>Sep and<br>20 Nov<br>2013 | BH102                     | Chloride             | Site Operating Procedure SOP15 | Quarterly            | 13.1                  | 9.08                  | mg/l | 100    | 250 | no  |
| 30 Jan, 9<br>Apr, 11<br>Sep and<br>20 Nov<br>2013 | BH102                     | TOC                  | Site Operating Procedure SOP15 | Quarterly            | 8.67                  | 6.59                  | mg/l | 80     | N/A | no  |
| 30 Jan, 9<br>Apr, 11<br>Sep and<br>20 Nov<br>2013 | BH103                     | Ammoniacal nitrogen  | Site Operating Procedure SOP15 | Quarterly            | 38.28                 | 12.06                 | mg/l | 3      | 0.3 | yes   |
| 30 Jan, 9<br>Apr, 11<br>Sep and<br>20 Nov<br>2013 | BH103                     | Chloride             | Site Operating Procedure SOP15 | Quarterly            | 35.71                 | 24.12                 | mg/l | 100    | 250 | yes   |
| 30 Jan, 9<br>Apr, 11<br>Sep and<br>20 Nov<br>2013 | BH103                     | TOC                  | Site Operating Procedure SOP15 | Quarterly            | 11.59                 | 9.08                  | mg/l | 80     | N/A | yes   |

\* please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA. [Groundwater monitoring template](#)

More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA [Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites \(EPA 2013\)](#) published guidance (see the link in G31)

\*\*Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS), if the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)

[Groundwater regulations](#) [Drinking water \(private supply\) standards](#) [Drinking water \(public supply\) standards](#) [Interim Guideline Values \(IGV\)](#)  
[Surface water EQS](#) [GTV's](#) [standards](#)

**Table 3: Soil results**

| Date of sampling | Sample location reference | Parameter/ Substance | Methodology | Monitoring frequency | Maximum Concentration | Average Concentration | unit   |
|------------------|---------------------------|----------------------|-------------|----------------------|-----------------------|-----------------------|--------|
|                  |                           |                      |             |                      |                       |                       | SELECT |
|                  |                           |                      |             |                      |                       |                       | SELECT |

Where additional detail is required please enter it here in 200 words or less

**Environmental Liabilities template**

Lic No:

W0059-03

Year

2013

[Click here to access EPA guidance on Environmental Liabilities and Financial provision](#)

|    |   | Commentary                 |   |
|----|---|----------------------------|---|
| 1  | ELRA initial agreement status   | Required but not submitted |   |
| 2  | ELRA review status  | SELECT                     | ELRA not submitted to date  |
| 3  | Amount of Financial Provision cover required as determined by the latest ELRA | N/A                        |   |
| 4  | Financial Provision for ELRA status   | Required but not submitted |   |
| 5  | Financial Provision for ELRA - amount of cover                                | Not known at this stage.   |   |
| 6  | Financial Provision for ELRA - type   | Other please specify       | Financial provision will be made available from Central Government funds by way of loans from Central Government. |
| 7  | Financial provision for ELRA expiry date                                      | Enter expiry date          | No date of expiry   |
| 8  | Closure plan initial agreement status   | Required but not submitted |   |
| 9  | Closure plan review status  | SELECT                     | N/A   |
| 10 | Financial Provision for Closure status  | Required but not submitted |   |
| 11 | Financial Provision for Closure - amount of cover                             | Not known at this stage.   |   |
| 12 | Financial Provision for Closure - type  | Other please specify       | Financial provision will be made available from Central Government funds by way of loans from Central Government. |
| 13 | Financial provision for Closure expiry date                                   | Enter expiry date          | No date of expiry   |

|   |  |         |          |      |      |
|---|--|---------|----------|------|------|
| <b>Environmental Management Programme/Continuous Improvement Programme template</b> |  | Lic No: | W0059-03 | Year | 2013 |
|---|--|---------|----------|------|------|

| Highlighted cells contain dropdown menu click to view |   | Additional Information |   |
|---|---|------------------------|---|
| 1   | Do you maintain an Environmental Mangement System (EMS) for the site. If yes, please detail in additional information   | Yes                    | Latest version is 2010 update, Entec (now AMEC) ref: 15951rr689i1   |
| 2   | Does the EMS reference the most significant environmental aspects and associated impacts on-site  | Yes                    | See above referenced EMS document.  |
| 3   | Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements   | Yes                    | See above referenced EMS document.  |
| 4   | Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence | Yes                    | Refer to Roscommon County Council website:<br><a href="http://www.roscommoncoco.ie/en/Services/Environment/Waste_Management,_Disposal_and_Recycling/">http://www.roscommoncoco.ie/en/Services/Environment/Waste_Management,_Disposal_and_Recycling/</a> |

#### Environmental Management Programme (EMP) report

| Objective Category | Target | Status (% completed) | How target was progressed | Responsibility | Intermediate outcomes |
|--------------------|--------|----------------------|---------------------------|----------------|-----------------------|
| SELECT             |        | SELECT               |                           | SELECT         | SELECT                |
| SELECT             |        | SELECT               |                           | SELECT         | SELECT                |
| SELECT             |        | SELECT               |                           | SELECT         | SELECT                |

|  |                  |      |      |
|--|------------------|------|------|
| <b>Noise monitoring summary report</b> | Lic No: W0059-03 | Year | 2013 |
|--|------------------|------|------|

- 1 Was noise monitoring a licence requirement for the AER period?  
If yes please fill in table N1 noise summary below
- 2 Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?
- 3 Does your site have a noise reduction plan
- 4 When was the noise reduction plan last updated?
- 5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

[Noise Guidance note NG4](#)

**Table N1: Noise monitoring summary**

| Date of monitoring        | Time period | Noise location (on site) | Noise sensitive location -NSL (if applicable) | LA <sub>eq</sub> | LA <sub>90</sub> | LA <sub>10</sub> | LA <sub>max</sub> | Tonal or Impulsive noise* (Y/N) | If tonal /impulsive noise was identified was 5dB penalty applied? | Comments (ex. main noise sources on site, & extraneous noise ex. road traffic) | Is <u>site</u> compliant with noise limits (day/evening/night)? |
|---------------------------|-------------|--------------------------|---|------------------|------------------|------------------|-------------------|---------------------------------|---|--|---|
| Not completed (see below) |             |                          |   |                  |                  |                  |                   | SELECT                          | SELECT  |  | SELECT  |
|                           |             |                          |   |                  |                  |                  |                   |                                 |   |  |   |
|                           |             |                          |   |                  |                  |                  |                   |                                 |   |  |   |
|                           |             |                          |   |                  |                  |                  |                   |                                 |   |  |   |
|                           |             |                          |   |                  |                  |                  |                   |                                 |   |  |   |
|                           |             |                          |   |                  |                  |                  |                   |                                 |   |  |   |

\*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

|   |
|---|
| <p>** please explain the reason for not taking action/resolution of noise issues?</p> <p>Noise monitoring is required as per Table D.4.1 of the licence on an annual basis, but was not carried out in 2013 as the landfill site had ceased accepting waste for disposal. Noise monitoring was last carried out on 6 December 2010.</p> |
|---|

## Resource Usage/Energy efficiency summary

Lic No:

W0059-03

Year

2013

- 1 When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below
- 2 Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information
- 3 Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information

## Additional information

|  |   |
|--|---|
| Site energy use reviewed as part of AER, no recommendations made as landfill site is now closed. |   |
| no   | The Council is not part of the LIEN         |
| SELECT   | N/A - fuel oil not used in boilers on site. |

| Energy Use                               | Previous year | Current year | Production +/- % compared to previous reporting year** | Energy Consumption +/- % vs overall site production* |
|--|---------------|--------------|--|--|
| Total Energy Used (MWHrs)                | 127.143       | 65.106       |  | N/A - no site production                             |
| Total Energy Generated (MWHrs)           | 0             | 0            | N/A  | N/A  |
| Total Renewable Energy Generated (MWHrs) | 0             | 0            | N/A  | N/A  |
| Electricity Consumption (MWHrs)          | 127.143       | 65.106       |  | N/A - no site production                             |
| Fossil Fuels Consumption:                |               |              |  |  |
| Heavy Fuel Oil (m3)                      | 0             | 0            | N/A  | N/A  |
| Light Fuel Oil (m3)                      | 0             | 0            | N/A  | N/A  |
| Natural gas (m3)                         | 0             | 0            | N/A  | N/A  |
| Coal/Solid fuel (metric tonnes)          | 0             | 0            | N/A  | N/A  |
| Peat (metric tonnes)                     | 0             | 0            | N/A  | N/A  |
| Renewable Biomass                        | 0             | 0            | N/A  | N/A  |
| Renewable energy generated on site       | 0             | 0            | N/A  | N/A  |

\* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year

\*\* where site production information is available please enter percentage increase or decrease compared to previous year

| Water use      | Water extracted Previous year m3/yr. | Water extracted Current year m3/yr. | Production +/- % compared to previous reporting year** | Energy Consumption +/- % vs overall site production* | Water Emissions  | Water Consumption  | Unaccounted for Water: |
|----------------|--------------------------------------|-------------------------------------|--|--|--|--|------------------------|
|                |                                      |                                     |  |  | Volume Discharged back to environment(m <sup>3</sup> /yr): | Volume used i.e not discharged to environment e.g. released as steam m3/yr |                        |
| Groundwater    |                                      |                                     |  |  |  |  |                        |
| Surface water  |                                      |                                     |  |  |  |  |                        |
| Public supply  | Estimated at 297                     | Estimated at 297                    | 0  | N/A  | Estimated at 297   | N/A  | N/A                    |
| Recycled water |                                      |                                     |  |  |  |  |                        |
| Total          |                                      |                                     |  |  |  |  |                        |

\* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year

\*\* where site production information is available please enter percentage increase or decrease compared to previous year

## Resource Usage/Energy efficiency summary

Lic No:

W0059-03

Year

2013

| Table R3 Waste Stream Summary |       |          |              |          |       |
|-------------------------------|-------|----------|--------------|----------|-------|
|                               | Total | Landfill | Incineration | Recycled | Other |
| Hazardous (Tonnes)            |       |          |              |          |       |
| Non-Hazardous (Tonnes)        |       |          |              |          |       |

| Table R4: Energy Audit finding recommendations |                 |                                  |                    |                            |                     |                |                 |                     |
|--|-----------------|----------------------------------|--------------------|----------------------------|---------------------|----------------|-----------------|---------------------|
| Date of audit                                  | Recommendations | Description of Measures proposed | Origin of measures | Predicted energy savings % | Implementation date | Responsibility | Completion date | Status and comments |
|  |                 |                                  | SELECT             |                            |                     |                |                 |                     |
|  |                 |                                  | SELECT             |                            |                     |                |                 |                     |
|  |                 |                                  | SELECT             |                            |                     |                |                 |                     |

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry) please complete the following information

|   | Unit ID | Unit ID | Unit ID | Unit ID | Station Total |
|---|---------|---------|---------|---------|---------------|
| Technology                                |         |         |         |         |               |
| Primary Fuel                              |         |         |         |         |               |
| Thermal Efficiency                        |         |         |         |         |               |
| Unit Date of Commission                   |         |         |         |         |               |
| Total Starts for year                     |         |         |         |         |               |
| Total Running Time                        |         |         |         |         |               |
| Total Electricity Generated (GWH)         |         |         |         |         |               |
| House Load (GWH)                          |         |         |         |         |               |
| KWH per Litre of Process Water            |         |         |         |         |               |
| KWH per Litre of Total Water used on Site |         |         |         |         |               |





|   |         |                                     |                                    |      |
|---|---------|-------------------------------------|------------------------------------|------|
| <b>WASTE SUMMARY</b>  | Lic No: | W0059-03                            | Year                               | 2013 |
| <b>SECTION A-PRTR ON SITE WASTE TREATMENT AND WASTE TRANSFERS TAB- TO BE COMPLETED BY ALL IPPC AND WASTE FACILITIES</b> |         | PRTR facility <a href="#">login</a> | dropdown list click to see options |      |

**SECTION B- WASTE ACCEPTED ONTO SITE-TO BE COMPLETED BY ALL IPPC AND WASTE FACILITIES**

Were any wastes accepted onto your site for recovery or disposal or treatment prior to recovery or disposal within the boundaries of your facility?; (waste generated within your boundaries is to be captured through PRTR reporting)  
 1 If yes please enter details in table 1 below

|                        |   |
|------------------------|---|
| Additional Information |   |
| No                     | Landfill ceased accepting waste in 2010 |

2 Did your site have any rejected consignments of waste in the current reporting year? If yes please give a brief explanation in the additional information

|    |   |
|----|---|
| No | Landfill ceased accepting waste in 2010 |
|----|---|

3 Was waste accepted onto your site that was generated outside the Republic of Ireland? If yes please state the quantity in tonnes in additional information

|     |   |
|-----|---|
| N/A | Landfill ceased accepting waste in 2010 |
|-----|---|

**Table 1 Details of waste accepted onto your site for recovery, disposal or treatment (do not include wastes generated at your site, as these will have been reported in your PRTR workbook)**

| Licensed annual tonnage limit for your site (total tonnes/annum) | EWC code | Source of waste accepted | Description of waste accepted<br>Please enter an accurate and detailed description - which applies to relevant EWC code<br><a href="#">European Waste Catalogue EWC codes</a> | Quantity of waste accepted in current reporting year (tonnes) | Quantity of waste accepted in previous reporting year (tonnes) | Reduction/ Increase over previous year +/- % | Reason for reduction/ increase from previous reporting year | Packaging Content (%) - only applies if the waste has a packaging component | Disposal/Recovery or treatment operation carried out at your site and the description of this operation | Quantity of waste remaining on site at the end of reporting year (tonnes) | Comments - |
|--|----------|--------------------------|---|---|--|--|---|---|---|---|------------|
| <i>SEE PRTR FOR WASTES ACCEPTED AT RECYCLING CENTRE</i>          |          |                          |   |   |  |  |   |   |   |   |            |
|  |          |                          |   |   |  |  |   |   |   |   |            |
|  |          |                          |   |   |  |  |   |   |   |   |            |

**SECTION C-TO BE COMPLETED BY ALL WASTE FACILITIES (waste transfer stations, Composters, Material recovery facilities etc) EXCEPT LANDFILL SITES**

4 Is all waste processing infrastructure as required by your licence and approved by the Agency in place? If no please list waste processing infrastructure required onsite

|     |                                     |
|-----|-------------------------------------|
| N/A | No waste processing infrastructure. |
|-----|-------------------------------------|

5 Is all waste storage infrastructure as required by your licence and approved by the Agency in place? If no please list waste storage infrastructure required on site

|     |  |
|-----|--|
| Yes |  |
|-----|--|

6 Does your facility have relevant nuisance controls in place?

|     |   |
|-----|---|
| Yes | Refer to Site Operating Procedure SOP 7 |
|-----|---|

7 Do you have an odour management system in place for your facility? If no why?

|     |   |
|-----|---|
| Yes | Odour management procedure in place, SOP ref: SOP29 |
|-----|---|

8 Do you maintain a sludge register on site?

|    |  |
|----|--|
| No |  |
|----|--|

**SECTION D-TO BE COMPLETED BY LANDFILL SITES ONLY**

**Table 2 Waste type and tonnage-landfill only**

| Waste types permitted for disposal | Authorised/licenced annual intake for disposal (tpa) | Actual intake for disposal in reporting year (tpa) | Remaining licensed capacity at end of reporting year (m3) | Comments                                |
|------------------------------------|--|--|---|---|
|                                    |  |  |   | Landfill ceased accepting waste in 2010 |
|                                    |  |  |   |   |
|                                    |  |  |   |   |

**Table 3 General information-Landfill only**

| Area ID     | Date landfilling commenced | Date landfilling ceased | Currently landfilling | Private or Public Operated | Inert or non-hazardous | Predicted date to cease landfilling | Licence permits asbestos | Is there a separate cell for asbestos? | Accepted asbestos in reporting year | Total disposal area occupied by waste | Lined disposal area occupied by waste | Unlined area | Comments on liner type |
|-------------|----------------------------|-------------------------|-----------------------|----------------------------|------------------------|-------------------------------------|--------------------------|--|-------------------------------------|---------------------------------------|---------------------------------------|--------------|------------------------|
|             |                            |                         |                       |                            |                        |                                     |                          |  |                                     | SELECT UNIT                           | SELECT UNIT                           | SELECT UNIT  |                        |
| Cells 1 - 8 | 1980                       | 2010                    | No                    | Public                     | Non Hazardous          | Landfilling now complete            | Yes                      | No                                     | No                                  | 5.02 ha                               | 2.27 ha                               | 2.75 ha      | 0.5 m BES and 2mm HDPE |

|                      |         |          |      |      |
|----------------------|---------|----------|------|------|
| <b>WASTE SUMMARY</b> | Lic No: | W0059-03 | Year | 2013 |
|----------------------|---------|----------|------|------|

**Table 4 Environmental monitoring-landfill only** [Landfill Manual-Monitoring Standards](#)

| Was meteorological monitoring in compliance with Landfill Directive (LD) standard in reporting year + | Was leachate monitored in compliance with LD standard in reporting year | Was Landfill Gas monitored in compliance with LD standard in reporting year | Was SW monitored in compliance with LD standard in reporting year | Have GW trigger levels been established | Were emission limit values agreed with the Agency (ELVs) | Was topography of the site surveyed in reporting year | Has the statement under S53(A)(5) of WMA been submitted in reporting year | Comments  |
|---|---|---|---|---|--|---|---|---|
| None  | Yes   | Yes   | Yes   | Yes                                     | Yes  | No  | No  | There will be no statement for 2013 as it is understood that there are no charges to levy on a closed landfill. |

-> please refer to Landfill Manual linked above for relevant Landfill Directive monitoring standards

**Table 5 Capping-Landfill only**

| Area uncapped* | Area with temporary cap | Area with final cap to LD Standard m2 ha, a | Area capped other | Area with waste that should be permanently capped to date under licence | What materials are used in the cap  | Comments |
|----------------|-------------------------|---|-------------------|---|---|----------|
| SELECT UNIT    | SELECT UNIT             |   |                   |   |   |          |
| None           | None                    | 5.02 ha                                     | None              | None  | (Base upwards): regraded waste, then regulating layer, then geosynthetic gas drainage layer, LLDPE geomembrane, geosynthetic drainage layer, restoration soils. |          |

\*please note this includes daily cover area

**Table 6 Leachate-Landfill only**

9 Is leachate from your site treated in a Waste Water Treatment Plant?

|     |
|-----|
| Yes |
| No  |

10 Is leachate released to surface water? If yes please complete leachate mass load information below

| Volume of leachate in reporting year(m3) | Leachate (BOD) mass load (kg/annum) | Leachate (COD) mass load (kg/annum) | Leachate (NH4) mass load (kg/annum) | Leachate (Chloride) mass load kg/annum | Leachate treatment on-site | Specify type of leachate treatment | Comments |
|--|-------------------------------------|-------------------------------------|-------------------------------------|--|----------------------------|------------------------------------|----------|
|  |                                     |                                     |                                     |  |                            |                                    |          |

Please ensure that all information reported in the landfill gas section is consistent with the Landfill Gas Survey submitted in conjunction with PRTR returns

**Table 7 Landfill Gas-Landfill only**

| Gas Captured & Treated by LFG System m3 | Power generated (MW / KWh) | Used on-site or to national grid | Was surface emissions monitoring performed during the reporting year? | Comments  |
|---|----------------------------|----------------------------------|---|---|
| 2143644                                 |                            | 0 Flared off                     | No  | Estimate of gas captured and treated by landfill gas system using landfill gas survey. Surface emissions monitoring last carried out in 2011 by Odour Monitoring Ireland. |



Environmental Protection Agency

| PRTR# : W0059 | Facility Name : Ballaghaderreen Landfill | Filename : w0059\_2013.xls | Return Year : 2013 |

[Guidance to completing the PRTR workbook](#)

# AER Returns Workbook

Version 1.1.18

|                       |      |
|-----------------------|------|
| <b>REFERENCE YEAR</b> | 2013 |
|-----------------------|------|

## 1. FACILITY IDENTIFICATION

|                            |                          |
|----------------------------|--------------------------|
| Parent Company Name        | Roscommon County Council |
| Facility Name              | Ballaghaderreen Landfill |
| PRTR Identification Number | W0059                    |
| Licence Number             | W0059-03                 |

### Waste or IPPC Classes of Activity

| No.  | class_name  |
|--|---|
| 3.5  | Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.  |
| 3.1  | Deposit on, in or under land (including landfill).  |
| 3.13   | Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.     |
| 3.4  | Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.  |
| 4.11   | Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.  |
| 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.  |
| Address 1                                      | Aghalustia Townland   |
| Address 2                                      | Ballaghaderreen   |
| Address 3                                      | Co. Roscommon   |
| Address 4                                      |   |
|  | Roscommon   |
| Country  | Ireland   |
| Coordinates of Location                        | -6.71294 52.9688  |
| River Basin District                           | IEGBNISH  |
| NACE Code                                      | 3821  |
| Main Economic Activity                         | Treatment and disposal of non-hazardous waste   |
| <b>AER Returns Contact Name</b>                | Annie Keane (W0059)   |
| <b>AER Returns Contact Email Address</b>       | akeane@roscommoncoco.ie   |
| <b>AER Returns Contact Position</b>            | Deputy Landfill Manager   |
| <b>AER Returns Contact Telephone Number</b>    | 00353949862767  |
| <b>AER Returns Contact Mobile Phone Number</b> | 00353876977555  |
| <b>AER Returns Contact Fax Number</b>          | 00353949862768  |
| <b>Production Volume</b>                       | 0.0   |
| <b>Production Volume Units</b>                 |   |
| <b>Number of Installations</b>                 | 0   |
| <b>Number of Operating Hours in Year</b>       | 0   |

|                               |   |
|-------------------------------|---|
| <b>Number of Employees</b>    | 1   |
| <b>User Feedback/Comments</b> | Version 1. High variance in methane emissions mainly due to the average measured flow rate at the flare being much lower in 2013 (246 m <sup>3</sup> /hr) compared to 2012 (433 m <sup>3</sup> /hr). This has a big negative effect on the volume of methane flared, as calculated using the landfill gas survey spreadsheet. |
| <b>Web Address</b>            |   |

**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?   |  |
| 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# : W0059 | Facility Name : Ballaghaderreen Landfill | Filename : w0059\_2013.xls | Return Year : 2013 |

27/03/2014 11:02

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

| POLLUTANT    |  | METHOD |             |   | Please enter all quantities in this section in KGs |                   |                        |                      |
|--------------|--|--------|-------------|---|--|-------------------|------------------------|----------------------|
| No. Annex II | Name   | M/C/E  | Method Used |   | Emission Point 1                                   | QUANTITY          |                        |                      |
|              |  |        | Method Code | Designation or Description                          |  | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| 06           | Ammonia (NH3)                                  | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 17           | Arsenic and compounds (as As)                  | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 18           | Cadmium and compounds (as Cd)                  | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 03           | Carbon dioxide (CO2)                           | C      | OTH         | GasSim V2.5 model - below reporting threshold (BRT) | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 02           | Carbon monoxide (CO)                           | C      | OTH         | GasSim V2.5 model - BRT                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 19           | Chromium and compounds (as Cr)                 | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 20           | Copper and compounds (as Cu)                   | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 42           | Hexachlorobenzene (HCB)                        | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 04           | Hydro-fluorocarbons (HFCs)                     | C      | OTH         | GasSim V2.5 model - BRT                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 23           | Lead and compounds (as Pb)                     | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 21           | Mercury and compounds (as Hg)                  | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 01           | Methane (CH4)                                  | C      | OTH         | GasSim V2.5 model and measured data                 | 352006.0   | 352006.0          | 0.0                    | 0.0                  |
| 22           | Nickel and compounds (as Ni)                   | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 08           | Nitrogen oxides (NOx/NO2)                      | C      | OTH         | GasSim V2.5 model - BRT                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 07           | Non-methane volatile organic compounds (NMVOC) | C      | OTH         | GasSim V2.5 model - BRT                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 86           | Particulate matter (PM10)                      | C      | OTH         | GasSim V2.5 model - BRT                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 47           | PCDD + PCDF (dioxins + furans)(as Teq)         | C      | OTH         | GasSim V2.5 model - BRT                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 48           | Pentachlorobenzene                             | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 11           | Sulphur oxides (SOx/SO2)                       | C      | OTH         | GasSim V2.5 model - BRT                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 53           | Tetrachloromethane (TCM)                       | C      | OTH         | GasSim V2.5 model - BRT                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 24           | Zinc and compounds (as Zn)                     | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 05           | Nitrous oxide (N2O)                            | C      | OTH         | GasSim V2.5 model - n/a                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 55           | 1,1,1-trichloroethane                          | C      | OTH         | GasSim V2.5 model - BRT                             | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 10           | Sulphur hexafluoride (SF6)                     | C      | OTH         | GasSim V2.5 model - n/a                             | 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

| POLLUTANT    |   | METHOD |             |                            | Please enter all quantities in this section in KGs |                   |                        |                      |
|--------------|---|--------|-------------|----------------------------|--|-------------------|------------------------|----------------------|
| No. Annex II | Name                                      | M/C/E  | Method Used |                            | Emission Point 1                                   | QUANTITY          |                        |                      |
|              |   |        | Method Code | Designation or Description |  | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |
| 56           | 1,1,2,2-tetrachloroethane                 | C      | OTH         | GasSim V2.5 model - BRT    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 44           | 1,2,3,4,5,6-hexachlorocyclohexane(HCH)    | C      | OTH         | GasSim V2.5 model - BRT    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 34           | 1,2-dichloroethane (EDC)                  | C      | OTH         | GasSim V2.5 model - BRT    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 26           | Aldrin                                    | C      | OTH         | GasSim V2.5 model - n/a    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 61           | Anthracene                                | C      | OTH         | GasSim V2.5 model - n/a    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 81           | Asbestos                                  | C      | OTH         | GasSim V2.5 model - n/a    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 62           | Benzene                                   | C      | OTH         | GasSim V2.5 model - BRT    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 28           | Chlordane                                 | C      | OTH         | GasSim V2.5 model - n/a    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 29           | Chlordecone                               | C      | OTH         | GasSim V2.5 model - n/a    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 80           | Chlorine and inorganic compounds (as HCl) | C      | OTH         | GasSim V2.5 model - n/a    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 15           | Chlorofluorocarbons (CFCs)                | C      | OTH         | GasSim V2.5 model          | 3.27   | 3.27              | 0.0                    | 0.0                  |
| 33           | DDT                                       | C      | OTH         | GasSim V2.5 model - n/a    | 0.0  | 0.0               | 0.0                    | 0.0                  |
| 70           | Di-(2-ethyl hexyl) phthalate (DEHP)       | C      | OTH         | GasSim V2.5 model - n/a    | 0.0  | 0.0               | 0.0                    | 0.0                  |

|    |  |   |     |                         |      |      |     |     |
|----|--|---|-----|-------------------------|------|------|-----|-----|
| 35 | Dichloromethane (DCM)                    | C | OTH | GasSim V2.5 model - BRT | 0.0  | 0.0  | 0.0 | 0.0 |
| 36 | Dieldrin                                 | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 39 | Endrin                                   | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 65 | Ethyl benzene                            | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 66 | Ethylene oxide                           | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 84 | Fluorine and inorganic compounds (as HF) | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 16 | Halons                                   | C | OTH | GasSim V2.5 model - BRT | 0.0  | 0.0  | 0.0 | 0.0 |
| 41 | Heptachlor                               | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 90 | Hexabromobiphenyl                        | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 14 | Hydrochlorofluorocarbons (HCFCs)         | C | OTH | GasSim V2.5 model       | 2.76 | 2.76 | 0.0 | 0.0 |
| 45 | Lindane                                  | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 46 | Mirex                                    | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 68 | Naphthalene                              | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 49 | Pentachlorophenol (PCP)                  | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 09 | Perfluorocarbons (PFCs)                  | C | OTH | GasSim V2.5 model - BRT | 0.0  | 0.0  | 0.0 | 0.0 |
| 71 | Phenols (as total C)                     | C | OTH | GasSim V2.5 model - BRT | 0.0  | 0.0  | 0.0 | 0.0 |
| 50 | Polychlorinated biphenyls (PCBs)         | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 52 | Tetrachloroethylene (PER)                | C | OTH | GasSim V2.5 model - BRT | 0.0  | 0.0  | 0.0 | 0.0 |
| 73 | Toluene                                  | C | OTH | GasSim V2.5 model - BRT | 0.0  | 0.0  | 0.0 | 0.0 |
| 59 | Toxaphene                                | C | OTH | GasSim V2.5 model - n/a | 0.0  | 0.0  | 0.0 | 0.0 |
| 54 | Trichlorobenzenes (TCBs)(all isomers)    | C | OTH | GasSim V2.5 model - BRT | 0.0  | 0.0  | 0.0 | 0.0 |
| 57 | Trichloroethylene                        | C | OTH | GasSim V2.5 model - BRT | 0.0  | 0.0  | 0.0 | 0.0 |
| 58 | Trichloromethane                         | C | OTH | GasSim V2.5 model - BRT | 0.0  | 0.0  | 0.0 | 0.0 |
| 60 | Vinyl chloride                           | C | OTH | GasSim V2.5 model - BRT | 0.0  | 0.0  | 0.0 | 0.0 |
| 78 | Xylenes                                  | C | OTH | GasSim V2.5 model - BRT | 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)**

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

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

**Additional Data Requested from Landfill operators**

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

| Please enter summary data on the quantities of methane flared and / or utilised | T (Total) kg/Year | M/C/E | Method Used |                                     | Facility Total Capacity m3 per hour |
|---|-------------------|-------|-------------|-------------------------------------|-------------------------------------|
|   |                   |       | Method Code | Designation or Description          |                                     |
| Total estimated methane generation (as per site model)                          | 926370.0          | C     | OTH         | GasSim V2.5 model                   | N/A                                 |
| Methane flared  | 574364.0          | C     | OTH         | From landfill gas survey            | 500.0 (Total Flaring Capacity)      |
| Methane utilised in engine/s  | 0.0               |       |             |                                     | 0.0 (Total Utilising Capacity)      |
| Net methane emission (as reported in Section A above)                           | 352006.0          | C     | OTH         | GasSim V2.5 model and measured data | N/A                                 |

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

| PRTR# : W0059 | Facility Name : Ballaghaderreen Landfill | Filename : w0059\_2013.xls | Return Year : 2013 |

27/03/2014 11:02

**SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS**

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as t

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

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

**SECTION B : REMAINING PRTR POLLUTANTS**

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

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

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

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

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

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

| PRTR# : W0059 | Facility Name : Ballaghaderreen Landfill | Filename : w0059\_2013.xls | Return Y

27/03/2014 11:02

**SECTION A : PRTR POLLUTANTS**

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

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

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

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

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



4.4 RELEASES TO LAND

[Link to previous years emissions data](#)

| PRTR# : W0059 | Facility Name : Ballaghaderreen Landfill | Filename : w0059\_2013.xls | Return Year : 2013 |

27/03/2014 11:03

**SECTION A : PRTR POLLUTANTS**

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

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

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

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : W0059 | Facility Name : Ballaghaderreen Landfill | Filename : w0059\_2013.xls | Return Year : 2013 |

27/03/2014 11:03

Please enter all quantities on this sheet in Tonnes

11

| 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 Destination Facility | Haz Waste : Address of Next Destination Facility                                       | Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)          | Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY) |
|----------------------|---------------------|-----------|----------------------------|---|---------------------------|-------------|--------------------|-----------------------|---|--|---|--|
|                      |                     |           |                            |   |                           | M/C/E       | Method Used        |                       | Non-<br>Licence/Permit No of Recover/Disposer                       | Non Haz Waste: Address of Recover/Disposer   |   |  |
| Within the Country   | 15 01 01            | No        | 21.732                     | paper and cardboard packaging   | R5                        | M           | Weighed            | Offsite in Ireland    | Barna Waste,CW074   | Carrowbrowne,Headford Road,Galway,,Ireland   |   |  |
| Within the Country   | 15 01 04            | No        | 3.057                      | metallic packaging  | R4                        | M           | Weighed            | Offsite in Ireland    | Barna Waste,CW074   | Carrowbrowne,Headford Road,Galway,,Ireland   |   |  |
| Within the Country   | 16 06 04            | No        | 0.79                       | alkaline batteries (except 16 06 03)  | R4                        | M           | Weighed            | Offsite in Ireland    | Enva Portlaoise,W0184-01  | Estate,,Co Laois,Ireland   |   |  |
| Within the Country   | 19 07 03            | No        | 21019.0                    | landfill leachate other than those mentioned in 19 07 02  | D8                        | M           | Volume Calculation | Offsite in Ireland    | WWTW,D0123-01   | Ballaghaderreen,,Co Roscommon,Ireland  |   |  |
| To Other Countries   | 20 01 02            | No        | 9.9                        | glass   | R5                        | M           | Weighed            | Abroad                | Clearcircle Environmental (NI) Ltd t/a Glassdon,LN/08/103           | 52 Creagh Road,Toomebridge,Co Antrim,BT41 3SE,United Kingdom                           |   |  |
| Within the Country   | 20 01 11            | No        | 2.27                       | textiles  | R5                        | M           | Weighed            | Offsite in Ireland    | Textile Recycling,CW014   | Glen Abbey Complex,Belgarde Road,Tallaght,D24,Ireland                                  |   |  |
| To Other Countries   | 20 01 26            | Yes       | 0.78                       | oil and fat other than those mentioned in 20 01 25  | R9                        | M           | Weighed            | Abroad                | Frylite,WML26/26  | Orchard Road,Orchard Road Industrial Estate,Strabane,Co Tyrone BT82 9FR,United Kingdom | Frylite,WML26/26,Orchard Road,Orchard Road Industrial Estate,Strabane,Co Tyrone BT82 9FR,United Kingdom | Orchard Road,Orchard Road Industrial Estate,Strabane,Co Tyrone BT82 9FR,United Kingdom         |
| To Other Countries   | 20 01 27            | Yes       | 3.208                      | paint, inks, adhesives and resins containing dangerous substances discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35 | R6                        | M           | Weighed            | Abroad                | Indaver Ireland,W36-02  | 4 Haddington Terrace,Dun Laoighre,Co Dublin,,Ireland                                   | Nelson,,Louis-Krages Strasse,1028237,Bremen,,Germany  | Louis-Krages Strasse,1028237,Bremen,,Germany   |
| Within the Country   | 20 01 36            | No        | 58.08                      | discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35   | R5                        | M           | Weighed            | Offsite in Ireland    | KMK Metals Recycling Ltd,W01113-03                                  | Cappincur,Tullamor,,Co Offaly,Ireland  |   |  |
| Within the Country   | 20 01 38            | No        | 14.54                      | wood other than that mentioned in 20 01 37  | R3                        | M           | Weighed            | Offsite in Ireland    | Barna Waste,CW074   | Carrowbrowne,Headford Road,Galway,,Ireland   |   |  |
| Within the Country   | 20 01 39            | No        | 8.593                      | plastics  | R5                        | M           | Weighed            | Offsite in Ireland    | Barna Waste,CW074   | Carrowbrowne,Headford Road,Galway,,Ireland   |   |  |
| Within the Country   | 20 01 40            | No        | 15.32                      | metals  | R4                        | M           | Weighed            | Offsite in Ireland    | Barna Waste,CW074   | Carrowbrowne,Headford Road,Galway,,Ireland   |   |  |
| Within the Country   | 20 03 01            | No        | 56.7                       | mixed municipal waste   | D1                        | M           | Weighed            | Offsite in Ireland    | Barna Waste,CW074   | Carrowbrowne,Headford Road,Galway,,Ireland   |   |  |

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