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**ANNUAL ENVIRONMENTAL REPORT**  
**STARRUS ECO HOLDINGS LIMITED**  
**MATERIALS RECOVERY FACILITY**  
**DOCK ROAD, LIMERICK**  
**LICENCE NO. W0082-02**  
**JANUARY 2014 – DECEMBER 2014**

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| Project    | Annual Environmental Report 2014      |        |                                 |                        |
|------------|---------------------------------------|--------|---------------------------------|------------------------|
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| Report No  | Date                                  | Status | Prepared By                     | Reviewed By            |
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# 1. INTRODUCTION

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This is the 2014 Annual Environmental Report (AER) for the Starrus Eco Holdings Ltd. (Greenstar), Materials Recovery Facility (MRF) at Ballykeefe, Dock Road, Limerick (W0082-02) and covers the reporting period January 2014 to December 2014. Transfer of the licence from Greenstar Limited to Starrus Eco Holdings Ltd was completed in March 2014.

The content is based on Schedule F of the Licence and the report format follows guidelines set in the “Guidance Note for Annual Environmental Report” issued by the Environmental Protection Agency (Agency)<sup>1</sup>. Cognisance was also taken of the Agency AER Draft Guidance Document and Draft AER Templates issued in January 2013<sup>2</sup>.

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<sup>1</sup> EPA (Environmental Protection Agency) 1999 Waste Licensing – Draft Guidance on Environmental Management Systems and Reporting to the Agency

<sup>2</sup> EPA (Environmental Protection Agency) 2012 Draft AER Guidance Document

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## 2. SITE DESCRIPTION

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### 2.1 Site Location and Layout

The facility is located on the Dock Road in Limerick, in an area dominated by industrial and commercial buildings and activities. It is adjacent to the N69, on the main Limerick to Foynes road.

There are two adjoining buildings, comprising a recycling area and transfer area. There is also a separate office building and adjoining vehicle and plant maintenance workshop located close to the site entrance. The open yard areas are paved and are used for external waste storage bays (C&D, glass, metals and timber), baling and storage of wrapped wastes, skip storage, truck parking and a vehicle washing area (not in use during the reporting period). The entire site, including the floors of the transfer buildings and the open yards, is paved with concrete.

### 2.2 Waste Management Activities

The existing Licence (W0082-02) allows Greenstar to accept and process 90,000 tonnes of commercial and industrial, construction and demolition and municipal wastes. A proposed determination (PD) in relation to W0082-03 was issued in December 2014. This would allow increase in tonnage to 130,000 tonnes per annum.

#### 2.2.1 Waste Types & Processes

The facility is authorised to accept the following waste types and quantities, as specified in Schedule A of the Licence: -

- Commercial and Industrial Waste (70,000 tonnes),
- Municipal (15,500 tonnes),
- Construction & Demolition (4,500 tonnes).

In July 2012 Schedule A of the Licence was amended by the Agency to allow for the following waste types and quantities-

- Commercial and Industrial Waste (10,500 tonnes),
- Municipal (75,000 tonnes),

- Construction & Demolition (4,500 tonnes).

No hazardous wastes or liquid waste are accepted. The maximum amount of each waste type accepted, may be altered with the prior agreement of the Agency, as long as the total maximum tonnage is not exceeded. Agreement to one such request was obtained in July 2012.

The key processes carried out at the facility include: -

- Segregation of recyclable materials (paper, cardboards, plastic, wood, metals, glass);
- Bulking up of Municipal Solid Waste;
- Segregation and bulking of C&D waste;
- Transfer of recovered and residual materials to appropriately licensed recycling, recovery and disposal outlets, and
- Timber shredding
- Baling and wrapping of waste material (20 03 01)

#### *Commercial and Industrial Waste*

Both mixed and segregated commercial waste is collected from commercial sources. Commercial waste rich in recyclables (paper, cardboard, glass, metal, green waste and wood) is delivered by both permitted third party hauliers and by Greenstar vehicles. Plastic, card and paper are baled and stored, prior to transfer to a suitable permitted/licensed off-site recycling outlet. Timber recovered from the mixed C&I waste stream and that delivered to the facility as a single waste stream is shredded onsite. Biodegradable wastes suitable for composting are sent to an offsite composting facility. The remaining non-recyclable material is bulked and sent to appropriate licensed disposal facilities.

#### *C&D Waste*

Waste loads include mixed construction and demolition wastes and soil and stone. The material arrives in skips of varying sizes. The loads are inspected, with any plasterboard removed and placed in a dedicated skip located inside the building, and the remainder off loaded into an external C&D bay. The majority of the incoming waste is recovered and sent off-site either for re-use or recycling. The non-recyclable materials are transferred to a licensed landfill.

#### *Municipal Waste*

All mixed MSW is handled inside the building. The incoming waste is deposited on the floor of the building and is then compacted, for removal and disposal at an approved

residual waste facility or re-directed to the onsite baler for the production of wrapped bales of waste material for export to approved recovery facilities.

### *Timber Shredding*

Untreated timber pallets and untreated construction timbers were shredded in the northern area of the yard and stored in a shred timber bay prior to dispatch either for use as a compost bulking/aeration agent, or as raw material for chipboard/MDF manufacturers. This process was discontinued in 2012.

### 2.2.2 *Plant List*

A list of the plant in use at the facility is given in Table 2.1. The plant provides 100% duty and 50% standby capacity.

**Table 2.1** Existing Plant

| <b>No.</b> | <b>Plant</b>             | <b>Operational Capacity tpd</b> | <b>Standby Capacity tpd</b> |
|------------|--------------------------|---------------------------------|-----------------------------|
| 1          | 360° case Excavator      | 300                             | 200                         |
| 1          | Volvo Loading Shovel     | 500                             | 350                         |
| 2          | Doppstadt shredders      | 200                             | 150                         |
| 1          | Cardboard baler          | 100                             | 75                          |
| 1          | Waste Baler              | 350                             | 200                         |
| 3          | New Holland tele-porters | 350                             | 200                         |
| 1          | Hyster forklift          | 100                             | 75                          |

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### 3. EMISSION MONITORING

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The monitoring specified in the licence includes surface water, wastewater, groundwater, dust and noise monitoring. The monitoring locations are shown on Figure 3.1. The monitoring results are included in reports submitted to the Agency at quarterly intervals and an overview of the monitoring completed in 2014 is presented in this Section.

#### 3.1 Surface Water Monitoring

Surface water is generated by rainfall on roofs and the paved open yard areas. The run-off is collected and is currently discharged via 1 No. three chambered interceptor to a manmade drain that runs along the eastern site boundary. This drain discharges to the Ballinacurra Creek, which ultimately joins the River Shannon.

The Licence requires surface water monitoring at two discharge points from the oil interceptor (FE1A and FE1B). FE1B is at the overflow point and the only flow occurs during periods of very high rainfall. Following discussions with the Agency in January 2012, the discharge point FE1B was sealed and all discharges from the interceptor are directed through FE1A. Monitoring is also required in the drain upstream (WS9) and downstream (WS10) of the discharge points. The licence requires monthly monitoring of the surface water discharged from the site along with the upstream and downstream locations. Due to periods of dry weather, no sampling was carried out in January, April, June or September 2014.

The monitoring results are included on Tables 3.1 to 3.10. The proposed emission limit value (ELV) for Total Suspended Solids (TSS) was exceeded at the discharge point on one occasion, in November 2014. The Zinc EQS was exceeded at the discharge point on one occasion, also in November 2014. The proposed trigger level for BOD was exceeded on six occasions, in February, March, twice in May, October and December 2014. On each occasion where trigger levels were exceeded, the Agency was notified at the time of the exceedance, along with the Inland Fisheries Board and Limerick City & County Council.



**Table 3.1** Surface Water Monitoring Results – February 2014

| Parameter              | Units    | WS9 - UP | FE1A Discharge | WS10- DOWN | Range 2011 | Trigger* | ELV* | EQS  |
|------------------------|----------|----------|----------------|------------|------------|----------|------|------|
| pH                     | pH units | 7.50     | 6.9            | 7.30       |            | -        | -    | -    |
| BOD                    | mg/l     | 3        | 26             | 6          | 4-106      | -        | 25   | -    |
| Total Suspended Solids | mg/l     | 8        | 23             | 5          | <1-113     | -        | 60   | -    |
| Ammonia Nitrogen       | mg/l     | 0.22     | 1.07           | 0.02       |            | 4        | -    | -    |
| Fats Oils Grease       | mg/l     | <1       | 2.2            | <1         |            | -        | -    | -    |
| Mineral Oils           | mg/l     | <0.001   | <0.001         | <0.001     |            | -        | 5    | 0.01 |
| TOC                    | mg/l     | 3.19     | 16.03          | 4.17       |            | -        | -    | -    |
| Arsenic - dissolved    | ug/l     | 0.46     | 0.6            | 0.44       |            | -        | -    | 25   |
| Cadmium - dissolved    | ug/l     | 0.2      | 0.3            | 0.4        |            | -        | -    | 5    |
| Chromium - dissolved   | ug/l     | 1        | 1              | 2          |            | -        | -    | 30   |
| Copper - dissolved     | ug/l     | 6        | 4              | 3          |            | -        | -    | 30   |
| Mercury - dissolved    | ug/l     | 0.018    | <0.013         | <0.013     |            | -        | -    | 1    |
| Nickel - dissolved     | ug/l     | <2       | 3.4            | 2.2        |            | -        | -    | 20   |
| Lead - dissolved       | ug/l     | 1.2      | 2.50           | 1.2        |            | -        | -    | 10   |
| Zinc - dissolved       | ug/l     | 23       | 44             | 14         |            | -        | -    | 100  |

\* ELV applies to discharges – FE1A only.

**Table 3.2** Surface Water Monitoring Results – March 2014

| Parameter              | Units    | WS9 - UP | FE1A Discharge | WS10- DOWN | Range 2011 | Trigger* | ELV* | EQS  |
|------------------------|----------|----------|----------------|------------|------------|----------|------|------|
| pH                     | pH units | 7.46     | 6.64           | 8.09       |            | -        | -    | -    |
| BOD                    | mg/l     | <2       | 51             | 4          | 4-106      | -        | 25   | -    |
| Total Suspended Solids | mg/l     | 4        | 24             | 4          | <1-113     | -        | 60   | -    |
| Ammonia Nitrogen       | mg/l     | 0.42     | 0.49           | 0.58       |            | 4        | -    | -    |
| Fats Oils Grease       | mg/l     | <1       | <1             | <1         |            | -        | -    | -    |
| Mineral Oils           | ug/l     | <0.001   | <0.001         | <0.001     |            | -        | 5    | 0.01 |
| TOC                    | mg/l     | 4.95     | 16.24          | 5.25       |            | -        | -    | -    |
| Arsenic - dissolved    | ug/l     | 0.73     | 0.59           | 0.71       |            | -        | -    | 25   |
| Cadmium - dissolved    | ug/l     | 0.2      | 0.2            | 0.2        |            | -        | -    | 5    |
| Chromium - dissolved   | ug/l     | 1        | 1              | 1          |            | -        | -    | 30   |
| Copper - dissolved     | ug/l     | <5       | <5             | <5         |            | -        | -    | 30   |
| Mercury - dissolved    | ug/l     | 0.084    | 0.18           | 0.052      |            | -        | -    | 1    |
| Nickel - dissolved     | ug/l     | <2       | 2.1            | <2         |            | -        | -    | 20   |
| Lead - dissolved       | ug/l     | 1.1      | <0.8           | <0.8       |            | -        | -    | 10   |
| Zinc - dissolved       | ug/l     | 9        | 15             | 7          |            | -        | -    | 100  |

\* ELV applies to discharges – FE1A only.

**Table 3.3** Surface Water Monitoring Results – April 2014

| Parameter              | Units    | WS9 - UP | FE1A Discharge | WS10-DOWN | Range 2011 | Trigger * | ELV* | EQS  |
|------------------------|----------|----------|----------------|-----------|------------|-----------|------|------|
| pH                     | pH units | 7.61     | 6.96           | 7.72      | -          | -         | -    | -    |
| BOD                    | mg/l     | <1       | 25             | <1        | 4-106      | -         | 25   | -    |
| Total Suspended Solids | mg/l     | 63       | 29             | 20        | <1-113     | -         | 60   | -    |
| Ammonia Nitrogen       | mg/l     | 0.12     | 5.46           | 0.38      | -          | 4         | -    | -    |
| Fats Oils Grease       | mg/l     | <0.01    | <0.01          | <0.01     | -          | -         | -    | -    |
| Mineral Oils           | ug/l     | <0001    | <0.01          | <0.01     | -          | -         | 5    | 0.01 |
| TOC                    | mg/l     | 6        | 14             | 6         | -          | -         | -    | -    |
| Arsenic - dissolved    | ug/l     | <2.5     | <2.5           | <2.5      | -          | -         | -    | 25   |
| Cadmium - dissolved    | ug/l     | <0.5     | <0.5           | <0.5      | -          | -         | -    | 5    |
| Chromium - dissolved   | ug/l     | <1.5     | <1.5           | <1.5      | -          | -         | -    | 30   |
| Copper - dissolved     | ug/l     | <7       | <7             | <7        | -          | -         | -    | 30   |
| Mercury - dissolved    | ug/l     | <1       | <1             | <1        | -          | -         | -    | 1    |
| Nickel - dissolved     | ug/l     | <2       | <2             | <2        | -          | -         | -    | 20   |
| Lead - dissolved       | ug/l     | <5       | <5             | <5        | -          | -         | -    | 10   |
| Zinc - dissolved       | ug/l     | <3       | 4              | <3        | -          | -         | -    | 100  |

\* ELV applies to discharges – FE1A only.

**Table 3.4** Surface Water Monitoring Results – May 2014

| Parameter              | Units    | WS9 - UP | FE1A Discharge | WS10-DOWN | Range 2011 | Trigger * | ELV* | EQS  |
|------------------------|----------|----------|----------------|-----------|------------|-----------|------|------|
| pH                     | pH units | 7.67     | 6.9            | 7.49      | -          | -         | -    | -    |
| BOD                    | mg/l     | 5        | 63             | 6         | 4-106      | -         | 25   | -    |
| Total Suspended Solids | mg/l     | 3        | 32             | 6         | <1-113     | -         | 60   | -    |
| Ammonia Nitrogen       | mg/l     | 0.34     | 0.69           | 0.43      | -          | 4         | -    | -    |
| Fats Oils Grease       | mg/l     | <1       | <1             | <1        | -          | -         | -    | -    |
| Mineral Oils           | ug/l     | <0.001   | <0.001         | <0.001    | -          | -         | 5    | 0.01 |
| TOC                    | mg/l     | 6.92     | 21.7           | 8.03      | -          | -         | -    | -    |
| Arsenic - dissolved    | ug/l     | 0.7      | 0.590          | 0.7       | -          | -         | -    | 25   |
| Cadmium - dissolved    | ug/l     | 0.5      | 0.6            | 0.4       | -          | -         | -    | 5    |
| Chromium - dissolved   | ug/l     | 1        | 3              | 1         | -          | -         | -    | 30   |
| Copper - dissolved     | ug/l     | <5       | 6              | <5        | -          | -         | -    | 30   |
| Mercury - dissolved    | ug/l     | <0.013   | <0.013         | <0.013    | -          | -         | -    | 1    |
| Nickel - dissolved     | ug/l     | 2.2      | 5.2            | 2.4       | -          | -         | -    | 20   |
| Lead - dissolved       | ug/l     | 1        | 2.9            | <0.8      | -          | -         | -    | 10   |
| Zinc - dissolved       | ug/l     | 14       | 45             | 11        | -          | -         | -    | 100  |

\* ELV & Trigger applies to discharges – FE1A only.

**Table 3.5** Surface Water Monitoring Results – May 2014 (EPA Visit)

| Parameter              | Units    | FE1A Discharge | Range 2011 | Trigger * | ELV* | EQS  |
|------------------------|----------|----------------|------------|-----------|------|------|
| pH                     | pH units | 6.7            | -          | -         | -    | -    |
| BOD                    | mg/l     | 83             | 4-106      | -         | 25   | -    |
| Total Suspended Solids | mg/l     | 32             | <1-113     | -         | 60   | -    |
| Ammonia Nitrogen       | mg/l     | 2.02           | -          | 4         | -    | -    |
| Fats Oils Grease       | mg/l     | <1             | -          | -         | -    | -    |
| Mineral Oils           | ug/l     | <0.001         | -          | -         | 5    | 0.01 |
| TOC                    | mg/l     | 28.46          | -          | -         | -    | -    |
| Arsenic - dissolved    | ug/l     | 0.650          | -          | -         | -    | 25   |
| Cadmium - dissolved    | ug/l     | <0.125         | -          | -         | -    | 5    |
| Chromium - dissolved   | ug/l     | 2              | -          | -         | -    | 30   |
| Copper - dissolved     | ug/l     | <5             | -          | -         | -    | 30   |
| Mercury - dissolved    | ug/l     | 0.0140         | -          | -         | -    | 1    |
| Nickel - dissolved     | ug/l     | 4.6            | -          | -         | -    | 20   |
| Lead - dissolved       | ug/l     | <0.8           | -          | -         | -    | 10   |
| Zinc - dissolved       | ug/l     | 24             | -          | -         | -    | 100  |

\* ELV & Trigger applies to discharges – FE1A only.

**Table 3.6** Surface Water Monitoring Results – July 2014

| Parameter              | Units    | WS9 - UP | FE1A Discharge | WS10-DOWN | Range 2011 | Trigger * | ELV* | EQS  |
|------------------------|----------|----------|----------------|-----------|------------|-----------|------|------|
| pH                     | pH units | 7.43     | 7.5            | 7.83      | -          | -         | -    | -    |
| BOD                    | mg/l     | 4        | 5              | 3         | 4-106      | -         | 25   | -    |
| Total Suspended Solids | mg/l     | 4        | 3              | 4         | <1-113     | -         | 60   | -    |
| Ammonia Nitrogen       | mg/l     | 0.28     | 0.1            | 0.3       | -          | 4         | -    | -    |
| Fats Oils Grease       | mg/l     | <1       | <1             | <1        | -          | -         | -    | -    |
| Mineral Oils           | ug/l     | <0.001   | <0.001         | <0.001    | -          | -         | 5    | 0.01 |
| TOC                    | mg/l     | 3.5      | 4.49           | 4.36      | -          | -         | -    | -    |
| Arsenic - dissolved    | ug/l     | 0.83     | 0.75           | 0.79      | -          | -         | -    | 25   |
| Cadmium - dissolved    | ug/l     | 0.4      | 0.3            | 0.3       | -          | -         | -    | 5    |
| Chromium - dissolved   | ug/l     | <0.6     | <0.6           | 1         | -          | -         | -    | 30   |
| Copper - dissolved     | ug/l     | <5       | <5             | <5        | -          | -         | -    | 30   |
| Mercury - dissolved    | ug/l     | <0.0130  | <0.0130        | <0.0130   | -          | -         | -    | 1    |
| Nickel - dissolved     | ug/l     | <2       | 2              | <2        | -          | -         | -    | 20   |
| Lead - dissolved       | ug/l     | <0.8     | <0.8           | 1.2       | -          | -         | -    | 10   |
| Zinc - dissolved       | ug/l     | 2        | 5              | 3         | -          | -         | -    | 100  |

\* ELV & Trigger applies to discharges – FE1A only.

**Table 3.7** Surface Water Monitoring Results – August 2014

| Parameter              | Units    | WS9 - UP | FE1A Discharge | WS10-DOWN | Range 2011 | Trigger * | ELV* | EQS  |
|------------------------|----------|----------|----------------|-----------|------------|-----------|------|------|
| pH                     | pH units | 7.24     | -              | 8.11      | -          | -         | -    | -    |
| BOD                    | mg/l     | 13       | -              | 12        | 4-106      | -         | 25   | -    |
| Total Suspended Solids | mg/l     | 10       | -              | 9         | <1-113     | -         | 60   | -    |
| Ammonia Nitrogen       | mg/l     | 0.47     | -              | 0.95      | -          | 4         | -    | -    |
| Fats Oils Grease       | mg/l     | <1       | -              | <1        | -          | -         | -    | -    |
| Mineral Oils           | ug/l     | <0.001   | -              | <0.001    | -          | -         | 5    | 0.01 |
| TOC                    | mg/l     | 6.86     | -              | 6.96      | -          | -         | -    | -    |
| Arsenic - dissolved    | ug/l     | 0.96     | -              | 0.27      | -          | -         | -    | 25   |
| Cadmium - dissolved    | ug/l     | 0.5      | -              | 0.4       | -          | -         | -    | 5    |
| Chromium - dissolved   | ug/l     | 1        | -              | 1         | -          | -         | -    | 30   |
| Copper - dissolved     | ug/l     | 8        | -              | <5        | -          | -         | -    | 30   |
| Mercury - dissolved    | ug/l     | <0.023   | -              | 0.27      | -          | -         | -    | 1    |
| Nickel - dissolved     | ug/l     | 2.2      | -              | <2        | -          | -         | -    | 20   |
| Lead - dissolved       | ug/l     | 1.2      | -              | 0.9       | -          | -         | -    | 10   |
| Zinc - dissolved       | ug/l     | 2        | -              | 3         | -          | -         | -    | 100  |

FE1A Not sampled as no surface water was discharging from site at time of sampling.

\* ELV & Trigger applies to discharges – FE1A only.

**Table 3.8** Surface Water Monitoring Results – October 2014

| Parameter              | Units    | WS9 - UP | FE1A Discharge | WS10-DOWN | Range 2011 | Trigger * | ELV* | EQS  |
|------------------------|----------|----------|----------------|-----------|------------|-----------|------|------|
| pH                     | pH units | 7.491    | 6.754          | 7.265     | -          | -         | -    | -    |
| BOD                    | mg/l     | 3        | 122            | 14        | 4-106      | -         | 25   | -    |
| Total Suspended Solids | mg/l     | 7        | 46             | 28        | <1-113     | -         | 60   | -    |
| Ammonia Nitrogen       | mg/l     | 0.63     | 1.2            | 1.07      | -          | 4         | -    | -    |
| Fats Oils Grease       | mg/l     | <1       | 1.4            | <1        | -          | -         | -    | -    |
| Mineral Oils           | ug/l     | <0.001   | <0.001         | <0.001    | -          | -         | 5    | 0.01 |
| TOC                    | mg/l     | 7.43     | 45.84          | 10.55     | -          | -         | -    | -    |
| Arsenic - dissolved    | ug/l     | 0.001    | 0.001          | <0        | -          | -         | -    | 25   |
| Cadmium - dissolved    | ug/l     | 0.3      | 0.2            | 0.3       | -          | -         | -    | 5    |
| Chromium - dissolved   | ug/l     | <0.6     | 2              | 1         | -          | -         | -    | 30   |
| Copper - dissolved     | ug/l     | <5       | <5             | <5        | -          | -         | -    | 30   |
| Mercury - dissolved    | ug/l     | <0.0001  | <0.0001        | <0.0001   | -          | -         | -    | 1    |
| Nickel - dissolved     | ug/l     | 2.8      | 5.4            | 2.7       | -          | -         | -    | 20   |
| Lead - dissolved       | ug/l     | <0.8     | 3.5            | 1.2       | -          | -         | -    | 10   |
| Zinc - dissolved       | ug/l     | <1.9     | 106            | 4         | -          | -         | -    | 100  |

\* ELV & Trigger applies to discharges – FE1A only.

**Table 3.9** Surface Water Monitoring Results – 13<sup>th</sup> November 2014

| Parameter              | Units    | WS9 - UP | FE1A Discharge | WS10-DOWN | Range 2011 | Trigger* | ELV* | EQS  |
|------------------------|----------|----------|----------------|-----------|------------|----------|------|------|
| pH                     | pH units | 7.79     | 7.29           | 7.67      | -          | -        | -    | -    |
| BOD                    | mg/l     | 2        | 22             | 3         | 4-106      | -        | 25   | -    |
| Total Suspended Solids | mg/l     | 57       | 93             | 37        | <1-113     | -        | 60   | -    |
| Ammonia Nitrogen       | mg/l     | 0.16     | 1.27           | 0.18      | -          | 4        | -    | -    |
| Fats Oils Grease       | mg/l     | <0.01    | <0.01          | <0.01     | -          | -        | -    | -    |
| Mineral Oils           | ug/l     | <0.01    | <0.01          | <0.01     | -          | -        | 5    | 0.01 |
| TOC                    | mg/l     | <2       | 8              | <2        | -          | -        | -    | -    |
| Arsenic - dissolved    | ug/l     | <2.5     | <2.5           | <2.5      | -          | -        | -    | 25   |
| Cadmium - dissolved    | ug/l     | <0.5     | <0.5           | <0.5      | -          | -        | -    | 5    |
| Chromium - dissolved   | ug/l     | <1.5     | <1.5           | <1.5      | -          | -        | -    | 30   |
| Copper - dissolved     | ug/l     | <7       | <7             | <7        | -          | -        | -    | 30   |
| Mercury - dissolved    | ug/l     | <1       | <1             | <1        | -          | -        | -    | 1    |
| Nickel - dissolved     | ug/l     | <2       | <2             | <2        | -          | -        | -    | 20   |
| Lead - dissolved       | ug/l     | <5       | <5             | <5        | -          | -        | -    | 10   |
| Zinc - dissolved       | ug/l     | 12       | 54             | 18        | -          | -        | -    | 100  |

\* ELV & Trigger applies to discharges – FE1A only.

**Table 3.10** Surface Water Monitoring Results – 19<sup>th</sup> December 2014

| Parameter              | Units    | WS9 - UP | FE1A Discharge | WS10-DOWN | Range 2011 | Trigger* | ELV* | EQS  |
|------------------------|----------|----------|----------------|-----------|------------|----------|------|------|
| pH                     | pH units | 7.01     | 6.59           | 7.16      | -          | -        | -    | -    |
| BOD                    | mg/l     | 39       | 50             | 35        | 4-106      | -        | 25   | -    |
| Total Suspended Solids | mg/l     | 6        | 44             | 12        | <1-113     | -        | 60   | -    |
| Ammonia Nitrogen       | mg/l     | 1.62     | 0.48           | 0.81      | -          | 4        | -    | -    |
| Fats Oils Grease       | mg/l     | <1       | <1             | <1        | -          | -        | -    | -    |
| Mineral Oils           | mg/l     | <0.001   | <0.001         | <0.001    | -          | -        | 5    | 0.01 |
| TOC                    | mg/l     | 6.06     | 34.08          | 4.59      | -          | -        | -    | -    |
| Arsenic - dissolved    | ug/l     | 0.710    | 0.660          | 0.560     | -          | -        | -    | 25   |
| Cadmium - dissolved    | ug/l     | 1.8      | 0.4            | 0.4       | -          | -        | -    | 5    |
| Chromium - dissolved   | ug/l     | 2        | 1              | <0.6      | -          | -        | -    | 30   |
| Copper - dissolved     | ug/l     | <5       | <5             | <5        | -          | -        | -    | 30   |
| Mercury - dissolved    | ug/l     | 0.0210   | <0.0130        | 0.0140    | -          | -        | -    | 1    |
| Nickel - dissolved     | ug/l     | 2.3      | 2              | <2        | -          | -        | -    | 20   |
| Lead - dissolved       | ug/l     | 1.5      | 2              | <0.8      | -          | -        | -    | 10   |
| Zinc - dissolved       | ug/l     | 45       | 15             | 11        | -          | -        | -    | 100  |

\* ELV & Trigger applies to discharges – FE1A only.

### 3.2 Foul water Monitoring

Foul water is treated in the on-site Klargestor treatment plant, with the treated effluent discharged to an on-site percolation area. Following a request by the Agency in December 2011 a detailed Waste Water Treatment System Risk Assessment was completed by IE Consulting Engineers in 2012. The report showed that the average daily treated effluent discharge to the percolation area is 0.4m<sup>3</sup>/day, which is a relatively low volume of discharge.

When rainfall over the percolation area is taken into consideration, the total hydraulic loading is 0.483m<sup>3</sup>/day.

Foul water monitoring is required at two monitoring locations - FE2a which is the discharge from the treatment plant and FE2b which is the truckwash discharge. The truckwash has not been used since Q3 2010 and therefore no samples were collected at FE2b in the reporting period.

The monitoring results are included on Table 3.11. There are no ELVs set in the licence and for comparative purposes the table includes the performance standards set in the EPA Waste Water Treatment Manual Guidelines.

Throughout the year there were exceedances of the performance standards for BOD (4 occasions), TSS (5 occasions) and Ammoniacal Nitrogen (3 occasions). In July, the standards were significantly exceeded and Greenstar immediately commenced a program of works to repair and service the treatment plant.

The treated effluent discharges to ground and it is understood that the percolation area is not categorised as being located in a nutritionally sensitive area.

Subject to final wayleave agreement from Limerick City and County Council, it is intended to construct a connecting pipeline to the nearby municipal waste water treatment plant. Following this, waste water from the facility will be discharged to the municipal plant and the on-site system will be decommissioned.

**Table 3.11 – Foul Water Monitoring Results 2014**

| Parameter              | Units    | March 2014 | April 2014 | July 2014 | August 2014 | October 2014 | November 2014 | Performance Standards |
|------------------------|----------|------------|------------|-----------|-------------|--------------|---------------|-----------------------|
| pH                     | pH units | 7.74       | 7.45       | 7.6       | 8.04        | 7.989        | 7.99**        | -                     |
| BOD                    | mg/l     | 28         | 6          | 1,257     | 70          | 27           | 19            | 20                    |
| Total Suspended Solids | mg/l     | 32         | 57         | 610       | 67          | 30           | 203           | 30                    |
| Ammonia Nitrogen       | mg/l     | 14.53      | 40.87      | 184.06    | 82.55       | 14.50        | 12.05         | 20                    |
| Fats Oils & Greases    | mg/l     | <1         | <0.01      | 59.4      | <1          | <1           | <0.01         | -                     |
| Sulphate               | mg/l     | 83.6       | 103.98     | 53.4      | 80.1        | 42.0         | 14.62         | -                     |
| Total Phosphorous      | mg/l     | 0.050      | 4.681      | 16.5      | 7.86        | 4.69         | 4.873         | -                     |
| Total Nitrogen         | mg/l     | 33.77      | 53.5       | 190.66    | 85.55       | 25.76        | 25.2          | -                     |
| Nitrate                | mg/l     | 11.16      | 0.4        | 0.14      | 0.03        | 29.9         | 1.3           | -                     |
| Nitrite                | mg/l     | 3.26       | <0.2       | <2        | <2          | 5.92         | <0.02         | -                     |
| COD                    | mg/l     | 84         | 60         | 2,358     | 239         | 142          | 78            | -                     |

### 3.3 Groundwater Monitoring

Groundwater monitoring is carried out bi-annually at three wells, GWM1, GWM2 and GWM3. GWM1 is located close to the entrance to the dry recyclables recycling building, GWM2 is at the northern site boundary and is downgradient of site activities. GWM3 is outside the operational area and is upgradient of site activities.

There are no ELVs or Trigger Levels set in the Licence. For interpretation purposes the results had, up to Q2 2011, been compared to the Interim Guideline Values (IGV) for groundwater published by the Agency. Since then, the results are also compared to the Threshold Values for groundwater (GTV) quality introduced by the European Communities Environmental Objectives (Groundwater) Regulations 2010 S.I. No 9 of 2010. The IGV levels represent typical background or unpolluted conditions, however, levels higher than the IGV can occur naturally, depending on the local geological and hydrogeological conditions. While the Threshold Values are more appropriate for large scale abstraction wells used for potable supply, they can be used to assess the significance of contamination where present in groundwater. Because not all parameters monitored have been assigned Threshold Values, the relevant IGV continue to be used for comparative purposes.

In October 2013, OCM on behalf of GES submitted proposed groundwater trigger levels for the Agency's approval. Although the proposed trigger levels have not yet been approved they are included for information purposes in Table 3.12. The monitoring results are summarised in Tables 3.13 and 3.14.

In January 2013, the Agency amended the Licence to insert Condition 7.9 of the Licence requiring Greenstar, in line with the criteria set out in the Guidance on the Authorisation of Discharges to Groundwater, published by the Agency, to review the most recent hydrogeological assessment report for the installation and, if relevant, arrange for the assessment of the installation by an appropriately qualified consultant/professional to demonstrate compliance with the European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended. A hydrogeological assessment of the site, which included the installation of three groundwater monitoring wells and rising/falling head tests was initially carried out in 2002; however a report on these works is not available. Greenstar appointed O'Callaghan Moran & Associates (OCM) in 2014 to assess the installation to demonstrate compliance with the Groundwater Regulations. A report was submitted to the Agency in June 2014.

**Table 3.12** Proposed Trigger Levels

| <b>Borehole</b> | <b>Electrical Conductivity Proposed Trigger Level (mS/cm)</b> | <b>Ammoniacal Nitrogen Proposed Trigger Level (mg/l)</b> |
|-----------------|---|--|
| GWM1            | 1.140   | 11.89  |
| GWM2            | 1.790   | 10.31  |
| GWM3            | 1.120   | 1.87   |

**Table 3.13** Groundwater Monitoring Results – April 2014

| Parameter            | Units | GWM1  | GWM2  | GWM3  | GTV   | IGV  |
|----------------------|-------|-------|-------|-------|-------|------|
| BOD                  | mg/l  | 6     | 2     | <1    | -     | -    |
| TSS                  | mg/l  | 2,704 | 2,774 | 700   | -     | -    |
| Dissolved Oxygen     | mg/l  | 5     | 5     | 7     | -     | NAC  |
| Oils, Fats & Greases | mg/l  | <0.1  | <0.1  | <0.1  | -     | -    |
| Total Phosphorus     | mg/l  | 2.151 | 2.172 | 0.265 | -     | -    |
| Ammoniacal Nitrogen  | mg/l  | 12.74 | 2.4   | 0.71  | 0.175 | -    |
| Conductivity         | mS/cm | 1.414 | 1.055 | 1.688 | 1.875 | -    |
| DRO                  | mg/l  | <0.01 | <0.01 | <0.01 | -     | 0.01 |
| TPH                  | mg/l  | <0.01 | <0.01 | <0.01 | -     | 0.01 |
| Undecane (C10-C12)   | mg/l  | <0.01 | <0.01 | <0.01 | -     | -    |

**Table 3.14** Groundwater Monitoring Results – November 2014

| Parameter            | Units | GWM1  | GWM2  | GWM3  | GTV   | IGV  |
|----------------------|-------|-------|-------|-------|-------|------|
| BOD                  | mg/l  | 6     | 6     | <1    | -     | -    |
| TSS                  | mg/l  | 3,596 | 1,386 | 861   | -     | -    |
| Dissolved Oxygen     | mg/l  | 5     | 6     | 4     | -     | NAC  |
| Oils, Fats & Greases | mg/l  | <0.01 | <0.01 | <0.01 | -     | -    |
| Total Phosphorus     | mg/l  | 3.248 | 1.383 | 0.771 | -     | -    |
| Ammoniacal Nitrogen  | mg/l  | 9.02  | 7     | 0.73  | 0.175 | -    |
| Conductivity         | mS/cm | 1.246 | 1.402 | 0.828 | 1.875 | -    |
| Mineral Oil          | mg/l  | <0.01 | <0.01 | <0.01 | -     | 0.01 |
| EPH/DRO              | mg/l  | <0.01 | <0.01 | <0.01 | -     | 0.01 |
| Undecane (C10-C12)   | mg/l  | <0.01 | <0.01 | <0.01 | -     | -    |

### 3.3.1 Groundwater Discussion

The results are generally consistent with those of previous monitoring events which have found elevated levels of ammoniacal nitrogen at each location.

Although hydrocarbons occurred intermittently at GWM1 and GWM3 in 2013, none were identified in 2014. The reason for the low levels of hydrocarbons detected at GWM1 and GWM3 in 2013 is unknown. There have been no known incidents at the facility likely to have caused contamination.

## 3.4 Noise Monitoring

The annual noise survey was carried out on the 14<sup>th</sup> May 2014 at three onsite boundary monitoring (NI1 – NI3) locations and one offsite location (NI4). The survey was conducted when the site was fully operational and confirmed that noise emissions fully complied with the licence conditions and that the facility is not impacting negatively on the nearest sensitive receptors. A summary of the noise results is shown on Table 3.15.

Noise limits set out in the waste licence are considered applicable to Noise Sensitive Locations (NSLs). An inspection of the nearest NSLs during the survey indicated that facility



operations were not audible, and thus lower than the 55 dB daytime noise limit. The three onsite locations are dominated by facility activities but there are no NSLs in the vicinity of these locations. At NI4, GES emissions were not audible.

**Table 3.15** Noise Monitoring Results 2014

| Station | Time      | L <sub>Aeq</sub> 30<br>min dB | L <sub>AF10</sub> 30<br>min dB | L <sub>AF90</sub> 30<br>min dB | Specific<br>level*<br>dB | Noise audible   |
|---------|-----------|-------------------------------|--------------------------------|--------------------------------|--------------------------|---|
| NI1     | 0903-0933 | 60                            | 63                             | 53                             | 60                       | Telescopic loaders involved in bale export operation continuously clearly audible and dominant. Loader and yard sweeper truck also audible when operating at N end of yard. No other noise audible apart from local birdsong. |
| NI2     | 0937-1007 | 58                            | 56                             | 49                             | 58                       | Telescopic loaders involved in bale export operation continuously clearly audible and dominant. Yard sweeper truck also audible when operating at nearest end of yard, particularly 0954-0957. No other noise audible.        |
| NI3     | 0830-0900 | 58                            | 59                             | 53                             | 58                       | Cardboard baler and conveyor plant audible in nearest building, in addition to mobile plant in building. Yard sweeper truck and truck movements audible in main yard. No other noise audible.                                 |
| NI4     | 1016-1046 | 71                            | 74                             | 61                             | <<61                     | No site emissions audible. Passing road traffic continuously present, dominant and intrusive. No other noise audible.   |

\*Specific level: L<sub>Aeq</sub> level considered attributable to facility during interval, determined using real time assessment, field notes, time history profiles, statistical analysis, frequency spectra, spectral statistics and near field correction if applicable.

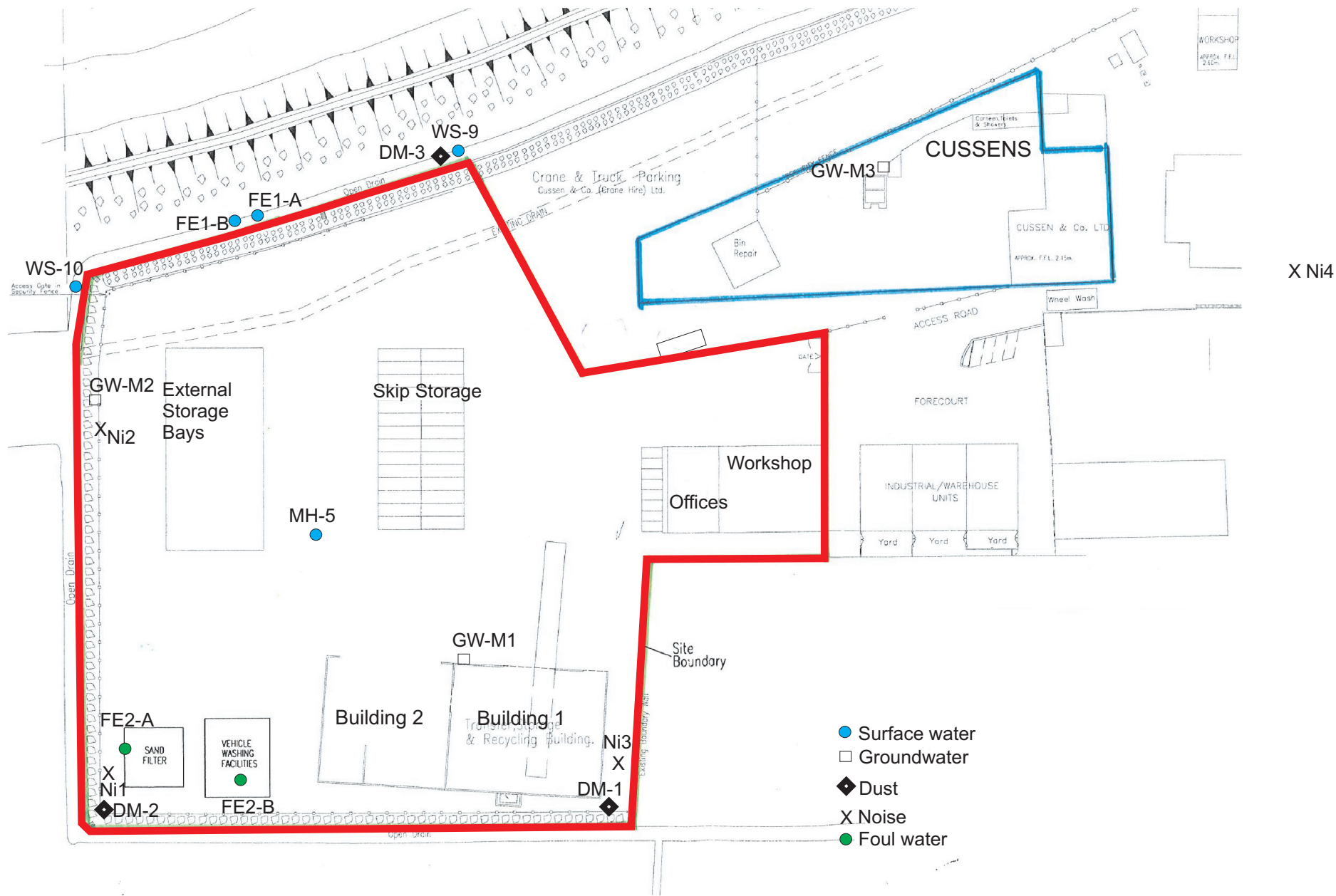
### 3.5 Dust Monitoring

Dust monitoring was carried out on two occasions (between May and September as required by the licence) at three on-site locations (DM1, DM2 and DM3) in May and August 2014. As required by the licence, a third monitoring event for outside this period (October – April) was conducted in December 2014. The results of the monitoring are included on Table 3.16.

The dust emission limit (350 mg/m<sup>2</sup>/day) was not exceeded at any monitoring location during the monitoring period.

**Table 3.16** Dust Monitoring Results 2014

| Dust Emission<br>(mg/m <sup>2</sup> /day) | May 2014 | August 2014 | December<br>2014 | Emission<br>Limit        |
|---|----------|-------------|------------------|--------------------------|
| Sample Location                           | 30 Days  | 30 Days     | 33 Days          | (mg/m <sup>2</sup> /day) |
| DM1                                       | 73.3     | 68.9        | 59.2             | 350                      |
| DM2                                       | 42.3     | 185.4       | 74.1             | 350                      |
| DM3                                       | 57.2     | 237.4       | 27.4             | 350                      |



- Surface water
- Groundwater
- ◆ Dust
- X Noise
- Foul water



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CLIENT  
**Greenstar Environmental Services Ltd.**

TITLE  
**Monitoring Locations  
 Limerick W0082-02**

FIGURE NUMBER  
**3.1**

Scale  
 Not To Scale

Revision  
**A**

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## 4. SITE DEVELOPMENT WORKS

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### 4.1 Specified Engineering Works (SEW)

No Specified Engineering Works were completed during 2014 however the following structural improvement was completed.

- Install of entrance barrier and upgrade to site fencing.

### 4.2 Summary of Resource & Energy Consumption

Table 4.1 presents an estimate of the resources used on-site during the reporting period and for comparative purposes the volumes for 2012 and 2013.

**Table 4.1** Estimate of Resources Used On-Site 2012, 2013 and 2014

| Resources      | Quantities 2014      | Quantities 2013       | Quantities 2012      |
|----------------|----------------------|-----------------------|----------------------|
| Diesel (green) | 82,432 litres        | 69,608 litres         | 60,000 litres        |
| Electricity    | 298,451 kwh          | 126,266 kwh           | 113,567 kwh          |
| Hydraulic Oil  | 3,000 Litres         | 4,500 litres          | 4,500 litres         |
| Engine Oil     | 1,000 Litres         | 1,000 litres          | 1,500 litres         |
| Mains Water    | 12,178m <sup>3</sup> | 11,873 m <sup>3</sup> | 8,200 m <sup>3</sup> |

### 4.3 Bund Integrity & Pipeline Testing

The Licence was Technically Amended on February 2<sup>nd</sup> 2011 and now includes condition 3.11.5 which states that the integrity testing of all underground pipelines and tanks must be carried out every 3 years. A new covered bund was installed in August 2013 around the diesel storage tank at the site and was tested immediately prior to installation. A separate stand alone bunded chemical store which is used for the storage of miscellaneous potentially hazardous materials (oil drums, paint cans etc) and quarantined wastes was also installed at the site in September 2013 Both were tested and passed fit for purpose and will be tested again in 2016.

The integrity of the surface water drainage system including the interceptor was assessed through a CCTV survey in 2012. Defects were subsequently addressed through a range of

civil works completed in May 2012. Further CCTV surveying of the surface water and foul water drains was again completed in November 2013 and the following works were completed in 2014.

- Surface water gullies jet-washed and cleaned in February and September 2014
- Klargestor de-sludged and cleaned in March and August 2014
- Interceptor de-sludged and cleaned in April 2014.

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## **5. WASTE RECEIVED AND CONSIGNED FROM THE FACILITY**

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Table 5.1 shows the quantities of wastes accepted and consigned for the reporting period. A more detailed description of the wastes received and consigned in 2014 is presented in the PRTR submission in Appendix 1.

The total quantity of waste received was 99,646.21 tonnes. For comparative purposes the amounts of waste received and consigned from 2008 to 2014 is presented in Table 5.2. The total waste consigned was 98,699.1 tonnes. The difference (947.11 tonnes) remained onsite at the end of 2014 pending removal offsite in 2015.

All the wastes consigned from the site went to authorised recovery and disposal facilities.

**Table 5.1** Waste Received & Consigned 2014

| <b>EWC</b> | <b>Description</b>  | <b>Waste In</b>  | <b>Waste Out</b>  |
|------------|---|------------------|-------------------|
| 15 01 01   | Paper & cardboard packaging   | 4725.395         | 5,047.148         |
| 15 01 02   | Plastic packaging   | 375.6            | 279.98            |
| 15 01 03   | Wooden packaging  |                  | 37.98             |
| 15 01 04   | Metallic packaging  | 25.24            |                   |
| 15 01 06   | Mixed packaging   | 1509.77          | 813.55            |
| 15 01 07   | Glass Packaging   |                  | 24.6              |
| 13 05 03   | Interceptor sludges   | 30.84            |                   |
| 16 01 03   | End of Life Tyres   |                  | 4.42              |
| 16 06 01   | Lead Batteries  |                  | 0.397             |
| 17 01 07   | Mixture of concrete, bricks, tiles and ceramics   | 246.26           | 3524.76           |
| 17 02 03   | Plastic   | 18.98            |                   |
| 17 05 04   | Soil & stones   | 30.4             |                   |
| 17 08 02   | Gypsum-based construction materials   | 0.68             |                   |
| 17 09 04   | Mixed construction and demolition wastes  | 3200.976         | 67.76             |
| 18 01 04   | Wastes whose collection and disposal is not subject to special requirements in order to prevent infection | 15.06            |                   |
| 19 05 02   | Non-composted fraction of animal and vegetable waste  | 3.28             |                   |
| 19 09 02   | Sludges from water clarification  | 515.92           | 474.68            |
| 19 12 07   | Wood  | 25.08            |                   |
| 19 12 09   | Minerals  | 58.94            |                   |
| 19 12 12   | Other wastes  | 784.72           | 1998.23           |
| 20 01 01   | Paper & cardboard   | 1470.9           | 669.14            |
| 20 01 02   | Glass   | 248.28           | 189.72            |
| 20 01 08   | Biodegradable kitchen and canteen waste   | 3462.515         | 3303.74           |
| 20 01 35   | Discarded electrical and electronic equipment   | 7.7              |                   |
| 20 01 36   | Discarded electrical and electronic equipment   |                  |                   |
| 20 01 38   | Wood  | 1173.02          | 1168.58           |
| 20 01 39   | Plastics  | 146.61           |                   |
| 20 01 40   | Metals  | 211.82           | 465.668           |
| 20 02 01   | Biodegradable waste   | 62.5             | 97.34             |
| 20 03 01   | Mixed municipal waste   | 74782.656        | 74056.40          |
| 20 03 03   | Street-cleaning residues  | 1675.79          | 1709.06           |
| 20 03 07   | Bulky waste   | 4835.299         | 4765.90           |
|            | <b>Total Received</b>   | <b>99,646.21</b> |                   |
|            | <b>Total Consigned</b>  |                  | <b>98,699.10</b>  |
|            | <b>Disposal</b>   |                  | <b>6,192.40</b>   |
|            | <b>Recovery</b>   |                  | <b>92,506.683</b> |
|            | <b>Recovery Rate</b>  |                  | <b>93.73%</b>     |

**Table 5.3** Waste Received & Consigned

|                        | <b>2013</b> | <b>2012</b> | <b>2011</b> | <b>2010</b> | <b>2009</b> | <b>2008</b> |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Total Received</b>  | 87,928      | 55,992      | 32,550      | 34,835      | 42,536      | 58,203      |
| <b>Total Consigned</b> | 88,345      | 55,430      | 33,335      | 34,476      | 41,547      | 58,654      |

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## **6. ENVIRONMENTAL INCIDENTS AND COMPLAINTS**

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### **6.1 Incidents**

Throughout the year there were occasional exceedances of the performance standards in relation to surface water discharge for BOD (4 occasions), TSS (5 occasions) and Ammoniacal Nitrogen (3 occasions). In total, six incident reports were submitted in 2014.

All exceedances were treated as incidents and reported to the Agency, Limerick City & County Council and Inland Fisheries Ireland.

### **6.2 Register of Complaints**

Greenstar maintains a register of complaints received in accordance with Condition 10.4 of the Licence. No complaints were received during the reporting period.



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## 7. ENVIRONMENTAL DEVELOPMENT & CONTROL

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### 7.1 Environmental Management Programme Report

Greenstar have implemented an Integrated Management System (IMS) in accordance with the requirements of Occupational Health and Safety Assessment Series (OHSAS) 18001:2007 and International Standard Organisation (ISO) 14001:2004 in order to manage the Health, Safety and Environmental performance of their business and to control health and safety risk and to minimise their environmental aspects and impacts.

The IMS has been developed for the achievement of continual improvement taking into account the requirements of the Waste Licence Conditions. Greenstar has prepared and effectively implemented documented procedures and instructions in accordance with the requirements of both the OHSAS 18001:2007 and ISO 14001:2004. The facility is accredited to both standards.

The schedule of Objectives and Targets, including their status for 2014 (Table 7.1), as well as the proposed Objectives and Targets for 2015 (Table 7.2) are presented below. An index of procedures used at the facility is included in Appendix 2.

#### 7.1.1 Site Management Structure

Management and Staffing structure: -

**Name:** Dominic Broadhurst,

**Responsibility:** Operations Manager

**Experience:** 4 years waste management experience; Completed the CIWM-accredited training course in Managing Waste and Waste Licence Compliance.

**Name:** Philip O'Sullivan

**Responsibility:** Yard Supervisor

**Experience:** 6 years waste management experience; Currently undertaking a CIWM - accredited Waste Management Compliance course.

#### 7.1.2 Staff Training

Staff training carried out during the year included environmental awareness training to key site staff as well as regular tool box talks. Details on staff training for 2014 are available in the facility office.

## **7.2 Environmental Management Programme**

### *7.2.1 Schedule of Objectives 2014*

The objectives that were achieved during this reporting period are outlined in Table 7.1.

### *7.2.2 Schedule of Objectives 2015*

A schedule of targets and objectives for 2015 has been set by the management of the facility. These objectives are outlined in Table 7.2.

## **7.3 Communications Programme**

Greenstar are committed to setting the standard in waste management and ensuring environmental compliance in all operations. In addition, Greenstar's Environmental, Health & Safety Policy makes a specific commitment to ensure that this policy and environmental records are available to the public and interested parties.

To this end Greenstar has drawn up a Communications Programme, which details how members of the public are facilitated in accessing and viewing environmental information at the facility. Members of the public who wish to inspect these files may do so at any reasonable time by making an appointment with the Operations Manager using the telephone number posted on the main facility entrance sign.

## **7.4 Report Financial Provision**

A Closure and Decommissioning Plan and an Environmental Liabilities Risk Assessment (ELRA) including Financial Provision (FP) were submitted to the Agency in 2013 as part of the transfer licence process. The Financial Provision proposed was approved prior to the completion of transfer in March 2014.

**Table 7.1** Objectives and Targets for 2014

| No. | Objective   | Target  | Timescale                    | Responsibility        | Status  |
|-----|---|---|------------------------------|-----------------------|---|
| 1   | <b>Improve Bird Control</b>   | Investigate bird control systems and commission measures.   | Q3-Q4                        | Site Management / EHS | <b>System installed</b>                         |
| 2   | <b>Hydrogeological Assessment</b>   | Complete Hydrogeological Assessment of the site in accordance with Condition 7.9 of Technical Amendment B       | Q2                           | EHS                   | <b>Complete</b>                                 |
| 3   | <b>Decommission Klargester</b>  | Decommission the onsite Klargester WWTP following connection to the municipal sewer.                            | Subject to Council Agreement | EHS                   | <b>Not Started</b>                              |
| 4   | <b>Install entrance barrier and upgrade to site fencing</b>   | Carry out improvements to site entrance including the installation of barriers and maintenance of site fencing. | Q3-Q4                        | Site Management / EHS | <b>Completed</b>                                |
| 5   | <b>IED Licence Submission/determination</b>   | Submit an IED Licence application to increase capacity in line with planning permission                         | Q2                           | Site Management / EHS | <b>Submitted</b>                                |
| 6   | <b>Connect the waste water emissions to the Local Authority WWTP</b>                                | Progress the proposed connection of the foul water to the municipal WWTP  | Q2 – Q3                      | Site Management / EHS | <b>Request for Connection Issued to Council</b> |
| 7   | <b>Development and adoption of Fire Prevention Procedure at the facility</b>                        | Reduce risk of fire and enable early detection  | Q2                           | Site Management / EHS | <b>New system installed</b>                     |
| 8   | <b>Review of Emergency Response Plan to incorporate fire prevention procedure and new structure</b> | Revision of Plan and additional training for site personnel   | Q2                           | Site Management / EHS | <b>Emergency response plan in place.</b>        |
| 9   | <b>Achieve re-certification to ISO 14001 and OHSAS 18001 standard</b>                               | 3 year certification period expires in 2014. The facility requires re-certification.                            | Q3/Q4                        | Site Management / EHS | <b>Certification achieved</b>                   |
| 10  | <b>Develop and maintain traffic management plan at the facility</b>                                 | Review of all on-site traffic management  | Q2/Q3                        | Site Management / EHS | <b>Plan in place</b>                            |

|    |   |  |       |                       |  |
|----|---|--|-------|-----------------------|--|
| 11 | <b>Environmental Training of Facility Staff</b> | Update training presentation and ensure training of key managerial staff | Q2/Q3 | Site Management / EHS | <b>D.Broadhurst completed CIWM accredited course</b> |
| 12 | <b>Site Signage</b>                             | Facility Notice Boards to be replaced to reflect new ownership           | Q1    | Site Management / EHS | <b>Completed</b>                                     |

**Table 7.2** Schedule of Objective and Targets 2015

| No | Objective   | Target   | Responsibility        | Timescale                    |
|----|---|--|-----------------------|------------------------------|
| 1  | <b>Connect the waste water emissions to the Local Authority WWTP</b>                                | Progress the proposed connection of the foul water to the municipal WWTP                     | Site Management / EHS | Q2 – Q3                      |
| 2  | <b>Decommission Klargester</b>  | Decommission the onsite Klargester WWTP following connection to the municipal sewer.         | EHS                   | Subject to Council Agreement |
| 3  | <b>Environmental Training of Facility Staff</b>   | Update training presentation and ensure training of key managerial staff (Philip O’Sullivan) | Site Management / EHS | Q2 - Q3                      |
| 4  | <b>Review of Emergency Response Plan to incorporate fire prevention procedure and new structure</b> | Revision of Plan and additional training for site personnel                                  | Site Management / EHS | Q2                           |
| 5  | <b>Firewater Retention Risk Assessment Report</b>   | Preparation of Report to see if facility requires a fire water retention facility.           | Site Management / EHS | Q4                           |

|           |  |   |                       |         |
|-----------|--|---|-----------------------|---------|
| <b>6</b>  | <b>Document a Preventative Maintenance (PM) plan for the inspection and cleaning of plant &amp; equipment wrt fire</b> | Incorporate into existing Site Inspection Database (EF-10A) and site specific PM plans                            | Site Management / EHS | Q1 - Q2 |
| <b>7</b>  | <b>Document PM plan for all hardstand and drainage infrastructure on site</b>  | Incorporate into existing Site Inspection Database (EF-10A)   | Site Management / EHS | Q1 - Q2 |
| <b>8</b>  | <b>Review EWC codes in active use group wide and implement recommendations at each site</b>                            | Review EWC codes with Finance/WIMS & advise changes to site management  | EHS / Finance / WIMS  | Q2 - Q3 |
| <b>9</b>  | <b>Increase awareness of Odour Management on site group wide</b>   | Specify Odour detection in Site Inspection Database (EF-10A) on a daily basis and generate actions as appropriate | Site Management / EHS | Q1 - Q2 |
| <b>10</b> | <b>Track Energy Usage on site</b>  | Record electricity, gas, water and fuel consumption on site group wide  | Site Management / EHS | Q2 - Q3 |
| <b>11</b> | <b>Installation of Dust Curtains on MRF Building</b>   | Install Dust Curtains on MRF Building   | Site Management / EHS | Q2 - Q3 |

## **7.5 Nuisance Controls**

Greenstar has contracted a vermin control company to carry out nuisance control at the facility. Rentokil Initial Ltd provides and maintains forty bait boxes at the facility and also carries out insect control measures as required. Weekly nuisance and litter inspections are carried out by the Environmental Officer and litter picks are carried out daily. Bird control system was introduced during 2014.

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## **8. OTHER REPORTS**

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### **8.1 European Pollutant Release and Transfer Register Regulation**

Under the European Pollutant Release and Transfer Register Regulation (EC) No. 166/2006 Greenstar are required to submit information annually to the Agency. A copy of the information submitted to the Agency via the web-based data reporting system is included in Appendix 1.

# **APPENDIX 1**

European Pollutant Release and Transfer Register





Environmental Protection Agency

| PRTR# : W0082 | Facility Name : Starrus Eco Holdings Limited (Dock Road) |  
 Filename : W0082\_2014.xls | Return Year : 2014 |

[Guidance to completing the PRTR workbook](#)

# AER Returns Workbook

Version 1.1.18

|                       |      |
|-----------------------|------|
| <b>REFERENCE YEAR</b> | 2014 |
|-----------------------|------|

## 1. FACILITY IDENTIFICATION

|                            |  |
|----------------------------|--|
| Parent Company Name        | Starrus Eco Holdings Limited             |
| Facility Name              | Starrus Eco Holdings Limited (Dock Road) |
| PRTR Identification Number | W0082                                    |
| Licence Number             | W0082-02                                 |

### Classes of Activity

| No. | class_name                           |
|-----|--------------------------------------|
| -   | Refer to PRTR class activities below |

|  |   |
|--|---|
| Address 1                                      | Ballykeefe Townland                           |
| Address 2                                      | Waste Management Section                      |
| Address 3                                      | Dock Road                                     |
| Address 4                                      | Limerick                                      |
|  | Limerick                                      |
| Country  | Ireland                                       |
| Coordinates of Location                        | -8.66662 52.651                               |
| River Basin District                           | IEGBNISH                                      |
| NACE Code                                      | 3821  |
| Main Economic Activity                         | Treatment and disposal of non-hazardous waste |
| <b>AER Returns Contact Name</b>                | Malcolm Dowling                               |
| <b>AER Returns Contact Email Address</b>       | malcolm.dowling@greenstar.ie                  |
| <b>AER Returns Contact Position</b>            | Environmental Executive                       |
| <b>AER Returns Contact Telephone Number</b>    | 01-2947949                                    |
| <b>AER Returns Contact Mobile Phone Number</b> |   |
| <b>AER Returns Contact Fax Number</b>          |   |
| <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>                     | 25  |
| <b>User Feedback/Comments</b>                  |   |
| <b>Web Address</b>                             |   |

## 2. PRTR CLASS ACTIVITIES

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

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

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

4.1 RELEASES TO AIR

[Link to previous years emissions data](#)

| PRTR# : W0082 | Facility Name : Starrus Eco Holdings Limited (Dock Road) | Filename : W0082\_2014.xls | Return Year : 2014 |

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**SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS**

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

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

**SECTION B : REMAINING PRTR POLLUTANTS**

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

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

\* 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:

Landfill:

Starrus Eco Holdings Limited (Dock Road)

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) | 0.0   |             |                            | N/A                                 |
| Methane flared   | 0.0   |             |                            | 0.0 (Total Flaring Capacity)        |
| Methane utilised in engine/s                           | 0.0   |             |                            | 0.0 (Total Utilising Capacity)      |
| Net methane emission (as reported in Section A above)  | 0.0   |             |                            | N/A                                 |

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

| PRTR# : W0082 | Facility Name : Starrus Eco Holdings Limited (Dock Road) | Filename : W0082\_2014.xls | Return Year : 2014 |

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**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# : W0082 | Facility Name : Starrus Eco Holdings Limited (Dock Road) | Filename : W0082\_2

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**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# : W0082 | Facility Name : Starrus Eco Holdings Limited (Dock Road) | Filename : W0082\_2014.xls | Return Year : 2014 |

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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# : W0082 | Facility Name : Starrus Eco Holdings Limited (Dock Road) | Filename : W0082\_2014.xls | Return Year : 2014 |

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Please enter all quantities on this sheet in Tonnes

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| Transfer Destination | European Waste Code | Hazardous | Quantity (Tonnes per Year) | Description of Waste   | Waste Treatment Operation | Method Used |             | Location of Treatment | 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 |                       | Haz Waste : Name and Licence/Permit No of Recover/Disposer          | Non Haz Waste: Address of Recover/Disposer                                       |  |  |
| Within the Country   | 15 01 01            | No        | 717.82                     | paper and cardboard packaging  | R13                       | M           | Weighed     | Offsite in Ireland    | Agnail Ltd,TFS Broker IRE/AG117/11                                  | Ballymacken Industrial Estate,Ballymacken,Portlaois e,Co. Laois,Ireland          |  |  |
| Within the Country   | 15 01 01            | No        | 969.74                     | paper and cardboard packaging  | R13                       | M           | Weighed     | Offsite in Ireland    | Panda Waste Services Ltd,W0140-03                                   | Rathdrinagh,Beauparc,Navan,Co. Meath,Ireland                                     |  |  |
| Within the Country   | 15 01 01            | No        | 1431.44                    | paper and cardboard packaging  | R13                       | M           | Weighed     | Offsite in Ireland    | Agnail Ltd,TFS Broker IRE/AG117/11                                  | Ballymacken Industrial Estate,Ballymacken,Portlaois e,Co. Laois,Ireland          |  |  |
| To Other Countries   | 15 01 01            | No        | 265.66                     | paper and cardboard packaging  | R13                       | M           | Weighed     | Abroad                | Cellmark Asia PTE Ltd,TFS Broker IRE/G180/15                        | .....,China  |  |  |
| To Other Countries   | 15 01 01            | No        | 875.4                      | paper and cardboard packaging  | R13                       | M           | Weighed     | Abroad                | MLM ltd T/A ACN Europe UK,TFS Broker IRE/G022/11                    | Marwin Environmental Trading LTD,TFS Broker IRE/AG027/11                         | Egerton House,Towers Business Park,Wilmslow Road Didsbury,M20 2DX,United Kingdom               |  |
| Within the Country   | 15 01 01            | No        | 370.71                     | paper and cardboard packaging  | R13                       | M           | Weighed     | Offsite in Ireland    | Materia Environment LTD,IRE/AG/161/11                               | .....,Cork,Ireland   |  |  |
| Within the Country   | 15 01 01            | No        | 102.84                     | paper and cardboard packaging  | R13                       | M           | Weighed     | Offsite in Ireland    | Peute Recycling,TFS Broker IRE/G006/11                              | The Kipper House,Scilly ,Kinsale,Co. Cork,Ireland                                |  |  |
| Within the Country   | 15 01 01            | No        | 111.838                    | paper and cardboard packaging  | R13                       | M           | Weighed     | Offsite in Ireland    | Saica Natue Uk Limited,IRE/G277/15                                  | .....,Ireland  |  |  |
| To Other Countries   | 15 01 01            | No        | 201.7                      | paper and cardboard packaging  | R13                       | M           | Weighed     | Abroad                | Bailey Waste Recycling Ltd,WPT-FG-08-0002-01                        | .....,United Kingdom   |  |  |
| Within the Country   | 15 01 02            | No        | 12.0                       | plastic packaging  | R13                       | M           | Weighed     | Offsite in Ireland    | Agnail Ltd,TFS Broker IRE/AG117/11                                  | Rosemount,Ballycoolin,Dublin 11,,Ireland   |  |  |
| Within the Country   | 15 01 02            | No        | 9.72                       | plastic packaging  | R13                       | M           | Weighed     | Offsite in Ireland    | Leinster Environmental,WFP-LH-09-0004-01                            | Ballymacken Industrial Estate,Ballymacken,Portlaois e,Co. Laois,Ireland          |  |  |
| Within the Country   | 15 01 02            | No        | 102.44                     | plastic packaging  | R13                       | M           | Weighed     | Offsite in Ireland    | MLM ltd T/A ACN Europe UK,TFS Broker IRE/G022/11                    | Dundalk,.....,Louth,Ireland  |  |  |
| To Other Countries   | 15 01 02            | No        | 21.12                      | plastic packaging  | R13                       | M           | Weighed     | Abroad                | Vanden Recycling,IRE/G274/16  | Egerton House,Towers Business Park,Wilmslow Road Didsbury,M20 2DX,United Kingdom |  |  |
| To Other Countries   | 15 01 02            | No        | 22.1                       | plastic packaging  | R3                        | M           | Weighed     | Abroad                | WRC Recycling,IRE/AG121/15  | .....,United Kingdom   |  |  |
| To Other Countries   | 15 01 02            | No        | 112.6                      | plastic packaging  | R3                        | M           | Weighed     | Abroad                | Quitman O neill Packaging LTD,.                                     | .....,United Kingdom   |  |  |
| Within the Country   | 15 01 03            | No        | 37.98                      | wooden packaging   | R3                        | M           | Weighed     | Offsite in Ireland    | Barna Waste,W0106-02  | .....Galway,,Ireland   |  |  |
| Within the Country   | 15 01 06            | No        | 653.87                     | mixed packaging  | R13                       | M           | Weighed     | Offsite in Ireland    | MRF Bray,W0053-03   | .....,Carrowbrowne,Headford Road,Galway,Ireland                                  |  |  |
| Within the Country   | 15 01 06            | No        | 159.68                     | mixed packaging  | R3                        | M           | Weighed     | Offsite in Ireland    | Clonmel Waste Disposal Ltd,WFP-008-02                               | .....,Fassaroe,Bray,Co. Wicklow,Ireland  |  |  |
| Within the Country   | 15 01 07            | No        | 24.6                       | glass packaging  | R5                        | M           | Weighed     | Offsite in Ireland    | Crumb Rubber,WFP-LH-10-0005-01                                      | Lawlesstown,Clonmel,..Co Tipperary,Ireland                                       |  |  |
| Within the Country   | 16 01 03            | No        | 4.42                       | end-of-life tyres  | R3                        | M           | Weighed     | Offsite in Ireland    | KMK Metals ,W0113-03,.....,Tullamore,Co. Offaly,Ireland             | .....,Dromiskin,Dundalk,Co. Louth,Ireland  |  |  |
| Within the Country   | 16 06 01            | Yes       | 0.397                      | lead batteries   | R4                        | M           | Weighed     | Offsite in Ireland    | Mallow  | .....,Tullamore,Co. Offaly,Ireland   | KMK Metals ,W0113-03,.....,Tullamore,Co. Offaly,Ireland  | .....,Tullamore,Co Offaly,Ireland  |
| Within the Country   | 17 01 07            | No        | 3092.8                     | 01 06 mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 | R5                        | M           | Weighed     | Offsite in Ireland    | Contracts,CK(No)277/5   | .....,Mourneabbey,Co Cork,Ireland  |  |  |

| Transfer Destination | European Waste Code | Hazardous | Quantity (Tonnes per Year) | Description of Waste   | Waste Treatment Operation | Method Used |             | Location of Treatment | Haz Waste : Name and Licence/Permit No of Next Destination Facility                                       | Haz Waste : Name and Licence/Permit No of Recover/Disposer | 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   | Non Haz Waste: Address of Recover/Disposer                 | Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)  |  |  |
| Within the Country   | 17 01 07            | No        | 431.96                     | mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06   | R5                        | M           | Weighed     | Offsite in Ireland    | Fergal O'Grady,COR-CE-09-0004-01  |  | Ballysheen More,Sixmilebridge,Co. Clare,..Ireland   |  |  |
| Within the Country   | 17 09 04            | No        | 67.76                      | mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03   | R5                        | M           | Weighed     | Offsite in Ireland    | Mallow Contracts,CK(No)277/5 Gortnaduma Landfill,W0017-03   |  | ...Mourneabbey,Co Cork,Ireland  |  |  |
| Within the Country   | 19 09 02            | No        | 474.68                     | sludges from water clarification other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 | D5                        | M           | Weighed     | Offsite in Ireland    |   |  | .....Co Limerick,Ireland  |  |  |
| Within the Country   | 19 12 12            | No        | 24.56                      | other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11                                  | D5                        | M           | Weighed     | Offsite in Ireland    | Bord na Mona,W0201-03   |  | .....Ireland  |  |  |
| Within the Country   | 19 12 12            | No        | 600.38                     | other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11                                  | R13                       | M           | Weighed     | Offsite in Ireland    | Wiser Bins Ltd,WFP-CC-01/2014   |  | Centre Park Road,Cork,..Ireland   |  |  |
| Within the Country   | 19 12 12            | No        | 107.78                     | other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11                                  | R13                       | M           | Weighed     | Offsite in Ireland    | MRF Bray,W0053-03   |  | ..Fassaroe,Bray,Co. Wicklow,Ireland   |  |  |
| Within the Country   | 19 12 12            | No        | 1265.51                    | other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11                                  | R13                       | M           | Weighed     | Offsite in Ireland    | Greenstar Millennium,w0183-01   |  | Ballycoolin,..Dublin,Ireland ..Fassaroe,Bray,Co. Wicklow,Ireland  |  |  |
| Within the Country   | 20 01 01            | No        | 319.96                     | paper and cardboard  | R3                        | M           | Weighed     | Offsite in Ireland    | MRF Bray,W0053-03   |  | Wicklow,Ireland   |  |  |
| Within the Country   | 20 01 01            | No        | 27.26                      | paper and cardboard  | R3                        | M           | Weighed     | Offsite in Ireland    | Shred It Ireland,..   |  | .....Ireland  |  |  |
| Within the Country   | 20 01 01            | No        | 63.96                      | paper and cardboard  | R3                        | M           | Weighed     | Offsite in Ireland    | Bailey Waste Recycling Ltd,WPT-FG-08-0002-01  |  | Rosemount,Ballycoolin,Dublin 11,..Ireland   |  |  |
| To Other Countries   | 20 01 01            | No        | 80.68                      | paper and cardboard  | R3                        | M           | Weighed     | Abroad                | Northwood Recycling Ltd,IRE/G282/15   |  | Waterside Disley,Stockport,Cheshire,S K12 2HW,United Kingdom Egerton House,Towers Business Park,Wilmslow Road Didsbury,M20 2DX,United Kingdom |  |  |
| To Other Countries   | 20 01 01            | No        | 127.8                      | paper and cardboard  | R3                        | M           | Weighed     | Abroad                | MLM Ltd T/A ACN Europe UK,TFS Broker IRE/G022/11 Marwin Environmental Trading LTD,TFS Broker IRE/AG027/11 |  | .....Cork,Ireland   |  |  |
| Within the Country   | 20 01 01            | No        | 49.48                      | paper and cardboard  | R3                        | M           | Weighed     | Offsite in Ireland    | Clonmel Waste Disposal Ltd,WP-008-02  |  | Lawlesstown,Clonmel,..Co Tipperary,Ireland  |  |  |
| Within the Country   | 20 01 02            | No        | 50.56                      | glass  | R5                        | M           | Weighed     | Offsite in Ireland    |   |  |   |  |  |
| Within the Country   | 20 01 02            | No        | 139.16                     | glass  | R5                        | M           | Weighed     | Offsite in Ireland    | Glassco Recycling Ltd,WFP-KE-08-0357-01   |  | Osberstown Business Park,Carragh Road,Naas,Co Kildare,Ireland   |  |  |
| Within the Country   | 20 01 08            | No        | 3213.92                    | biodegradable kitchen and canteen waste  | R3                        | M           | Weighed     | Offsite in Ireland    | Acorn Recycling Ltd,. W0249-01  |  | Ballybeg Composting Facility,Littleton,..Co Tipperary,Ireland   |  |  |
| Within the Country   | 20 01 08            | No        | 89.82                      | biodegradable kitchen and canteen waste  | R3                        | M           | Weighed     | Offsite in Ireland    | Clonmel Waste Disposal Ltd,WP-008-02  |  | Lawlesstown,Clonmel,..Co Tipperary,Ireland  |  |  |
| Within the Country   | 20 01 38            | No        | 1168.58                    | wood other than that mentioned in 20 01 37   | R13                       | M           | Weighed     | Offsite in Ireland    | Clonmel Waste Disposal Ltd,WP-008-02  |  | Lawlesstown,Clonmel,..Co Tipperary,Ireland  |  |  |
| Within the Country   | 20 01 40            | No        | 415.128                    | metals   | R4                        | M           | Weighed     | Offsite in Ireland    | Clearcircle metals (Limerick),WFP-LKC-11-001-01   |  | Ballysimon Road,Limerck,..Ireland Eastway Business Park,Ballysimon,Limerick,..Ireland   |  |  |
| Within the Country   | 20 01 40            | No        | 50.54                      | metals   | R4                        | M           | Weighed     | Offsite in Ireland    | United Metals,WFP-LK-2013-147A-R1   |  |   |  |  |



| 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 : Name and Licence/Permit No of Recover/Disposer | Haz Waste : Address of Next Destination Facility          | Non Haz Waste: Address of Recover/Disposer | Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY) | Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY) |
|----------------------|---------------------|-----------|----------------------------|--------------------------|---------------------------|-------------|-------------|-----------------------|---|--|---|--|--|--|
|                      |                     |           |                            |                          |                           | M/C/E       | Method Used |                       | Non   | Non Haz Waste: Address of Recover/Disposer                 |   |  |  |  |
| Within the Country   | 20 02 01            | No        | 97.34                      | biodegradable waste      | R3                        | M           | Weighed     | Offsite in Ireland    | Clonmel Waste Disposal Ltd,W008-02                                  |  | Lawlesstown,Clonmel,..Co Tipperary,Ireland                |  |  |  |
| Within the Country   | 20 03 01            | No        | 442.53                     | mixed municipal waste    | R13                       | M           | Weighed     | Offsite in Ireland    | Barna Waste,W0106-02  |  | ..Carrowbrowne,Headford Road,Galway,Ireland               |  |  |  |
| Within the Country   | 20 03 01            | No        | 985.46                     | mixed municipal waste    | D5                        | M           | Weighed     | Offsite in Ireland    | Bord na Mona,W0201-03   |  | .....,Ireland   |  |  |  |
| Within the Country   | 20 03 01            | No        | 21.6                       | mixed municipal waste    | R13                       | M           | Weighed     | Offsite in Ireland    | Dillon Waste,WFP-KY-10-001  |  | The kerries,Tralee,Kerry,..Ireland                        |  |  |  |
| Within the Country   | 20 03 01            | No        | 2766.48                    | mixed municipal waste    | R1                        | M           | Weighed     | Offsite in Ireland    | Indaver Carlanstown,W0167-02  |  | Carlanstown,Duleek,Co. Meath,..Ireland                    |  |  |  |
| To Other Countries   | 20 03 01            | No        | 21123.59                   | mixed municipal waste    | R13                       | M           | Weighed     | Abroad                | indaver AB Fortum,..  |  | .....,Ireland   |  |  |  |
| To Other Countries   | 20 03 01            | No        | 8442.48                    | mixed municipal waste    | R13                       | M           | Weighed     | Abroad                | Indaver Avi   |  | .....,ireland   |  |  |  |
| To Other Countries   | 20 03 01            | No        | 7919.12                    | mixed municipal waste    | R13                       | M           | Weighed     | Abroad                | Abfallverwertung,..   |  | .....,Ireland   |  |  |  |
| To Other Countries   | 20 03 01            | No        | 14026.63                   | mixed municipal waste    | R13                       | M           | Weighed     | Abroad                | Indaver (EON Delfrizijl)..  |  | .....,Ireland   |  |  |  |
| Within the Country   | 20 03 01            | No        | 136.08                     | mixed municipal waste    | R13                       | M           | Weighed     | Offsite in Ireland    | Indaver (Eon Swedeb)..  |  | .....,Ireland   |  |  |  |
| Within the Country   | 20 03 01            | No        | 1033.44                    | mixed municipal waste    | R13                       | M           | Weighed     | Offsite in Ireland    | Kilarny Waste Disposal,W0217-01                                     |  | Kilarny .....,Co Kerry,Ireland                            |  |  |  |
| Within the Country   | 20 03 01            | No        | 1033.44                    | mixed municipal waste    | D5                        | M           | Weighed     | Offsite in Ireland    | Gortnaduma Landfill,W0017-03  |  | .....,Co Limerick,Ireland                                 |  |  |  |
| Within the Country   | 20 03 01            | No        | 1117.44                    | mixed municipal waste    | D5                        | M           | Weighed     | Offsite in Ireland    | Gortnaduma Landfill,W0017-03  |  | .....,Co Limerick,Ireland                                 |  |  |  |
| Within the Country   | 20 03 01            | No        | 14.28                      | mixed municipal waste    | R13                       | M           | Weighed     | Offsite in Ireland    | MRF Bray,W0053-03   |  | ..,Fassaroe,Bray,Co. Wicklow,Ireland                      |  |  |  |
| Within the Country   | 20 03 01            | No        | 244.73                     | mixed municipal waste    | R13                       | M           | Weighed     | Offsite in Ireland    | MRF Bray,W0053-03   |  | ..,Fassaroe,Bray,Co. Wicklow,Ireland                      |  |  |  |
| Within the Country   | 20 03 01            | No        | 5121.39                    | mixed municipal waste    | R13                       | M           | Weighed     | Offsite in Ireland    | MRF Bray,W0053-03   |  | ..,Fassaroe,Bray,Co. Wicklow,Ireland                      |  |  |  |
| Within the Country   | 20 03 01            | No        | 27.96                      | mixed municipal waste    | R13                       | M           | Weighed     | Offsite in Ireland    | Starrus Eco Holdings Ltd,W0116-02                                   |  | Six Cross Roads,Carriganard,Butlerstown,Waterford,Ireland |  |  |  |
| Within the Country   | 20 03 01            | No        | 10633.22                   | mixed municipal waste    | R13                       | M           | Weighed     | Offsite in Ireland    | Dillon Waste,WFP-KY-10-001  |  | The kerries,Tralee,Kerry,..Ireland                        |  |  |  |
| Within the Country   | 20 03 03            | No        | 22.34                      | street-cleaning residues | D5                        | M           | Weighed     | Offsite in Ireland    | Bord na Mona,W0201-03   |  | .....,Ireland   |  |  |  |
| Within the Country   | 20 03 03            | No        | 145.6                      | street-cleaning residues | D5                        | M           | Weighed     | Offsite in Ireland    | Gortnaduma Landfill,W0017-03  |  | .....,Co Limerick,Ireland                                 |  |  |  |
| Within the Country   | 20 03 03            | No        | 1541.12                    | street-cleaning residues | R13                       | M           | Weighed     | Offsite in Ireland    | MRF Bray,W0053-03   |  | ..,Fassaroe,Bray,Co. Wicklow,Ireland                      |  |  |  |
| Within the Country   | 20 03 07            | No        | 60.82                      | bulky waste              | D5                        | M           | Weighed     | Offsite in Ireland    | Bord na Mona,W0201-03   |  | .....,Ireland   |  |  |  |
| Within the Country   | 20 03 07            | No        | 22.58                      | bulky waste              | D5                        | M           | Weighed     | Offsite in Ireland    | Gortnaduma Landfill,W0017-03  |  | .....,Co Limerick,Ireland                                 |  |  |  |
| Within the Country   | 20 03 07            | No        | 2305.48                    | bulky waste              | D5                        | M           | Weighed     | Offsite in Ireland    | Drehid Landfill,W0201-03  |  | Carbury,..,Kildare,Ireland                                |  |  |  |
| Within the Country   | 20 03 07            | No        | 1971.76                    | bulky waste              | R13                       | M           | Weighed     | Offsite in Ireland    | MRF Bray,W0053-03   |  | ..,Fassaroe,Bray,Co. Wicklow,Ireland                      |  |  |  |
| Within the Country   | 20 03 07            | No        | 405.26                     | bulky waste              | R13                       | M           | Weighed     | Offsite in Ireland    | Greenstar Millennium,w0183-01                                       |  | Ballycoolin,..,Dublin,Ireland                             |  |  |  |

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

# **APPENDIX 2**

Procedures List



|                          |  |                             |
|--------------------------|--|-----------------------------|
| <b>Doc. No.:</b> Control | <b>Revision No.:</b> As Shown  | <b>Issue Date:</b> As Shown |
| <b>Approved By:</b>      | Malcolm Dowling – Group Environmental Manager<br>Oliver Callan – Group H&S Manager | <b>Page 1 of 2</b>          |

**Integrated Procedures - IP**

|       |   |                  |
|-------|---|------------------|
| IP-01 | Document & Record Control Procedure                       | Rev 01, 28/04/14 |
| IP-02 | Health & Safety Risk Assessment Procedure                 | Rev 01, 28/04/14 |
| IP-03 | Environmental Aspects & Impacts Procedure                 | Rev 01, 28/04/14 |
| IP-04 | Legal & Regulatory Requirements Procedure                 | Rev 01, 28/04/14 |
| IP-05 | Objectives, Targets & Management Programmes Procedure     | Rev 01, 28/04/14 |
| IP-06 | Competence, Training & Awareness Procedure                | Rev 01, 28/04/14 |
| IP-07 | Communication & Consultation Procedure                    | Rev 01, 28/04/14 |
| IP-08 | Monitoring, Measurement & Improvement Procedure           | Rev 01, 28/04/14 |
| IP-09 | Evaluation of Compliance Procedure                        | Rev 01, 28/04/14 |
| IP-10 | Non Conformances, Corrective/Preventive Actions Procedure | Rev 01, 28/04/14 |
| IP-11 | Internal Audit Procedure                                  | Rev 01, 28/04/14 |
| IP-12 | Management Review Procedure                               | Rev 01, 28/04/14 |
| IP-13 | Control of Contractors/Visitors Procedure                 | Rev 01, 28/04/14 |
| IP-14 | Health & Safety & Environmental Monitoring                | Rev 01, 28/04/14 |
| IP-15 | Emergency Preparedness & Response Procedure               | Rev 01, 28/04/14 |
| IP-16 | Fire Prevention Procedure                                 | Rev 01, 28/04/14 |
| IP-17 | Bin Washing Procedure                                     | Rev 01, 28/04/14 |

**Safety Procedures - SP**

|       |   |                  |
|-------|---|------------------|
| SP-01 | Permit to Work Procedure  | Rev 01, 28/04/14 |
| SP-02 | Maintenance & Calibration Procedure                                       | Rev 01, 28/04/14 |
| SP-03 | Mobile Plant Procedure  | Rev 01, 28/04/14 |
| SP-04 | Fork Truck Procedure  | Rev 01, 28/04/14 |
| SP-05 | Operation of Fixed Plant Procedure  | Rev 01, 28/04/14 |
| SP-06 | Lock Out / Tag Out Procedure  | Rev 01, 28/04/14 |
| SP-07 | Health & Safety Notification Procedure                                    | Rev 01, 28/04/14 |
| SP-08 | MSW Shredder routine Maintenance & Clearing of Blockages Procedure (SCGT) | Rev 01, 28/04/14 |
| SP-09 | Weighbridge & Tipping Procedure (SCGT)                                    | Rev 01, 28/04/14 |
| SP-10 | Cleaning of Washing Bay (Greenogue)                                       | Rev 01, 28/04/14 |



|                          |  |                             |
|--------------------------|--|-----------------------------|
| <b>Doc. No.: Control</b> | <b>Revision No.: As Shown</b>  | <b>Issue Date: As Shown</b> |
| <b>Approved By:</b>      | Malcolm Dowling – <i>Group Environmental Manager</i><br>Oliver Callan – <i>Group H&amp;S Manager</i> | <b>Page 2 of 2</b>          |

**Environmental Procedures - EP**

|       |   |                                     |
|-------|---|-------------------------------------|
| EP-01 | Office Waste & Energy Management Procedure    | Rev 01, 28/04/14                    |
| EP-02 | Decommissioning and Aftercare Procedure       | Rev 01, 28/04/14                    |
| EP-03 | Environment Communications Procedure          | Rev 01, 28/04/14                    |
| EP-04 | Waste Permits & Licences Procedure            | Rev 01, 28/04/14                    |
| EP-05 | Waste Acceptance Procedure                    | Rev 01, 28/04/14                    |
| EP-06 | Unacceptable Waste Procedure                  | Rev 01, 28/04/14                    |
| EP-07 | Waste & Material Storage Procedure            | Rev 01, 28/04/14                    |
| EP-08 | Waste Processing Procedure                    | Rev 01, 28/04/14                    |
| EP-09 | Site Infrastructure Procedure                 | Rev 01, 28/04/14                    |
| EP-10 | Nuisance Management Procedure (Site Specific) | (Site Specific)<br>Rev 01, 28/04/14 |
| EP-11 | Civic Amenity Site Procedure                  | Rev 01, 28/04/14                    |