

**ANNUAL ENVIRONMENTAL REPORT**  
**GREENSTAR ENVIRONMENTAL SERVICES LIMITED**  
**MATERIALS RECOVERY FACILITY**  
**DOCK ROAD, LIMERICK**  
**LICENCE NO. W0082-02**  
**JANUARY 2011 – DECEMBER 2011**

**Prepared For: -**

Greenstar Environmental Services Ltd.,  
Unit 6,  
Ballyogan Business Park,  
Ballyogan Road,  
Sandyford,  
Dublin 18.

**Prepared By: -**

O' Callaghan Moran & Associates,  
Granary House,  
Rutland Street,  
Cork.

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Report No	Date	Status	Prepared By	Reviewed By
0480305	30/03/2011	Draft	Michael Watson MA.	Mr Jim O'Callaghan MSc
0480305	30/03/2011	Final	Michael Watson MA.	Mr Jim O'Callaghan MSc

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## 1. INTRODUCTION

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This is the 2011 Annual Environmental Report (AER) for the Greenstar Environmental Services Ltd. (GES), Materials Recovery Facility (MRF) at Ballykeefe, Dock Road, Limerick (W0082-02) and covers the reporting period January 2011 to December 2011. The AER has been prepared in compliance with Condition 10.6 of the Licence.

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 Cognisance was also taken of the Agency AER Draft Guidance Document issued in January 2012<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 EPA (Environmental Protection Agency) 1999 Waste Licensing – Draft Guidance on Environmental Management Systems and Reporting to the Agency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 timber shredding, external waste storage bays (C&D, glass, metals and timber), 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, are paved with concrete.

### 2.2 Waste Management Activities

The Licence allows GES to accept and process 90,000 tonnes of commercial and industrial, construction and demolition and municipal wastes.

#### 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).

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.

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

### *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 GES 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 appropriately licensed landfills.

### *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.

### *Timber Shredding*

Untreated timber pallets and untreated construction timbers are 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.

### 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° Komatsu Excavator	100	70
1	Volvo Loading Shovel	500	350
2	Doppstadt shredders	200	150
1	Doppstadt trommel	200	140

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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 2011 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 discharged via 2 No. three chamber interceptors to a man made drain at the eastern site boundary. The drain discharges to the Ballinacurra Creek, which ultimately joins 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 directed through FE1A.

Monitoring is also required in the drain upstream (WS9) and downstream (WS10) of the discharge points. In July 2007, the Agency amended the monitoring programme to include an inspection chamber on the surface water drainage system prior to treatment at the interceptors (Metal Bay manhole (MH) 5). Monitoring was carried out bi-annually as specified in the Licence until June 2010 when the frequency was increased to monthly and the parameters list expanded at the request of the Agency.

The monitoring results are included on Tables 3.1 to 3.5. The proposed emission limit value (ELV) for ammonia which was submitted to the Agency for their agreement in 2010 was marginally exceeded at FE1A in May 2011. The ELV for BOD was exceeded at FE1A in November and December 2011 while the limit for TSS was also exceeded in December 2011.

**Table 3.1** Surface Water Monitoring Results 2011FE1A

Parameter	Units	May	Sept	Oct	Nov	Dec	ELV*
pH	pH units	7.06	7.14	6.88	6.99	6.29	-
BOD	mg/l	4	17	10	162	106	25
Total Suspended Solids	mg/l	<1	28	9	43	113	60
Ammonia Nitrogen	mg/l	5.21	1.46	1.23	3.90	1.68	4
Fats Oils Grease	mg/l	<1	5	<1	<0.01	2	-
Mineral Oils	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	5
TOC	mg/l	16	5.2	2.1	92	32	-

\* Applies to discharges – FE1A & B only.



**Table 3.2** Surface Water Monitoring Results 2011 FE1B

Parameter	Units	Jan	Feb	ELV*
pH	pH units	7.41	7.36	-
BOD	mg/l	3	11	25
Total Suspended Solids	mg/l	57	11	60
Ammonia Nitrogen	mg/l	3.31	1.33	4
Fats Oils Grease	mg/l	<1	1.6	-
Mineral Oils	mg/l	<0.01	<0.01	5

\* Applies to discharges – FE1A & B only.

**Table 3.3** Surface Water Monitoring Results 2011 WS9

Parameter	Units	Jan	Feb	May	Sept	Oct	Nov	Dec
pH	pH units	7.48	7.14	7.16	6.12	7.12	7.26	7.11
BOD	mg/l	1	4	3	27	5	17	4
Total Suspended Solids	mg/l	19	8	10	4	16	17	42
Ammonia Nitrogen	mg/l	1.72	0.48	<0.01	0.31	0.35	0.68	0.02
Fats Oils Grease	mg/l	<1	<1	<1	1	<1	<0.01	<1
Mineral Oils	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TOC	mg/l	-	-	1.6	12	2.6	31	3.5

**Table 3.4** Surface Water Monitoring Results 2011 WS10

Parameter	Units	Jan	Feb	May	Sept	Oct	Nov	Dec
pH	pH units	7.38	7.24	7.21	6.4	7.35	7.11	7.23
BOD	mg/l	4	4	4	10	4	85	22
Total Suspended Solids	mg/l	7	9	7	3.2	7	21	113
Ammonia Nitrogen	mg/l	2.12	0.47	0.63	0.43	0.46	2.57	0.38
Fats Oils Grease	mg/l	<1	<1	<1	<1	<1	<0.01	<1
Mineral Oils	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TOC	mg/l	-	-	2.8	7.1	1.9	53	11.9

**Table 3.5** Surface Water Monitoring Results 2011 MH-5

Parameter	Units	Jan	Feb	May	Sept	Oct	Nov	Dec	EQS
pH	pH units	7.12	7.39	7.18	6.29	7.02	7.13	6.02	
BOD	mg/l	427	48	38	45	203	52	191	
Total Suspended Solids	mg/l	572	130	122	219	417	119	83	
Ammonia Nitrogen	mg/l	1.8	25.1	1.8	0.61	2.67	0.05	0.76	
Fats Oils Grease	mg/l	32	15	23	2	11	<0.01	5	-
Mineral Oils	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
TOC	mg/l	-	-	14	11	107	31	36	
Arsenic	µg/l	0.8	2.2	1.1	-	-	<2.5	-	10
Cadmium	µg/l	0.3	2.5	<1	<0.1	<0.1	<0.5	<0.1	5
Chromium	µg/l	<1	54	5	69	7	<1.5	1	30
Copper	µg/l	60	24	57	24	93	<7	12	30
Mercury	µg/l	<0.2		<0.2	<0.2	<0.2	<1	<0.2	1
Nickel	µg/l	143	507	18	86	81	7	48	20
Lead	µg/l	7	27	5	41	12	<5	36	10
Selenium	µg/l	1.5	<0.2	1.1	-	-	<3	-	-
Zinc	µg/l	14	18	26	34	14	8	8	100
Barium	µg/l	18.2	25	12.1	-	-	27	-	100
Antimony	µg/l	1.6	1.7	1.1	-	-	-	-	-

### 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. Foul water monitoring is required at two monitoring locations, FE2 which is the discharge from the treatment plant and at the truckwash discharge. The truckwash has not been used since Q3 2010 and therefore no samples were collected at this location during the monitoring period as the sampling location was dry.

The monitoring results are included on Table 3.6. 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. The discharge is generally of good quality, with the exception of BOD in January and February and TSS in February. The treated effluent discharges to ground and it is understood that the percolation area is not categorised as located in a nutritionally sensitive area.

**Table 3.6** Foul water Monitoring Results 2011 – FE2

Parameter	Units	Jan	Feb	Apr	May	Jun	Sept	Oct	Nov	Dec	Performance Standards
pH	pH units	7.23	5.98	7.54	6.34	8.2	5.10	6.92	7.16	6.79	-
BOD	mg/l	44	47	4	<1	5	16	3	9	12	20
TSS	mg/l	9	31	13	<1	<10	8	24	<10	38	30
Ammoniacal Nitrogen	mg/l	0.35	4.86	0.69	0.65	0.54	0.81	0.49	2.58	0.23	20
Fats Oils Grease	mg/l	16	8	<1	<1	<0.01	1	<1	<1	<1	-
Sulphate	mg/l	57.1	41	36.4	52.1	77.1	86.1	48.2	84	34.8	-
Total Phosphorous	mg/l	1.52	0.81	1.77	0.35	1.23	0.17	0.24	1.1	0.31	-
Total Nitrogen	mg/l	9	29	3	5	18	14	7	18	6	-
Nitrate	mg/l	30.1	26.1	12.4	20.1	34.5	56.2	25.9	44.5	22.4	
Nitrite	mg/l	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	1.42	<0.1	
COD	mg/l	-	127	9	3	35	52	39	94	45	

### 3.3 Groundwater Monitoring

Groundwater monitoring is carried out bi-annually at three wells, GWM1, GWM2 and GWM3. GWM1 is 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.

The results are presented in Tables 3.7 and 3.8. 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.

The ammoniacal nitrogen at all monitoring points and the conductivity at GWM1 and GWM2 exceeded the IGVs in May 2011. All other parameters were below their respective limits. In November 2011, the ammoniacal nitrogen at all monitoring points exceeded the both the GTV and IGV. The conductivity at GWM2 marginally exceeded the IGV. All other parameters were below their respective limits.

**Table 3.7** Groundwater Monitoring Results –May 2011

Parameter	Units	GWM1	GWM2	GWM3	IGV
BOD	mg/l	21	6	<1	-
TSS	mg/l	908	1809	1013	-
Dissolved Oxygen	%	8	7	8	NAC
Oils, Fats & Greases	mg/l	<0.01	<0.01	<0.01	-
Total Phosphorus	mg/l	1.232	1.379	0.495	-
Ammoniacal Nitrogen	mg/l	10.03	6.97	0.90	0.12
Conductivity	mS/cm	1.148	1.273	0.840	1.000
DRO	mg/l	<0.01	<0.01	<0.01	0.01
Aliphatic Hydrocarbons	mg/l	<0.01	<0.01	<0.01	0.01
Undecane	mg/l	<0.01	<0.01	<0.01	-

**Table 3.8** Groundwater Monitoring Results – November 2011

Parameter	Units	GWM1	GWM2	GWM3	GTV	IGV
BOD	mg/l	13	6	<1	-	-
TSS	mg/l	315	121	<10	-	-
Dissolved Oxygen	mg/l	4	6	7	-	NAC
Oils, Fats & Greases	mg/l	<0.01	<0.01	<0.01	-	-
Total Phosphorus	mg/l	1.248	2.825	0.014	-	-
Ammoniacal Nitrogen	mg/l	9.33	6.63	0.71	0.175	0.12
Conductivity	mS/cm	0.812	1.045	0.598	1.875	1.000
DRO	mg/l	<0.01	<0.01	<0.01	-	0.01
Aliphatic Hydrocarbons	mg/l	<0.01	<0.01	<0.01	-	0.01
Undecane	mg/l	<0.01	<0.01	<0.01	-	-

### 3.4 Noise Monitoring

The annual noise survey was carried out on the 30<sup>th</sup> August 2011 at four boundary monitoring (NI1 – 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 3.10.

The Noise levels at NI2 and NI4 were greater than the 55 dB limit set in the licence, however the limit is not considered to be relevant as there are no nearby sensitive receptors. An inspection of the nearest NSLs to the facility during the survey indicated that facility operations were not audible and were lower than the 55 dB daytime noise limit. No tones or impulses were noted at the offsite NSLs.

**Table 3.10** Noise Monitoring Results 2011

Station	Time	L <sub>Aeq</sub> 30 min dB	L <sub>AF10</sub> 30 min dB	L <sub>AF90</sub> 30 min dB	Specific level* dB	Noise audible
NI1	1457- 1527	52	53	39	51	Loader movements in Greenstar building slightly audible. Occasional truck, forklift truck and clamp truck movements audible at low level. Bird song/calls. Occasional light aircraft passes at low altitude significant, and contributing marginally to L <sub>Aeq</sub> . Offsite traffic audible in distance to NW.
NI2	1532- 1602	65	66	49	65	Occasional Greenstar truck movements on nearest yard dominant when present, particularly when pulling up near NI2. Apart from these, noise audible from loader, forklift truck and clamp truck movements in building and around yard. Between site plant movements, cardboard baler and conveyor slightly audible, offsite road traffic audible in distance, and several light aircraft passes at low altitude significant, although contribution to L <sub>Aeq</sub> marginal due to dominance of trucks.
NI3	1423- 1453	52	55	45	51	Occasional truck movements on Greenstar yard, including idling trucks. Some contribution to L <sub>Aeq</sub> , but less than 50%. Cardboard baler on from 1445 (although conveyor off until 1455), audible at low level and influencing L <sub>AF90</sub> . Starlings atop telecom mast immediately outside boundary significant. Offsite fans located at base of mast also continuously audible, and influencing L <sub>AF90</sub> . Several light aircraft passes audible. Distant traffic.
NI4	1641- 1711	69	72	64	<<64	No Greenstar emissions audible. Passing Dock Road traffic continuous, and dominant. No other noise audible, apart from occasional vehicle movements on adjacent access roadway.

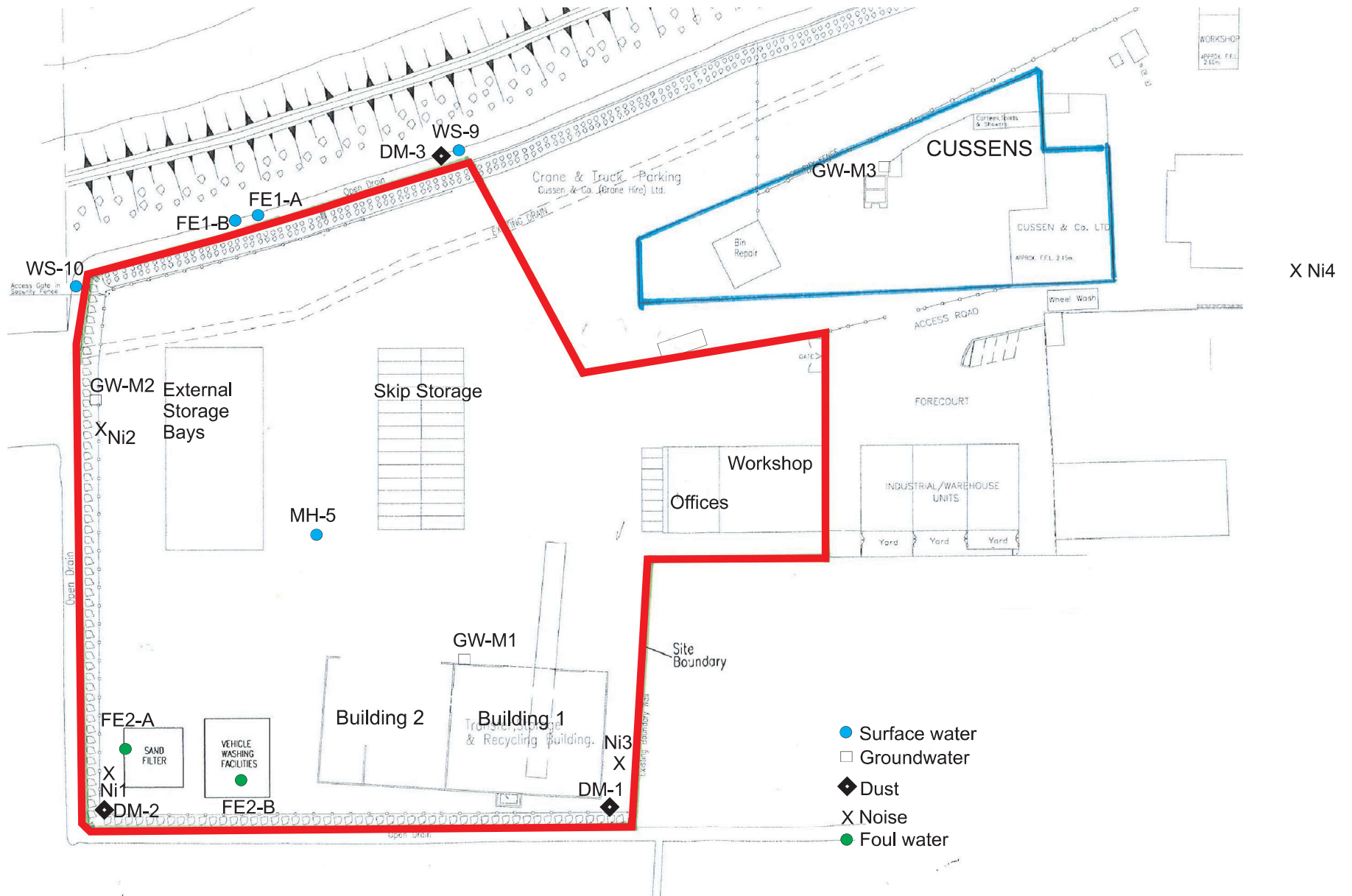
### 3.5 Dust Monitoring

Dust monitoring was carried out on two occasions at three on-site locations (DM1, DM2 and DM3) in February and May-June. As required by the licence, a third monitoring event was conducted in December 2011, however due to an oversight the gauges were not submitted to the laboratory for analysis. The results of the monitoring are included on Table 3.11.

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

**Table 3.11** Dust Monitoring Results 2011

	<b>Units</b>	<b>Feb 2011</b>	<b>May – June 2011</b>	<b>Deposition Limit Value</b>
DM1	mg/m <sup>2</sup> /day	45.3	41.6	350
DM2	mg/m <sup>2</sup> /day	25.5	67.2	350
DM3	mg/m <sup>2</sup> /day	49.5	53.8	350



O'Callaghan Moran & Associates.  
 Granary House, Rutland Street,  
 Cork Ireland.  
 Tel. (021) 4321521 Fax. (021) 4321522  
 email: info@ocallaghanmoran.com

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

CCTV surveys and integrity testing of the surface water drainage system was completed by Horizon Environmental in October 2010. The survey identified a number of defects that needed to be repaired. These repairs which were carried out in April 2011, were :

1. Four sections of 450mm diameter surface water pipeline (leading to the interceptors) containing multiple fractures.
2. A number of completely collapsed surface water lines
3. The making redundant of the surface water drainage lines within the transfer building.
4. The removal of the potential connection between runoff from the floor of the Waste Transfer building to other surface water lines located at the front of the building.

A Technical Amendment of the licence was granted on 2<sup>nd</sup> February 2011 and the licence now allows for the acceptance of waste at a Civic Amenity Area (CAA). The TA required the connection of the discharge of surface water run-off from the CAA to the facility's sewage and foul water collection system. These works were also carried out in April 2011.

### 4.2 Summary of Resource & Energy Consumption

Table 4.1 presents an estimate of the resources used on-site during the reporting period.

**Table 4.1 Estimate of Resources Used On-Site**

Resources	Quantities
Diesel (green)	43,000 litres
Electricity	65,000 Units
Hydraulic Oil	400 litres
Engine Oil	150 litres
Mains Water	265,000 litres

### 4.3 Bund Integrity Testing & Pipeline

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. This most recent testing was completed in Q4 2010 and will be carried out again in 2013.



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

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Table 5.1 shows the total quantities of waste received and consigned from the facility in 2011. Table 5.2 shows the total quantities of waste received and consigned in 2010. Table 5.3 shows the quantities of waste received and consigned in previous years. A breakdown of the waste types is provided in accordance with the European Waste Catalogue and Hazardous Waste list. A more detailed breakdown of the wastes received and consigned is presented in the PRTR submission in Appendix 1. The total quantity of waste received was 32,550 tonnes. The total waste consigned was 33,355 tonnes.

All the wastes consigned from the site went to recovery and disposal facilities agreed with the Agency.

**Table 5.1 Waste Received & Consigned 2011**

<b>EWC</b>	<b>Description</b>	<b>Waste In</b>	<b>Waste Out</b>
07 02 12	Sludge	336	
13 05 03	Sludge	2,029	
15 01 01	Cardboard & Paper Packaging	2,286	7,584
15 01 02	Plastic Packaging	147	737
15 01 03	Wooden Packaging	9	
15 01 04	Metallic Packaging	28	
15 01 06	Mixed Packaging	6,197	2,252
15 01 07	Glass Packaging	101	147
17 08 02	Plasterboard from C&D	53	21
17 09 04	Mixed C&D	2,370	2320
19 08 01	WWTP Screenings		2,317
19 12 07	Timber		1,396
19 12 12	Mixed Dry C&I		14,332
20 01 01	Paper & Cardboard	1,345	758
20 01 02	Glass	103	1
20 01 08	Commercial food waste	468	268
20 01 35*	WEEE	2	
20 01 38	Timber	997	
20 01 39	Plastic	809	6
20 01 40	Metal	728	1,012
20 02 01	GreenWaste		93
20 03 01	Mixed Residual Waste	10,329	
20 03 01	Mixed Dry Recyclables	4,210	
20 03 07	Bulky Waste	3	98
	<b>Total Received</b>	<b>32,550</b>	
	<b>Total Consigned</b>		<b>33,355</b>

**Table 5.2 Waste Received & Consigned 2010**

<b>EWC</b>	<b>Description</b>	<b>Waste In</b>	<b>Waste Out</b>
15 01 01	Cardboard & Paper Packaging	480.99	6,789.12
15 01 02	Plastic Packaging	833.00	689.90
15 01 03	Wooden Packaging	1,009.89	1,607.78
15 01 04	Metallic Packaging	165.53	903.89
15 01 06	Mixed Packaging	5,007.66	2,993.88
15 01 07	Glass Packaging	238.33	235.32
16 01 03	Tyres		16.00
16 02 14	WEEE	3.04	
17 01 07	Mixed C&D	561.06	
17 02 01	Wood	24.28	
17 08 02	Plasterboard from C&D		94.26
17 09 04	Mixed C&D	1,944.00	2,654.90
19 08 01	WWTP Screenings	112.60	
19 08 05	Sludge from treatment of urban waste water	90.64	100.14
19 09 02	Sludges from water clarification	3,832.60	3,777.39
19 12 03	Mixed Metals		267.86
19 12 12	Mixed Dry C&I		840.68
20 01 01	Paper & Cardboard	2,082.48	68.20
20 01 08	Commercial food waste	481.35	176.34
20 01 36	WEEE		2.84
20 01 38	Timber	16.34	
20 01 39	Plastic	98.22	
20 01 40	Metal	389.43	
20 03 01	Mixed Residual Waste	12,945.91	13,022.44
20 03 01	Mixed Dry Recyclables	1,032.46	
20 03 03	City Council Street Sweeping	1,501.92	235.92
20 03 07	Bulky Waste	1,983.57	
	<b>Total Received</b>	<b>34,835.30</b>	
	<b>Total Consigned</b>		<b>34,476.86.</b>
	<b>Total Recovered</b>		<b>21,234.42</b>
	<b>Total Disposed</b>		<b>13,233.44</b>
	<b>Recovery Rate</b>		<b>61.62%</b>

**Table 5.3 Waste Received & Consigned**

	<b>2010</b>	<b>2009</b>	<b>2008</b>
<b>Total Received</b>	34,835.30	42,536	58,203
<b>Total Consigned</b>	34,476.86	41,547	58,654
<b>Total Recovered</b>	21,234.42	18,281	27,779
<b>Total Disposed</b>	13,233.44	23,266	30,875
<b>Recovery Rate</b>	61.62%	44%	47.36%

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

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### **6.1 Incidents**

The routine monitoring programme identified two incidents during the reporting period related to surface water discharges from the facility. The ELV for BOD was exceeded at FE1A in November and December 2011, while the limit for TSS was also exceeded in December 2011. A thorough cleanout of the yard area had been carried out in the days prior to both sampling events and it is considered that this may have contributed to the higher BOD and TSS levels recorded. The incidents were reported to the Agency and corrective actions implemented to prevent such exceedances in the future.

Since the acquisition of the Limerick facility in April 2010, GES have focussed on improving the quality of the surface water discharge from the facility. Significant progress was achieved during the reporting period, as noted by the Agency in their audit reports.

### **6.2 Register of Complaints**

GES maintains a register of complaints received in accordance with Condition 10.4 of the Licence. There were no complaints received during the reporting period.

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## 7. ENVIRONMENTAL DEVELOPMENT & CONTROL

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### 7.1 Environmental Management Programme Report

GES 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. GES 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 schedule of Objectives and Targets, including their status for 2011 (Table 7.1), as well as the proposed Objectives and Targets for 2012 (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:** Mary Dwane,

**Responsibility:** Depot Manager

**Experience:** 12 years experience waste management experience; has completed the FÁS waste management course.

**Name:** Michael Whelan,

**Responsibility:** Facility Manager

**Experience:** 12 years experience waste management experience; has completed the FÁS waste management course.

### *7.1.2 Staff Training*

Staff training carried out during the year included environmental induction, manual handling and vehicle safety training. Details on staff training for 2011 are available in the facility office.

## **7.2 Environmental Management Programme**

### *7.2.1 Schedule of Objectives 2011*

The objectives that were achieved during this reporting period are outlined in Table 7.1. Details on the progress made are also included on the table and an evaluation of what has been achieved to date is presented below.

#### **Objective 1 – Awareness and Training**

Environmental Awareness Training is carried out once every three years and was done in Q4 2011 as part of ISO 14001 certification.

#### **Objective 2 – Energy & Resource Consumption**

Energy is reviewed quarterly across the Greenstar/Greenstar Environmental Services Group.

#### **Objective 3 – Review & Assess the Effectiveness of Nuisance Control Procedures**

Procedures are subject to review during annual internal and external audits or depending on whether there is a change to the operation.

#### **Objective 4 – Pollution Prevention**

Significant repairs and maintenance have been carried out on the surface water infrastructure to ensure integrity of the system and compliance with licence parameter emission limits

#### **Objective 5 – Civic Amenity**

A technical amendment was granted for the provision of a Civic Amenity Area in February 2011. The CAA is operational and the waste types accepted are:

- Dry Recyclables(cardboard, papers, plastic, metals and glass)
- Bulky Items (beds, mattresses, cabinets etc)
- Garden waste (grass cuttings, hedge trimmings etc)

- Residual mixed waste (Black Bin)
- Construction & Demolition Waste

### **Objective 6 – ISO 14001**

The facility achieved ISO 14001 and OHSAS 18001 accreditation in November 2011. The site operates under an integrated management system of Environment and Health & Safety.

#### *7.2.2 Schedule of Objectives 2012*

A schedule of targets and objectives for 2012 has been set by the management of the facility. These objectives are outlined in Table 7.2.

### **7.3 Communications Programme**

GES are committed to setting the standard in waste management and ensuring environmental compliance in all operations. In addition, GES'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 GES 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**

GES has adequate insurance cover for environmental liabilities to €10,000,000 for any one occurrence, which will apply to "sudden identifiable and unintended incidents".

GES submitted a Decommissioning Plan to the Agency in October 2011. The plan addresses the known liabilities at the facility including site closure. Subject to the agreement of the Agency, GES proposes to place a charge on company assets to cover those costs.

**Table 7.1 Objectives and Targets for 2011 –**

No	2011 Objective	Target	Responsibility	Status
1	<b>Awareness and Training</b>	Continue to ensure that appropriate training is carried out specific to all site personnel as per the Company's established Training Matrix.	Site Management	Ongoing
2	<b>Energy &amp; Resource Consumption</b>	Summarise energy and resource usage on a quarterly basis with a view to reducing consumption	Site Management	Ongoing
3	<b>Review and Assess the Effectiveness of Nuisance Control Procedures</b>	Continually review and assess all nuisance control procedures to ensure minimal impact on the surrounding area.	Site Management	Ongoing
4	<b>Pollution Prevention</b>	Strive to ensure that monitoring results comply with the licence limits and investigate any exceedances of emission limit values.	Site Management	Ongoing
		Continue to ensure the integrity and maintenance of all drainage infrastructure.	Site Management	Ongoing
5	<b>Civic Amenity</b>	As per EPA grant a Civic Amenity site will be established at the facility to service the general public's waste recycling requirements.	Site Management	Complete
6	<b>ISO 14001</b>	Certification to ISO 14001	Site Management	Complete



**Table 7.2 Schedule of Objective and Targets 2012**

<b>No</b>	<b>Objective</b>	<b>Target</b>	<b>Responsibility</b>	<b>Timescale</b>
<b>1</b>	<b>Awareness and Training</b>	Continue to ensure that appropriate training is carried out specific to all site personnel as per the Company's established Training Matrix.	Site Management	Q1-Q4
<b>2</b>	<b>Energy &amp; Resource Consumption</b>	Summarise energy and resource usage on a quarterly basis with a view to reducing consumption	Site Management	Q1-Q4
<b>3</b>	<b>Review and Assess the Effectiveness of Nuisance Control Procedures</b>	Continually review and assess all nuisance control procedures to ensure minimal impact on the surrounding area.	Site Management	Q1-Q4
<b>4</b>	<b>Pollution Prevention</b>	Strive to ensure that emissions comply with the licence limits and investigate any exceedances of emission limit values.	Site Management	Q1-Q4
		Conduct further repairs to defects in the surface water pipeline system.	Site Management	Q2 2012
<b>5</b>	<b>Monitoring Location Access</b>	Improve access to surface water monitoring location FE1a	Site Management	Q2 2012

## **7.5 Nuisance Controls**

GES 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.

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

Under the European Pollutant Release and Transfer Register Regulation (EC) No. 166/2006 GES 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.

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## **8. OTHER REPORTS**

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No other reports were specified by the Agency.

# **APPENDIX 1**

## European Pollutant Release and Transfer Register



| PRTR# : W0082 | Facility Name : Greenstar Environmental Services Ltd | Filename : w0082\_2011.xls | Return Year : 2011 |

03/04/2012 12:21

[Guidance to completing the PRTR workbook](#)

# AER Returns Workbook

Version 1.1.13

<b>REFERENCE YEAR</b>	2011
-----------------------	------

## 1. FACILITY IDENTIFICATION

Parent Company Name	Greenstar Environmental Services Limited
Facility Name	Greenstar Environmental Services Ltd
PRTR Identification Number	W0082
Licence Number	W0082-02

### Waste or IPPC Classes of Activity

No.	class_name
3.12	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
4.13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.
4.2	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
4.3	Recycling or reclamation of metals and metal compounds.
4.4	Recycling or reclamation of other inorganic materials.
Address 1	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>	Suzanne Byrne
<b>AER Returns Contact Email Address</b>	suzanne.byrne@greenstar.ie
<b>AER Returns Contact Position</b>	Environmental Manager
<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>	0
<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 ?	

4.1 RELEASES TO AIR

[Link to previous years emissions data](#)

| PRTR# : W0082 | Facility Name : Greenstar Environmental Services Ltd | Filename : w0082\_2011.xls | Return Year : 2011 |

03/04/2012 12:21

**SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS**

RELEASES TO AIR				Please enter all quantities in this section in KGs				
POLLUTANT No, Annex II	Name	METHOD		QUANTITY				
		M/C/E	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 AIR				Please enter all quantities in this section in KGs				
POLLUTANT No, Annex II	Name	METHOD		QUANTITY				
		M/C/E	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 AIR				Please enter all quantities in this section in KGs				
POLLUTANT Pollutant No.	Name	METHOD		QUANTITY				
		M/C/E	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

**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:

Greenstar Environmental Services Ltd

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](#)

### SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO WATERS	
POLLUTANT	
No. Annex II	Name

\* Select a row by double-clicking on the Pollutant Name (Column B).

### SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS	
POLLUTANT	
No. Annex II	Name

\* Select a row by double-clicking on the Pollutant Name (Column B).

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

RELEASES TO WATERS	
POLLUTANT	
Pollutant No.	Name

\* Select a row by double-clicking on the Pollutant Name (Column B).



**Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be entered in this section. Please enter all quantities in this section in KGs**

M/C/E	Method Used		T (Total) KG/Year
	Method Code	Designation or Description	
	Emission Point 1		0.0
			0.0

) then click the delete button

**Please enter all quantities in this section in KGs**

M/C/E	Method Used		T (Total) KG/Year
	Method Code	Designation or Description	
	Emission Point 1		0.0
			0.0

) then click the delete button

**Please enter all quantities in this section in KGs**

M/C/E	Method Used		T (Total) KG/Year
	Method Code	Designation or Description	
	Emission Point 1		0.0
			0.0

) then click the delete button

03/04/2012 12:21

OT be submitted under AER / PRTR Reporting as this only concerns Releases from your facility

QUANTITY	
A (Accidental) KG/Year	F (Fugitive) KG/Year
0.0	0.0

QUANTITY	
A (Accidental) KG/Year	F (Fugitive) KG/Year
0.0	0.0

QUANTITY	
A (Accidental) KG/Year	F (Fugitive) KG/Year
0.0	0.0



4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

| PRTR# : W0082 | Facility Name : Greenstar Environmental Services Ltd | Filename : w0082\_2011.

03/04/2012 12:21

**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](#)

##### SECTION A : PRTR POLLUTANTS

RELEASERS TO LAND	
POLLUTANT	
No. Annex II	Name

\* Select a row by double-clicking on the Pollutant Name (Column B).

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

RELEASERS TO LAND	
POLLUTANT	
Pollutant No.	Name

\* Select a row by double-clicking on the Pollutant Name (Column B).

METHOD			Please enter all quantities	
M/C/E	<a href="#">Method Code</a>	Method Used	Designation or Description	Emission Point 1
				0.0

) then click the delete button

METHOD			Please enter all quantities	
M/C/E	<a href="#">Method Code</a>	Method Used	Designation or Description	Emission Point 1
				0.0

) then click the delete button

<b>in this section in KGs</b>	
<b>QUANTITY</b>	
T (Total) KG/Year	A (Accidental) KG/Year
0.0	0.0

<b>in this section in KGs</b>	
<b>QUANTITY</b>	
T (Total) KG/Year	A (Accidental) KG/Year
0.0	0.0





# **APPENDIX 2**

## Procedures List



<b>Doc. No.: Control</b>	<b>Revision No.: As Shown</b>		<b>Issue Date: As Shown</b>
	Malcolm Dowling – Group Environmental Manager	<b>Page 1 of 4</b>	
<b>Approved By:</b>	Oliver Callan – Group H&S Manager		

**Integrated Procedures - IP**

IP-01	Document & Record Control Procedure	Rev 01, 05/07/10
IP-02	Health & Safety Risk Assessment Procedure	Rev 01, 05/07/10
IP-03	Environmental Aspects & Impacts Procedure	Rev 01, 05/07/10
IP-04	Legal & Regulatory Requirements Procedure	Rev 02, 05/11/10
IP-05	Objectives, Targets & Management Programmes Procedure	Rev 01, 05/07/10
IP-06	Competence, Training & Awareness Procedure	Rev 01, 05/07/10
IP-07	Communication & Consultation Procedure	Rev 01, 05/07/10
IP-08	Monitoring, Measurement & Improvement Procedure	Rev 01, 05/07/10
IP-09	Evaluation of Compliance Procedure	Rev 02, 15/09/11
IP-10	Non Conformances, Corrective/Preventive Actions Procedure	Rev 03, 01/02/11
IP-11	Internal Audit Procedure	Rev 02, 07/06/11
IP-12	Management Review Procedure	Rev 01, 05/07/10
IP-13	Control of Contractors/Visitors Procedure	Rev 02, 29/10/10
IP-14	Health & Safety & Environmental Monitoring	Rev 02, 29/10/10
IP-15	Emergency Preparedness & Response Procedure	Rev 02, 01/02/11

**Safety Procedures - SP**

SP-01	Permit to Work Procedure	Rev 01, 05/07/10
SP-02	Maintenance & Calibration Procedure	Rev 03, 04/04/11
SP-03	Mobile Plant Procedure	Rev 01, 05/07/10
SP-04	Fork Truck Procedure	Rev 01, 05/07/10
SP-05	Operation of Fixed Plant Procedure	Rev 01, 05/07/10
SP-06	Lock Out / Tag Out Procedure	Rev 01, 05/07/10
SP-07	Health & Safety Notification Procedure	Rev 01, 05/07/10
SP-08	Motor Claim Notification Procedure	Rev 01, 01/02/11
SP-09	MSW Shredder routine Maintenance & Clearing of Blockages Procedure (SCGT)	Rev 01, 01/12/11
SP-10	Weighbridge & Tipping Procedure (SCGT)	Rev 01, 01/12/11



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<b>Approved By:</b>	Malcolm Dowling – Group Environmental Manager	<b>Page 2 of 4</b>
	Oliver Callan – Group H&S Manager	

**Environmental Procedures - EP**

EP-01	Office Waste & Energy Management Procedure	Rev 01, 05/07/10
EP-02	Decommissioning and Aftercare Procedure	Rev 02, 14/09/11
EP-03	Environment Communications Procedure	Rev 02, 13/09/10
EP-04	Waste Permits & Licences Procedure	Rev 01, 05/07/10
EP-05	Waste Acceptance Procedure	Rev 01, 05/07/10
EP-06	Unacceptable Waste Procedure	Rev 01, 05/07/10
EP-07	Waste & Material Storage Procedure	Rev 01, 05/07/10
EP-08	Waste Processing Procedure	Rev 01, 05/07/10
EP-09	Site Infrastructure Procedure	Rev 01, 05/07/10
EP-10	Nuisance Management Procedure (Site Specific)	(Site Specific)
EP-11	Civic Amenity Site Procedure	Rev 01, 05/07/10