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ANNUAL ENVIRONMENTAL REPORT
GREENSTAR ENVIRONMENTAL SERVICES LIMITED
MATERIALS RECOVERY FACILITY
DOCK ROAD, LIMERICK
LICENCE NO. W0082-02
JANUARY 2010 – DECEMBER 2010

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APPENDIX 1 - European Pollutant Release and Transfer Register

1. INTRODUCTION

This is the 2010 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 2010 to December 2010. The AER has been prepared in compliance with Condition 10.6 of the licence.

The content is based on Schedule F of the Waste Licence and the report format follows guidelines set in the “Guidance Note for Annual Environmental Report” issued by the Environmental Protection Agency (Agency)¹.

¹ EPA (Environmental Protection Agency) 1999 Waste Licensing – Draft Guidance on Environmental Management Systems and Reporting to the Agency

2. SITE DESCRIPTION

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. The facility is located adjacent to the N69, on the main Limerick to Foynes road.

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 licensed 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 at the facility.

The maximum tonnage 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;
- 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 to the facility both by 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 delivered to the facility as a single waste stream is shredded onsite. Biodegradable wastes suitable for composting which is accepted at the facility 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 waste loads are inspected, plasterboard diverted to an internal skip and the remainder off loaded into an external C&D bay. The majority of the incoming C&D material 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 as 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 for waste processing.

Table 2.1 Existing Plant

No.	Plant	Operational Capacity tpd	Standby Capacity tpd
1	360° Komatsu Excavator	100	70
1	Volvo Loading Shovel	500	350
2	Doppstadt shredders	200	150
1	Doppstadt trommel	200	140

3. EMISSION MONITORING

The monitoring required by Condition 7 and Schedule D of the licence includes surface water, wastewater, groundwater, dust and noise monitoring. The monitoring locations are shown on Figure 3.1. As per the licence, monitoring results are included in reports submitted to the Agency at quarterly intervals. An overview of the results of the monitoring 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 boundary of the site. The drain discharges to the Ballinacurra Creek, which ultimately discharges to the Shannon River.

Surface water monitoring is required at the outfall points FE1A and FE1B following treatment from a split interceptor. 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). The monitoring locations are shown on Figure 3.1. Monitoring was carried out bi-annually in accordance with the licence until June 2010 when the monitoring frequency was increased to monthly following a request from the Agency. It was not possible to collect samples at FE1A in September, November and December 2010 as there was no discharge at the monitoring location. It was not possible to take a sample at FE1B in October as there was no discharge at that monitoring location.

The emission limit set for BOD was exceeded at FE1A and FE1B in June, July and August. The emission limit for total suspended solids was exceeded at FE1A in July, August and October and in July and August at FE1B. The emission limit for ammonia was exceeded at FE1A and FE1B in July and August. The emission limit set for TSS was exceeded at FE1A in October 2010. The Agency were notified of these exceedances in accordance with Condition 8.1 of the Licence. The results are included on Tables 3.1 to 3.5.

The October 2010 monitoring results showed a significant improvement in surface water quality discharges compared to previous monitoring. The BOD, ammoniacal nitrogen and mineral oil results were significantly below the ELVs. This reflected the extensive jetting and de-sludging of all surface water pipelines, sumps and oil interceptors carried out in July and again in September 2010. Although there was an exceedance of the ELV for suspended solids, there was no impact downstream of the facility (WS10) and further routine cleaning of the system has reduced the levels of suspended solids as will be shown in the Q1 2011 report.

Table 3.1 Surface Water Monitoring Results 2010 FE1A

Parameter	Units	June '10	July '10	Aug '10	Oct '10	ELV*	EQS
pH	pH units	7.2	7.55	7.28	7.06	-	
BOD	mg/l	52	65	107	12	25	
Total Suspended Solids	mg/l	46	572	948	109	60	
Ammonia Nitrogen	mg/l	1.4	10.44	25	0.66	4	
Fats Oils Grease	mg/l	5	10	32	<0.01	-	-
Mineral Oils	mg/l	<0.01	<0.01	<0.01	<0.01	5	

* Applies to discharges – FE1A & B only.

Table 3.2 Surface Water Monitoring Results 2010 FE1B

Parameter	Units	June '10	July '10	Aug '10	Oct '10	ELV*	EQS
pH	pH units	7.34	6.13	7.02	#	-	
BOD	mg/l	106	68	101	#	25	
Total Suspended Solids	mg/l	35	420	1512	#	60	
Ammonia Nitrogen	mg/l	2.6	27.2	25	#	4	
Fats Oils Grease	mg/l	3	14	32	#	-	-
Mineral Oils	mg/l	<0.01	<0.01	<0.01	#	5	

* Applies to discharges – FE1A & B only.

- No flow at time of sampling

Table 3.3 Surface Water Monitoring Results 2010 WS9

Parameter	Units	June '10	July '10	Aug '10	Oct '10
pH	pH units	7.44	7.45	7.26	7.50
BOD	mg/l	20	11	4	2
Total Suspended Solids	mg/l	30	14	19	8
Ammonia Nitrogen	mg/l	0.64	0.89	<0.01	0.05
Fats Oils Grease	mg/l	<1	3	<1	<0.01
Mineral Oils	mg/l	<0.01	<0.01	<0.01	<0.01

Table 3.4 Surface Water Monitoring Results 2010 WS10

Parameter	Units	June '10	July '10	Aug '10	Oct '10
pH	pH units	7.33	7.16	7.36	7.49
BOD	mg/l	46	26	4	6
Total Suspended Solids	mg/l	380	38	3	5
Ammonia Nitrogen	mg/l	1.4	2.3	<0.01	0.26
Fats Oils Grease	mg/l	8	4	4	<0.01
Mineral Oils	mg/l	<0.01	<0.01	<0.01	<0.01

Table 3.5 Surface Water Monitoring Results 2010 MH-5

Parameter	Units	June '10	July '10	Aug '10	Oct '10	ELV*	EQS
pH	pH units	6.1	6.04	#	7.22	-	
BOD	mg/l	654	225	#	12	25	
Total Suspended Solids	mg/l	410	518	#	35	60	
Ammonia Nitrogen	mg/l	14.0	2.4	#	0.3	4	
Fats Oils Grease	mg/l	35	14	#	18.91	-	-
Mineral Oils	mg/l	<0.01	<0.01	#	10.08	5	
Arsenic - dissolved	mg/l	0.022	0.0011	#	<0.0025	-	25
Antimony – dissolved	mg/	0.0013	0.0012	#	-		
Boron - dissolved	mg/l	-	-	#	0.111	-	2000
Cadmium - dissolved	mg/l	0.0026	0.0038	#	<0.0005	-	1.5
Chromium - dissolved	mg/l	0.061	0.0039	#	<0.0015	-	1.5
Copper - dissolved	mg/l	0.020	0.011	#	0.054	-	30
Mercury - dissolved	mg/l	<0.0002	<0.0002	#	<0.001	-	0.07
Nickel - dissolved	mg/l	0.017	0.016	#	0.019	-	20
Lead - dissolved	mg/l	0.014	0.052	#	<0.005	-	7.2
Selenium - dissolved	mg/l	0.0014	0.0174	#	<0.003	-	-
Zinc - dissolved	mg/l	<0.001	0.003	#	0.036	-	100
Barium - dissolved	mg/l	0.0162	0.0174	#	0.015	-	100
Beryllium - dissolved	mg/l	-	-	#	<0.0005	-	-
Vanadium - dissolved	mg/l	-	-	#	0.0016	-	-

- No flow at time of sampling

3.2 Foul water Monitoring

Foul water emissions are treated in the on-site Klargestor treatment plant and discharge to a 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, as shown on Figure 3.1. The truck wash was not operational in Q3 & Q4 2010, a sample was collected in Q3 but the sample location was dry in Q4. The monitoring results are included on Tables 3.6 and 3.7.

The results are compared to the performance standard set in the EPA Waste Water Treatment Manual Guidelines. The results show that the discharge is of good quality and with the exception of TSS in January. The discharge from this facility goes to a percolation area and ultimately to ground and it is understood that the area is not categorised as nutritionally sensitive.

Table 3.6 Foul water Monitoring Results 2010 – FE2

Parameter	Units	Jan	Feb	Mar	Apr	Jun	Jul	Aug	Oct	Performance Standards
pH	pH units	6.04	6.94	7.6	6.7	7.12	7.4	7.29	8.08	-
BOD	mg/l	6	2	<2	3	4	<2	1	1	20
TSS	mg/l	42	7	<5	<5	11	12	16	<10	30
Ammoniacal Nitrogen	mg/l	<0.01	0.40	<0.55	0.28	0.69	0.27	2.91	0.37	20
Fats Oils Grease	mg/l	<1	<1	8	20	<1	5	<1	<0.01	-
Sulphate	mg/l	16	12.2	65.6	62	14.1	94	39.8	87.08	-
Total Phosphorous	mg/l	5.1	1.05	4.07	2.4	6.6	2.9	8.16	4.102	-
Total Nitrogen	mg/l	5.2	30.0	23.1	33.3	4.1	10.3	27.0	25.0	-

Table 3.7 Foul water Monitoring Results 2010 – Truck Wash

Parameter	Units	Jan	Feb	Mar	Apr	Jun	Jul	Aug	Oct
pH	pH units	5.12	6.07	7.2	6.3	7.0	7.3	7.38	-
BOD	mg/l	407	240	1088	626	213	99	32	-
TSS	mg/l	120	57	84	870	80	15	45	-
Ammoniacal Nitrogen	mg/l	<0.01	5	12	6.14	2.6	6.93	5.72	-
Fats Oils Grease	mg/l	4	<1	4	55	11	12	4	-
Sulphate	mg/l	181.7	69.7	894	760	11.6	368	26.7	-
Total Phosphorous	mg/l	1.85	0.26	0.315	2.61	0.05	0.4	3.06	-
Total Nitrogen	mg/l	6.0	15.0	27.8	17.8	8.6	15.8	8	-

3.3 Groundwater Monitoring

Groundwater monitoring is carried out bi-annually in accordance with Schedule D at three wells, GWM1, GWM2 and GWM3, whose locations are shown on Figure 3.1. 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. There are no emission limits or trigger levels set in the licence and so the results are compared to the Interim Guideline Values (IGV) on groundwater quality published by the Agency. The results are shown on Table 3.8 and 3.9.

The levels are all below their respective IGVs with the exception of ammoniacal nitrogen at GWM1 in May 2010 and conductivity at GWM2 in May. The IGV levels represent typical background or unpolluted conditions. However, the Agency recognises that levels higher

than the IGV may occur naturally depending on the local geological and hydrogeological conditions.

Table 3.8 Groundwater Monitoring Results –May 2010

Parameter	Units	GWM1	GWM2	GWM3	IGV
BOD	mg/l	3	4	4	-
TSS	mg/l	532	362	254	-
Dissolved Oxygen	%	4.1	58.9	87.4	NAC
Oils, Fats & Greases	mg/l	1.9	2	1.3	-
Total Phosphorus	mg/l	0.6	0.08	0.03	-
Ammoniacal Nitrogen	mg/l	3.2	<0.01	0.01	0.12
Conductivity	mS/cm	0.914	1.343	0.888	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 3.9 Groundwater Monitoring Results – September 2010

Parameter	Units	GWM1	GWM2	GWM3	IGV
pH	pH Units	7.46	7.67	7.95	6.5-9.5
BOD	mg/l	11	2	<1	-
TSS	mg/l	2184	339	127	-
Oils, Fats & Greases	mg/l	<0.01	<0.01	<0.01	-
Mineral Oil	mg/l	<0.01	<0.01	<0.01	0.01
TPH	mg/l	<0.01	<0.01	<0.01	0.01
Aliphatic Hydrocarbons	mg/l	<0.01	<0.01	<0.01	-

3.4 Noise Monitoring

The annual noise survey was carried out in compliance with Schedule D of the licence in September 2010. The full monitoring report was submitted to the Agency on the 22nd December 2010. The monitoring locations include four boundary locations (NI1 – NI4) as shown on Figure 3.1. 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.

Noise levels at all four monitoring locations were greater than the 55 dB limit set in the licence, however it was determined that the facility not the sole contributor to these levels and is not a noise nuisance in the local environment. There are significant contributions to the noise environment from adjacent neighbouring activities. It is unlikely that noise levels attributable to the site of greater than 55 dB could be recorded beyond the site boundaries.

Table 3.10 Noise Monitoring Results 2010

Station	Time	LAeq 30 min dB	LAF10 30 min dB	LAF90 30 min dB	Noise audible
NI1	10.33- 11.03	56	55	45	The dominant source of noise was facility/plant noise, e.g. truck movements, waste processing activities within the facility. Significant contributions from external sources including a distant mid-frequency noise (unidentified), birdsong and wind-generated noise. Noise contribution from low-frequency noise from adjacent building (probably extraction fans).
NI2	11.07- 11.37	60	56	45	Dominant noise source was facility generated operational noise. Work immediately adjacent to the monitoring position including timber-pallet movement and collection and other facility truck movements. Other sources of noise included a low frequency from the nearest on-site building probably due to extraction fans and wind generated noise.
NI3	09.57- 10.27	55	57	47	Primary source of noise was possibly an engine-noise from a neighbouring site. Facility noise contributing to the noise environment included radio noise from the recycling plant and intermittent noise from skip unloading. Birdsong and wind generated noise were also discernable.
NI4	09.20- 09.50	73	77	63	GES emissions were inaudible. Dominant noise source at this location was road traffic on the Dock Road.

3.5 Dust Monitoring

Dust monitoring was carried out on three occasions at three on-site locations (DM1, DM2 and DM3) in May-June, July and October 2010 in accordance with Schedule D of the licence. The results of the monitoring are included on Table 3.11.

The dust emission limit (350 mg/m²/day) was not exceeded at any monitoring location during the monitoring period.

Table 3.11 Dust Monitoring Results 2010

	Units	May – June	July	October	Deposition Limit Value
DM1	mg/m ² /day	116.1	136.7	124.5	350
DM2	mg/m ² /day	92.8	66.7	90.2	350
DM3	mg/m ² /day	306.1	182.2	80.1	350

4. SITE DEVELOPMENT WORKS

4.1 Specified Engineering Works

There were no Specified Engineering Works carried out in 2010. Repairs to the surface water drainage system will be carried out in 2011. It is proposed to introduce a civic amenity area at the facility in 2011. Agreement has been reached with the Agency in relation to this.

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)	40,000 litres
Electricity	62,600 Units
Hydraulic Oil	360 litres
Engine Oil	120 litres
Mains Water	234,000 litres

4.3 Bund Integrity Testing & Pipeline

Condition 3.11.5 of the licence requires that tank and bund testing be carried out at least once every three years. The bunds were tested in October 2009 for capacity and adequacy and passed fit for purpose. The Licence was technically amended on February 2nd 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 work was carried out in Q4 2010 and will be submitted to the Agency in Q2 2011.

5. WASTE RECEIVED AND CONSIGNED FROM THE FACILITY

Table 5.1 shows the total quantities of waste received and consigned from the facility in 2010. Table 5.2 shows the total quantities of waste received and consigned in 2009. 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.

The total quantity of waste received was 34,835.30 tonnes. The total waste consigned was 34,476.86 tonnes. Approximately 672 tonnes of waste remained on site at the end of 2010 which will be consigned in 2011.

The recovery rate for the facility is estimated at 61.62%. All the wastes consigned from the site went to recovery and disposal facilities agreed with the Agency.

Table 5.1 Waste Received & Consigned 2010

EWC	Description	Waste In	Waste Out
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	
	Total Received	34,835.30	
	Total Consigned		34,476.86.
	Total Recovered		21,234.42
	Total Disposed		13,233.44
	Recovery Rate		61.62%

Table 5.2 Waste Received & Consigned 2009

EWC	Description	Waste In	Waste Out
15 01 01	Cardboard & Paper Packaging	3403	9326
15 01 02	Plastic Packaging	2450	1413
15 01 06	Mixed Packaging	8379	
15 01 07	Glass Packaging	436	432
17 01 07	C&D	1331	1353
19 08 05	Sludge	4729	4840
20 01 36	WEEE	1	4
20 01 38	Timber	1370	1763
20 01 40	Metal	856	1293
20 01 08	Food & Green Waste	170	153
20 03 01	Mixed Municipal Waste	19411	18463
20 03 01	Mixed Dry Recyclables		2507
	Total Received	42,536	
	Total Consigned		41,547
	Total Recovered		18,281
	Total Disposed		23,266
	Recovery Rate		44%

Table 5.3 Waste Received & Consigned

	2009	2008
Total Received	42,536	58,203
Total Consigned	41,547	58,654
Total Recovered	18,281	27,779
Total Disposed	23,266	30,875
Recovery Rate	44%	47.36%

6. ENVIRONMENTAL INCIDENTS AND COMPLAINTS

6.1 Incidents

The routine monitoring programme identified five incidents during the reporting period. One incident was in relation to the foul water sample and four in relation to the surface water samples.

In January 2010 the suspended solids limit set in the waste water treatment manual was exceeded at FW-1. The emission limit set for BOD was exceeded at surface water discharge monitoring locations FE1A and FE1B in June, July and August. The emission limit for total suspended solids was exceeded at FE1A in July, August and October at FE1A and in July and August at FE1B. The emission limit for ammonia was exceeded at FE1A and FE1B in July and August. The emission limit set for TSS was exceeded at FE1A in Q4 2010. The Agency were informed of these exceedances in accordance with Condition 8.1 of the licence.

Significant cleaning and desludging of the surface water drainage system was carried out in Q3 & Q4 2010 and it is expected that this will lead to improvements in the quality of the surface water discharged from the facility. The results from Q1 2011 show that the surface water quality in the discharge is now compliant, as will be discussed in the Q1 2011 report. Although there were some exceedances of the surface water discharge ELVs the quality of the receiving water downstream of the site was not impacted by site activities.

6.2 Register of Complaints

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

7. ENVIRONMENTAL DEVELOPMENT & CONTROL

7.1 Environmental Management Programme Report

GES has developed an Environmental Management System (EMS) for the facility. In 2011 the facility will strive to gain ISO 14001 & OHSAS 18001 certification. In achieving this, the facility will operate under an Integrated Environmental, Health & Safety Management System going forward. With the exception of the Schedule of Objectives and Targets, which are amended annually as part of the AER, and a revision of a number of the operating procedures, the environmental management programme was not amended in 2010. In 2011 the facility will receive an updated and comprehensive list of procedures suitable for licence & legal requirements in order to gain ISO & OHSAS certification which will be submitted to the Agency in the 2011 AER. The schedule of Objectives and Targets, including their status for 2010 (Table 7.1), as well as the proposed Objectives and Targets for 2011 (Table 7.2) are presented below.

7.1.1 Site Management Structure

Management and Staffing structure: -

Name: Mary Dwane,

Responsibility: Depot Manager

Experience: 11 years experience waste management experience; has completed the FÁS waste management course.

Name: Michael Whelan,

Responsibility: Facility Manager

Experience: 11 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 2010 are available in the facility office.

7.2 Environmental Management Programme

7.2.1 Schedule of Objectives 2010

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 – Redefine Licence Boundary

Postponed due to sale of company. Issue to be reviewed 2011.

Objective 2 – Continue to increase recycling rates at the facility

Water clarification sludge was used for landfill cover during 2010. Other sludges were dispatched for composting, rather than disposal. C&I Dry Wastes were dispatched to MRF after hard recyclables removal. Street sweepings were also trialled in MRF to ascertain viability of plastics recovery. The quantity of tonnes consigned to Landfill fell by 43% on 2009 figures. Recycling rate is now 62% v 47% in 2009.

Objective 3 – Improve Emergency Response / Emissions to Surface Water

Quarterly monitoring of surface water was increased to monthly from June 2010. Comprehensive drainage maintenance was carried out in Q3 & Q4 2010 which included de-sludging, integrity testing and defect identification was initiated in July 2010 and all actions required were completed in February 2011. The Emergency Response Plan will be updated in Q2 2011.

Objective 4 – Legislative Compliance

Acceptance criteria for waste water was agreed with Limerick City Council Main Drainage Plant Operator June 2010. Limerick City Council withdrew its previously-given approval to connect with its Main Drainage Plant. GES is in discussions with the Agency regarding alternatives.

7.2.2 Schedule of Objectives 2011

A schedule of targets and objectives for 2011 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 accrued over €3,000,000 in funds, to provide for any potential environmental liabilities. GES has adequate insurance cover for environmental liabilities to €6,350,000 for any one occurrence, which will apply to “sudden identifiable and unintended incidents”.

Table 7.1 Objectives and Targets for 2010

No	Objective	Target	Responsibility	Timescale
1	Redefine Licence Boundary	Discussions to be held with new owners regarding their plans for a possible Licence Review	Responsible Manager	December 2010
2	Continue to Increase Recycling Rates at the facility	Increase organic waste recovery and find alternative uses for other wastes (e.g. water clarification sludge for landfill cover rather than disposal)	Area Manager	Ongoing
3	Improve Emergency Response/ Emissions to Surface Water	Complete training/retraining for all relevant staff to the ERP in 2010	Environmental Management Team	December 2010
4	Legislative Compliance	Comply with terms of Licence W0082-02	All	Ongoing

Table 7.2 Schedule of Objective and Targets 2011

No	2011 Objective	Target	Responsibility	Status
1	Awareness and Training	Continue to ensure that appropriate training is carried out specific to all site personnel as per the Company's established Training Matrix.	Site Management	Q4 2011
2	Energy & Resource Consumption	Summarise energy and resource usage on a quarterly basis with a view to reducing consumption	Site Management	Q4 2011
3	Review and Assess the Effectiveness of Nuisance Control Procedures	Continually review and assess all nuisance control procedures to ensure minimal impact on the surrounding area.	Site Management	Q4 2011
4	Pollution Prevention	Strive to ensure that monitoring results comply with the licence limits and investigate any exceedances of emission limit values.	Site Management	Q4 2011
		Continue to ensure the integrity and maintenance of all drainage infrastructure.	Site Management	Q4 2011
5	Civic Amenity	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	Q2 2011
6	ISO 14001	Certification to ISO 14001	Site Management	Q3 2011

7.5 Nuisance Controls

GES has contracted a vermin control company to carry out nuisance control at the facility. Rentokil Initial Ltd. provide and maintain forty bait boxes at the facility and also provide for the treatment of insects at the facility. 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.

7.7 Wastewater Volumes

In 2010 35.1 tonnes of interceptor liquids and sludge were removed off site to an appropriate licensed facility.

8. OTHER REPORTS

No other reports were specified by the Agency.

APPENDIX 1

European Pollutant Release and Transfer Register



Environmental Protection Agency

| PRTR# : W0082 | Facility Name : Greenstar Environmental Services Ltd | Filename : W0082_2010.xls | Return Year : 2010 |

[Guidance to completing the PRTR workbook](#)

AER Returns Workbook

Version 1.1.11

REFERENCE YEAR	2010
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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
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
AER Returns Contact Name	Garrett Walsh
AER Returns Contact Email Address	garrett.walsh@veolia.ie
AER Returns Contact Position	Environmental Officer
AER Returns Contact Telephone Number	061-304545
AER Returns Contact Mobile Phone Number	086-1705034
AER Returns Contact Fax Number	061-225964
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	0
User Feedback/Comments	
Web Address	

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?	
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_2010.xls | Return Year : 2010 |

31/03/2011 16:08

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:

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](#)

| PRTR# : W0082 | Facility Name : Greenstar Environmental Services Ltd | Filename : W0082_2010.xls | Return Year : 2010 |

31/03/2011 16:09

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 : Greenstar Environmental Services Ltd | Filename : W0082_2010

31/03/2011 16:09

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 : Greenstar Environmental Services Ltd | Filename : W0082_2010.xls | Return Year : 2010 |

31/03/2011 16:09

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 : Greenstar Environmental Services Ltd | Filename : W0082_2010.xls | Return Year : 2010 |

31/03/2011 16:09

Please enter all quantities on this sheet in Tonnes

3

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	15 01 01	No	2849.43	paper and cardboard packaging	R13	M	Weighed	Offsite in Ireland	Bailey Waste Recycling,WPT-FG-08-0002-01		Rosemount Business Park,Ballycoolin,Dublin 11,,Ireland			
To Other Countries	15 01 01	No	3939.69	paper and cardboard packaging	R3	M	Weighed	Abroad,China			
To Other Countries	15 01 02	No	689.9	plastic packaging	R3	M	Weighed	Abroad,China			
Within the Country	15 01 03	No	421.33	wooden packaging	R3	M	Weighed	Offsite in Ireland	Bailey Waste Recycling,WPT-FG-08-0002-01		Rosemount Business Park,Ballycoolin,Dublin 11,,Ireland			
Within the Country	15 01 03	No	7.42	wooden packaging	R3	M	Weighed	Offsite in Ireland,Limerick ,Ireland			
Within the Country	15 01 03	No	19.34	wooden packaging	R3	M	Weighed	Offsite in Ireland	Miltown Composting Systems,W0270-01		Miltownmore,Fethard,Co. Tipperary,,Ireland			
Within the Country	15 01 03	No	758.42	wooden packaging	R3	M	Weighed	Offsite in Ireland	Eirebloc,CK(S) 503/07		Lissarda,Co. Cork,....,Ireland			
Within the Country	15 01 03	No	79.26	wooden packaging	R3	M	Weighed	Offsite in Ireland	Finsa,P0022-02		Scariff,Co. Clare,....,Ireland			
Within the Country	15 01 03	No	36.1	wooden packaging	R3	M	Weighed	Offsite in Ireland	Clare County Council,W0109-01		Inagh Landfill,Ballybeg,Co. Clare,,Ireland			
Within the Country	15 01 03	No	707.24	wooden packaging	R3	M	Weighed	Offsite in Ireland	Cremin Compost,WF-LK-07-23(A)		Broadford,Co. Limerick,....,Ireland			
Within the Country	15 01 04	No	270.0	metallic packaging	R4	M	Weighed	Offsite in Ireland	Hegarty Metals,WP05-04		Ballysimon Road,Limerick,....,Ireland			
Within the Country	15 01 04	No	161.36	metallic packaging	R4	M	Weighed	Offsite in Ireland	MSM at Greenstar Ltd.,W0079-01		Cookstown Industrial Estate,Tallaght,Dublin 24,,Ireland			
Within the Country	15 01 04	No	51.2	metallic packaging	R4	M	Weighed	Offsite in Ireland	KMK Metals,W0113-03		Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland			
Within the Country	15 01 06	No	2993.88	mixed packaging	R5	M	Weighed	Offsite in Ireland	Killarney Waste Disposal,W0217-01		Kerry,....,Ireland			
Within the Country	15 01 07	No	235.32	glass packaging	R5	M	Weighed	Offsite in Ireland	Tullagower Quarries,004/08/WBP/CL		Kilrush,Co. Clare,....,Ireland			
Within the Country	16 01 03	No	16.0	end-of-life tyres	R5	M	Weighed	Offsite in Ireland	Crumb Rubber,WP 2007/01		Dromiskin,Dundalk,Co. Louth,,Ireland			
Within the Country	17 08 02	No	94.26	gypsum-based construction materials other than those mentioned in 17 08 01	R5	M	Weighed	Offsite in Ireland	Recycleworks,WPT 112		St. Margarets,Co. Dublin,....,Ireland			
Within the Country	17 09 04	No	2654.9	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 (N) 277/05		Mourneabbey,Co. Cork,....,Ireland			
Within the Country	19 08 05	No	8.46	sludges from treatment of urban waste water	R3	M	Weighed	Offsite in Ireland	Acorn Recycling Ltd.,W0249-01		Ballybeg Composting Facility,Littleton,Co. Tipperary,,Ireland			
Within the Country	19 08 05	No	77.02	sludges from treatment of urban waste water	R3	M	Weighed	Offsite in Ireland	Cremin Compost,WF-LK-07-23(A)		Broadford,Co. Limerick,....,Ireland			
Within the Country	19 08 05	No	14.66	sludges from treatment of urban waste water	R3	M	Weighed	Offsite in Ireland	Pat O'Donnell,WM/WP/06/03b		Ballypatrick,Clonmel,Co. Tipperary,,Ireland			
Within the Country	19 09 02	No	2946.61	sludges from water clarification	R3	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0178-01		Connaught Regional Landfill,Ballinasloe,Co. Galway,,Ireland			
Within the Country	19 09 02	No	830.78	sludges from water clarification	R3	M	Weighed	Offsite in Ireland	KTK Landfill,W0081-03		Kilcullen,Co. Kildare,....,Ireland			
Within the Country	19 12 03	No	22.66	non-ferrous metal	R4	M	Weighed	Offsite in Ireland	Bailey Waste Recycling,WPT-FG-08-0002-01		Rosemount Business Park,Ballycoolin,Dublin 11,,Ireland			
Within the Country	19 12 03	No	132.34	non-ferrous metal	R4	M	Weighed	Offsite in Ireland	Hegarty Metals,WP05-04		Ballysimon Road,Limerick,....,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 : 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 Recoverer/Disposer	Non Haz Waste: Address of Recoverer/Disposer		
Within the Country	19 12 03	No	19.92	non-ferrous metal	R4	M	Weighed	Offsite in Ireland	MSM at Greenstar Ltd.,W0079-01	Cookstown Industrial Estate,Tallaght,Dublin 24,,Ireland		
Within the Country	19 12 03	No	92.94	non-ferrous metal other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12	R4	M	Weighed	Offsite in Ireland	(Davis Recycling) Hammond Lane Metal Co. Ltd.,WFP-CK-10-0077-02	Ringaskiddy,Co. Cork,,Ireland		
Within the Country	19 12 12	No	840.68	11	R13	M	Weighed	Offsite in Ireland	Greenstar Limited,W0183-01	Millennium Business Park,Grange,Ballycoolin,Dubl in 11,Ireland		
Within the Country	20 01 01	No	49.44	paper and cardboard	R13	M	Weighed	Offsite in Ireland	Bailey Waste Recycling,WPT-FG-08-0002-01	Park,Ballycoolin,Dublin 11,,Ireland		
To Other Countries	20 01 01	No	18.76	paper and cardboard	R3	M	Weighed	Abroad,United Kingdom		
Within the Country	20 01 08	No	44.28	biodegradable kitchen and canteen waste	R3	M	Weighed	Offsite in Ireland	Acorn Recycling Ltd.,W0249-01	Facility,Littleton,Co. Tipperary,,Ireland		
Within the Country	20 01 08	No	49.7	biodegradable kitchen and canteen waste	R3	M	Weighed	Offsite in Ireland	Miltown Composting Systems,W0270-01	Miltownmore,Fethard,Co. Tipperary,,Ireland		
Within the Country	20 01 08	No	82.36	biodegradable kitchen and canteen waste	R3	M	Weighed	Offsite in Ireland	Cremin Compost,WF-LK-07-23(A)	Broadford,Co. Limerick,,Ireland		
Within the Country	20 01 36	No	2.84	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	R4	M	Weighed	Offsite in Ireland	KMK Metals,W0113-03	Offaly,Ireland		
Within the Country	20 03 01	No	39.56	mixed municipal waste	D5	M	Weighed	Offsite in Ireland	Limerick County Council,W0017-01	Gortnadroma Landfill,Co. Limerick,,Ireland		
Within the Country	20 03 01	No	11070.08	mixed municipal waste	D5	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0178-01	Connaught Regional Landfill,Ballinasloe,Co. Galway,,Ireland		
Within the Country	20 03 01	No	1014.44	mixed municipal waste	D5	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0146-01	Knockharley Landfill,Kentstown,Co. Meath,,Ireland		
Within the Country	20 03 01	No	898.36	mixed municipal waste	D5	M	Weighed	Offsite in Ireland	Bord Na Mona,W0201-01	Drehid Landfill,Co. Kildare,,Ireland		
Within the Country	20 03 03	No	111.04	street-cleaning residues	D5	M	Weighed	Offsite in Ireland	Bord Na Mona,W0201-01	Drehid Landfill,Co. Kildare,,Ireland		
Within the Country	20 03 03	No	99.96	street-cleaning residues	D5	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0146-01	Knockharley Landfill,Kentstown,Co. Meath,,Ireland		
Within the Country	20 03 03	No	24.92	street-cleaning residues	R13	M	Weighed	Offsite in Ireland	Greenstar Limited,W0188-01	Greenogue Business Park,Rathcoole,Co. Dublin,,Ireland		

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