Granary House
Rutland Street
Cork

Tel. [021]4321521
Fax. [021]4321522

environmental management for business

ANNUAL ENVIRONMENTAL REPORT

GREENSTAR LTD.

INTEGRATED WASTE MANAGEMENT FACILITY

FASSAROE, BRAY,

COUNTY WICKLOW

LICENCE NO. W0053-03

JANUARY – DECEMBER 2012

Prepared For: -

Greenstar Ltd.,
Fassaroe,
Bray,
Co. Wicklow

Prepared By: -

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

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Project	Annual Environmental Report 2012			
Client	Greenstar Ltd. W0053-03			
Report No	Date	Status	Prepared By	Reviewed By
0480605	19/03/2013	Draft	Barry Sexton MSc.	Michael Watson MA MCIWM.
0480605	28/03/2013	Final	Barry Sexton MSc.	Michael Watson MA MCIWM.

TABLE OF CONTENTS

PAGE

1. INTRODUCTION

This is the 2012 Annual Environmental Report (AER) for the Greenstar Ltd. (Greenstar), Materials Recovery & Transfer facility (MRF) at Fassaroe, County Wicklow. It covers the period from the 1st January 2012 to the 31st December 2012.

The content is based on Schedule G of the Waste Licence (Reg. No. W0053-03) and the report format follows guidelines set in the "Guidance Note for Annual Environmental Report" issued by the Environmental Protection Agency (Agency)[1]. Account is also taken of the AER Draft Guidance Document and AER Information Templates issued by the Agency in January 2013[2].

[1] EPA (Environmental Protection Agency) 1999 Waste Licensing – Draft Guidance on Environmental Management Systems and Reporting to the Agency

[2] EPA (Environmental Protection Agency) 2012 Draft AER Guidance Document

2. SITE DESCRIPTION

2.1 Site Location & Layout

The facility is located close to the N11 at Fassaroe, Bray, County Wicklow. The site comprises three main waste processing buildings, the original transfer building located close to the site entrance at the southern side of the site and adjoining Phase 1 & 2 waste processing buildings which are located in the centre of the site. There is also an new administration building incorporating office, canteen and toilet facilities; a vehicle wash; 2 no. weighbridges and a weighbridge office; office type portacabins (formerly used as offices); truck and empty skip parking areas and vehicle maintenance shed which is adjacent the original transfer building.

2.2 Waste Management Activities

The depot is an integrated waste management facility. The licence allows for the following activities:

- bulking of municipal solid waste prior to transfer off-site for disposal;
- in-vessel composting of biodegradable waste;
- wood shredding;
- processing/storage of dry recyclables;
- recovery of construction and demolition waste;
- acceptance of waste at a civic waste facility, which includes hazardous waste such as bonded asbestos waste, WEEE and chlorofluorocarbons.

With the exception of composting, which has not yet started, all of the other activities are on-going. In December 2009, the agency technically amended the licence to allow for a change to the hours of operation so that Greenstar can carry out indoor processing of dry mixed recyclable material on a 24-hour day, 7-day week basis in the Phase 1 processing building. With the exception of this activity, the facility can be operated only during the hours of 7:30 to 21:00 Monday to Saturday inclusive as conditioned in the Licence.

2.2.1 Waste Type & Processes

The facility is licensed to accept a maximum of 200,000 tonnes of waste annually. This comprises the following waste types and volumes, as specified in Schedule A of the Licence: -

- Household and Commercial (143,560 tonnes),
- Construction & Demolition (54,040 tonnes),
- Hazardous (2,400 tonnes).

The following processes are carried out:

Mixed Municipal Solid Waste (MSW)

All mixed MSW containing a putrescible fraction is handled inside the original Transfer Building. The incoming waste is deposited on the floor of the building and is then either pushed into an open trailer or compacted, for removal and disposal at an approved off-site residual landfill facility.

Dry Mixed Recyclables (DMR)

DMR is deposited onto the floor of the Phase 1 Transfer Building. Mixed DMR is separated, using a sorting line, into paper, cardboard, aluminium, steel, plastic bottles and plastic film fractions, which are then baled separately and stored pending removal for recycling. Source segregated DMR is baled directly and stored pending consignment.

Non Putrescible Commercial and Industrial (C&I)

Non putrescible C&I waste delivered by waste contractors is off-loaded in the Phase 2 building. Non putrescible C&I from the site's civic waste facility (public and commercial enterprises) is transferred to the Phase 2 building.

The processing is carried out indoors. The materials are pre sorted to remove bulky items and the remaining waste is fed into the C&I/C&D processing line. A 3D trommel is used to remove oversize items and the material then passes through a star-screener unit to remove the fine fraction containing subsoil and topsoil. Over-band magnets are used to separate ferrous metals from the waste. Material is passed through a picking station to remove metals, concrete/stone, timber, hard plastics and residual material.

The concrete/stone is sent to the on-site crusher for further processing. Timber is sent to the on-site timber shredder. Metals are stored pending consignment from the site to an approved facility.

Construction and Demolition (C&D) Waste

The material is processed inside the Phase 2 building using the same processing line as for the C&I wastes described above. The fines are sent to landfill for use as cover material. The concrete/stone is sent to the on-site crusher to produce an inert aggregate. Timber is sent to the on-site timber shredder. Metals are stored pending consignment from the site.

Wood, Timber and Green Waste

The wood and timber recovered on-site is shredded externally in the north of the site and sent off-site for disposal or recovery. Untreated timber accepted at the site is classed as A-grade timber and segregated from treated & recovered timber.

Green waste is stored pending transfer to an off-site composting facility. Although the Licence allows for in-vessel composting of biodegradable waste, this has not yet started.

Civic Amenity Area

The civic amenity area is located to the Northwest of the original Transfer Building. There are a number of closed 14 yard skips for MSW and separate bays for timber, green waste, metals and mixed wastes.

Hazardous Wastes

The Licence allows the acceptance of small volumes of hazardous waste at the civic amenity area (WEEE, bonded asbestos materials and chlorofluorocarbons). These wastes are stored in the waste quarantine area in suitable receptacles pending removal off site to approved facilities.

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	Model	Processing Capacity
1	Fuchs Grab F4	MHL340	30t/hr
1	Liebherr Grab/Excavator	R914	60t/hr
1	Volvo Loading Shovel	L70E	20t/hr
2	Liebherr Loading Shovel	564	85t/hr
1	O&K Loading Shovel	L15.5	20t/hr
1	Mitsubishi Forklift GRAB	2.5t	
1	Mitsubishi Forklift	2.5T	15HS/WK
1	Toyota Forklift Grab	3.5T	65hr/wk
1	Hyster Forklift Grab	3.5t	65hr/wk
1	Forklift Road Sweeper	MS 750 C	15hr/wk
1	DMR Process line	Turmec	8t/hr
1	DMR Baler	Bollegraaf HBC 60	70T/DAY
1	Generator	FG Wilson	
1	C&I/C&D Process Line	Waltec	35t/hr
1	Erin Stone Screener	Fingerscreen	400t/day
1	Hammel Timber Pre Shredder	VB 750 D	30t/hr
1	Beast Timber shredder	3680	40t/hr
1	Tractor	Massey Ferguson 4255	2hr/wk
1	MSW compactor		80t/day
1	Weighbridge 2 Scales	RiteWeigh Aran Series 18 m	62hr/wk
1	Volvo Loading Shovel	L90F	20T/HRS
1	Mobile Power Washer		2hr/wk
2	Compactor	Movemore	

3. EMISSION MONITORING

Greenstar implements a comprehensive environmental monitoring programme to assess the significance of emissions from site activities. The programme for 2012 included groundwater, surface water, leachate, sewer emissions, landfill gas, noise and dust monitoring. The monitoring locations are shown on Figure 3.1. The monitoring results are submitted to the Agency at quarterly intervals. An overview of the monitoring conducted in the reporting period is presented in this Section, with summary data tables in Appendix 1.

3.1 Groundwater

There are four (4) on-site groundwater monitoring wells (BH-2, BH-5, BH-6 and BH-7). Monitoring wells BH-2, BH-5 and BH-7 are positioned downgradient of the former landfill area while BH-6 is upgradient. The upgradient monitoring well (BH-6) was installed in March 2009 to replace the previous well which was removed during construction of the administration building. This location was dry throughout 2012.

3.1.1 Groundwater Levels

Groundwater levels were recorded at quarterly intervals in each of the wells. Based on the level data the direction of groundwater flow is north easterly.

3.1.2 Groundwater Quality

Observation 2 of the Agency's audit report for the Fassaroe Depot (W0053-03) dated the 26th April 2012 relates to the fact that the existing up-gradient well (BH-6) has been dry for a number of monitoring events. The Agency required Greenstar to complete an investigation of the feasibility of using an offsite groundwater well. A report was submitted to the Agency in June 2012 following this investigation. The Agency agreed with the conclusions of this report in that routine groundwater monitoring programme can now refer to Interim Guideline Values and Threshold Guideline Values.

Groundwater quality was monitored at quarterly intervals. The Agency collected additional groundwater samples in Q-4 2012. The sampling and analysis was carried out in accordance with recognised quality assurance and control procedures. The range of quarterly and annual analysis was as specified in Schedule C of the Waste Licence and includes pH, electrical conductivity, organic, inorganic and microbiological parameters. The summary of the results is included in Appendix 1.

The water quality in the three wells (in both routine and Agency monitoring events) was generally consistent with that established in the previous monitoring and is generally reflective of the sites historic use as a landfill. The facility operated as both a quarry and landfill between 1947 and 2000. In 2006 Greenstar submitted proposed groundwater trigger levels to the Agency for its approval. Since 2006 the proposed trigger levels for conductivity and chloride in BH-2 and BH-5 have occasionally been exceeded.

The level of ph detected in the wells has been consistent since 1999. The levels o chloride detected has fallen between 199 and 2012. The level of conductivity in BH-2 increased on site between 2005 and 2006. The levels of EC and potassium in BH-2 have been relatively consistent between 2006 and 2012. The level of calcium and sulphate increase din BH-2 and BH-5 between 2005 and 2006. The levels of calcium and sulphate have been consistent between 2006 and 2012.

3.1.3 Estimated Annual and Cumulative Quantity of Emissions to Groundwater

There are no direct emissions to groundwater. Indirect emissions include incident rainfall and storm water run-off from some of the paved areas. There were no changes to the site layout and operation during the reporting period that resulted in new or additional sources of direct or indirect discharges to groundwater.

All surface water from the paved areas is diverted away from the filled areas thereby reducing the potential indirect impact of surface water on groundwater quality. Rainwater from roofed areas is now diverted to a water harvesting tank for use in dust suppression. Section 3.2 discusses the quantities of emissions to surface water.

3.2 Surface Water

The surface water drainage system in and around the site is dominated by the proximity of the Glenmunder Stream along the north eastern boundary. The Glenmunder ultimately drains to the River Dargle, which is a designated salmonid river. Surface water run-off from the roof of the new administration building and new car park area discharges to the Glenmunder via a silt trap and oil interceptor.

Surface water quality is monitored at four locations (SW-1, SW-2, SW-3 and SW-4) on the Glenmunder and at one discharge point from the facility to the Glenmunder (SW-5). SW-1 is upstream of the site, SW-2 and SW-3 are along the site boundary and SW-4 is downstream of the site. SW-5 is the discharge point for rainfall runoff from the roof of the administration building and the car park area to the Glenmunder. Quarterly surface water sampling was carried out at all surface water location sin 2012. Additional sampling was undertaken by the Agency. The Agency collected surface water samples from SW-1, 2, 3 & 4 in Q-2 2012. The Agency did not collect a sample from SW-5.

The monitoring was conducted at quarterly intervals and included in-situ and laboratory testing. The range of analysis was as specified in Schedule C of the Waste Licence and includes dissolved oxygen, pH, electrical conductivity, and organic and inorganic parameters. The sampling and analysis was carried out in accordance with recognised quality assurance and control procedures. A summary of the monitoring results are included in Appendix 1.

The monitoring (both routine and Agency monitoring events) confirmed that the quality of the surface water was generally good and that the facility was not impacting on the stream. The monitoring has confirmed that the surface water quality is generally consistent with that in a rural area and there is no evidence that site activities or the surface water discharge at SW-5 is impacting on the stream. Ammonia, chloride, BOD, COD and total suspended solids were detected at SW-5 throughout the year at levels greater than detected upstream of the discharge to the Glenmunder. The levels of indicator parameters including pH, conductivity, total suspended solids, chloride, ammonia, BOD and COD detected upstream and downstream of SW-5 indicate that the site is not having any impact on the surface water quality downstream of the site.

The last biological assessment of the Glenmunder River was submitted to the Agency on the 25th November 2011. A biological assessment is carried out biannually and will be carried out again in 2013. The 2011 assessment showed a slight drop in water quality since 2009. The Q value is now Q3 indicating the stream is moderately polluted. Water quality in 2011 both up and down stream is classed as poor and at risk. There are no significant differences recorded between the upstream and downstream location therefore it is assumed that the drop in quality can be ascribed to an impact occurring upstream of SW-1.

3.3 Wastewater

Wastewater from the facility (floor wash downs, vehicle washing) discharges to the municipal foul sewer. A wastewater sample was collected monthly from monitoring location SE-1. It was not possible to collect samples in November 2012, as there was no flow at the monitoring location. The range of analysis was as specified in Schedule C of the licence and included pH, COD, BOD, suspended solids, sulphates, oils, fats and greases, mineral oils and detergents. The monitoring results are included in Appendix 1. The facility was 100% compliant with the Emission Limit Values (ELVs) set in the Licence in 2011.

3.4 Leachate

Leachate is generated by rainfall in the former landfill area. There are three leachate monitoring wells the locations of which are shown on the drawing in Figure 3.1.

3.4.1 Leachate Levels

Levels were monitored at monthly intervals during the reporting period. In general the wells were either dry or contained very small volumes of liquid at the base which could not be sampled.

3.4.2 Leachate Quality

The Licence requires routine monitoring. However, over the reporting period the wells were either dry or there was an insufficient volume to collect samples. Greenstar will attempt o collect samples at the leachate points in periods of heavy rain in 2013.

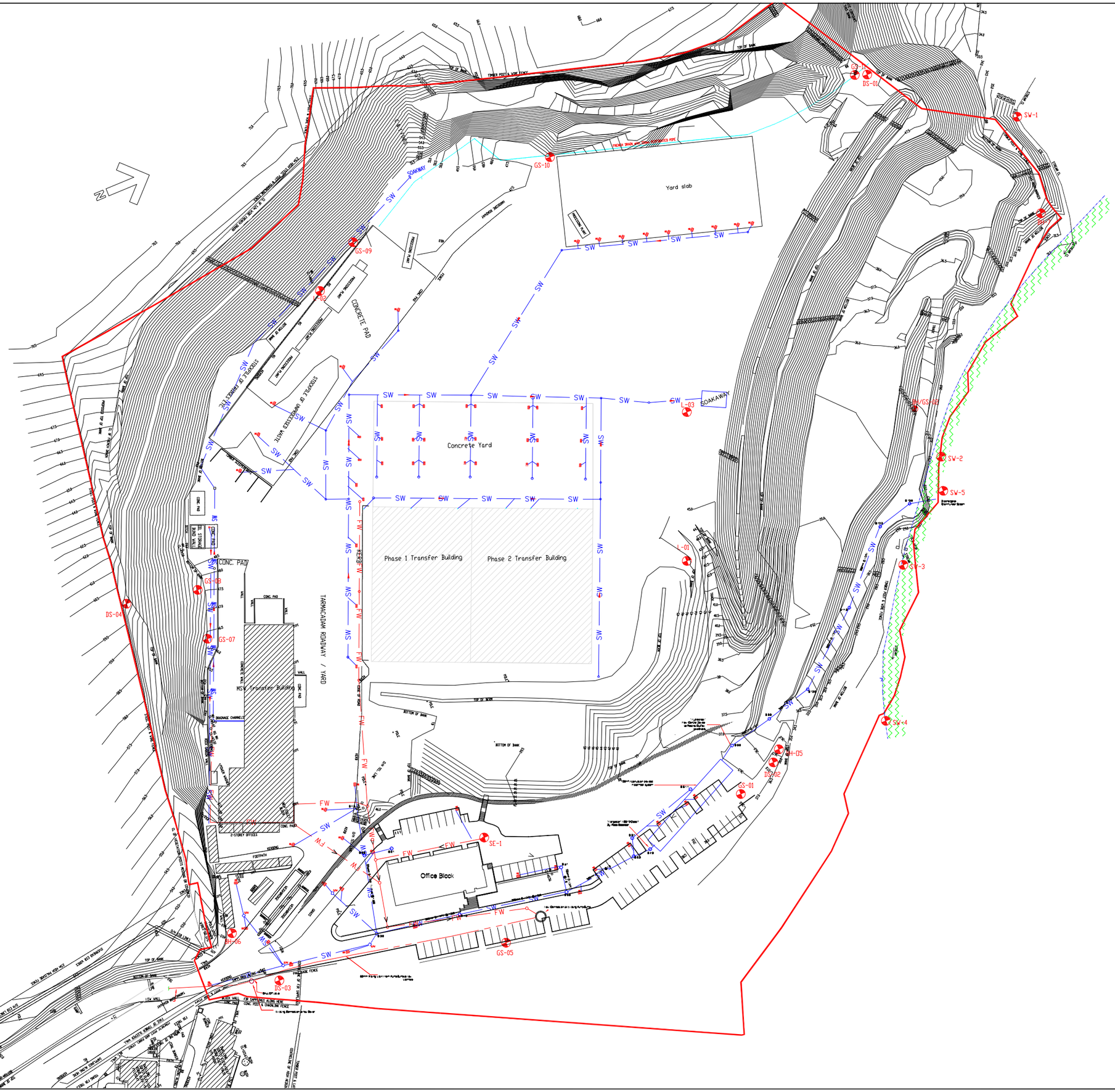
3.5 Landfill Gas

Monitoring was carried out in accordance with Schedule C of the Waste Licence. The monitoring locations specified in the Licence include seven landfill gas wells (GS-05, GS-07, GS-08, GS-09, GS-10 and GS-11), the groundwater monitoring wells (BH-2, BH-5, BH-6 and BH-7) and the leachate boreholes (L-01, L-02 and L-03).

GS-01, GS-05, BH-2, BH-5, BH-6 and BH-7 are located outside the fill area. GS-07, GS-08, GS-09, GS-10, GS-11, L-01, L-02 and L-03 are located in the fill area. The nearest buildings to the filled area are the waste processing buildings and the site offices. OCM conducted gas monitoring in the waste processing buildings and the site offices during all monitoring events and the results are included in Appendix 1. The monitoring did not detect the presence of carbon dioxide or methane in any of the buildings.

Out of one hundred and fifty four landfill gas measurements made during the reporting period, methane was detected on fifteen (15) occasions in wells located in the fill area. Methane was not detected above the trigger level in any of the wells outside the waste body. Carbon Dioxide was measured at levels above the trigger level (1.5% v/v) on nine (9) occasions in wells outside the waste body. The highest level detected was 5.1% at BH-7. The monitoring results do not indicate that landfill gas is migrating from the former fill area. Since 2000, the monitoring programme has established that carbon dioxide levels in a number of the gas wells outside the waste body have exceeded trigger levels however methane has never exceeded the trigger levels in any of these wells.

The exceedances of the carbon dioxide trigger levels have neither been immediately reported nor treated as incidents issued as the levels are not unexpected i.e. they are not the result of incidents. Instead, to the Agency's satisfaction and agreement, results have been discussed in each quarterly report submitted for the facility.



NOTES

LEGEND: MONITORING LOCATIONS

Denotes Monitoring Location
(BH, GAS and LEACHATE)
(SURFACE WATER, SEWER and DUST)

#	I.D.	EASTING	NORTHING
1	SE-1	324309.01	218051.50
2	BH5/GS-01	324311.85	218157.81
3	BH/GS-02	324212.67	218255.62
4	BH-6	324212.67	218266.62
5	BH-7	324330.71	217905.07
6	GS-05	324331.23	218071.80
7	GS-07	324146.36	218021.76
8	GS-08	324118.57	218049.52
9	GS-09	324094.55	218100.07
10	GS-11	324100.93	218272.43
11	L-01	324231.96	218165.23
12	L-02	324108.57	218077.92
13	L-03	324552.44	218035.59
14	SW-1	324132.36	218322.94
15	SW-2	324247.97	218240.29
16	SW-3	324326.38	218166.72
17	SW-4	324359.53	218124.20
18	SW-5	324289.90	218185.10
19	N1	324310.04	217965.54
20	N2	324313.86	218013.03
21	N3	324325.62	218143.04
22	N4	324209.97	218262.19
23	NSL1	324305.76	217858.30
24	NSL2	324299.20	217845.31
25	DS-01	324122.92	218288.56
26	DS-02	324265.71	218205.11
27	DS-03	324315.24	218005.08
28	DS-04	324161.16	218013.86

REV	DATE	DESCRIPTION	DRN	CHKD	APP
A	05.06.2008	LAYOUT	MW	JOC	JOC

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

CLIENT

GREENSTAR

TITLE

SITE LAYOUT
FASSAROE
Monitoring Locations

SCALE	FIGURE No.	REV.
1250 A3	3.1	A

3.5.1 Landfill Gas Volumes

The occasional elevated carbon dioxide concentrations and the occasional presence of methane indicate that some degree of degradation of organic waste is occurring within the fill area. Based on the available information on the site history it appears that some biodegradable material may historically have been deposited at the site. The monitoring results do not indicate that landfill gas is migrating from the former fill area.

Given that the type and quantity of the biodegradable waste deposited on-site is not known, it is impossible to predict the volumes of landfill gas that may be generated. However, the monitoring results indicate that the volume of such degradable material is likely to be small and will reduce over time.

3.5.2 Landfill Gas Control

The design of the recently constructed structures at the site, specifically the Phase 2 processing building and the new administration building, incorporate sub-surface landfill gas protection measures and recent landfill gas monitoring in buildings around the site have not detected methane or elevated levels of carbon dioxide. There is no landfill gas control system on-site. The landfill gas concentrations measured in the routine monitoring programme indicate there is no need for such control measures. However, this will be kept under review based on the results of the on-going landfill gas monitoring programme.

3.6 Noise Survey

Quarterly monitoring was carried out at the four on-site noise monitoring locations, N-1, N-2, N-3 and N-4 specified in the licence and two off-site noise sensitive locations NSL1 and NSL2. The surveys were conducted when the site was fully operational and a summary of the results are included in Appendix 1.

The facility was found to be in compliance with the licence conditions. Although recorded noise levels were on occasions above the 55 dB(A) limit set in the licence, noise emissions from the facility were not audible above this limit. Offsite noise sources particularly traffic contributed significantly to the local noise environment.

3.7 Dust Monitoring

Dust monitoring is carried out monthly at four monitoring locations, DS-01, DS-02, DS-03 and DS-04. DS-01 is located at the northern portion of the facility within the site boundaries and approximately 250 m from the nearest sensitive receptor. DS-02 is located away from operational areas, close to a formerly vegetated area along the northern boundary. This location is at the edge of the car park for the administration building. DS-03 is located within the site boundary close to the car park and to the east of the site weighbridges. DS-04 is

located on the southern boundary of the facility at the top of an embankment. The dust deposition limit was exceeded at DS-03 and DS-04 in January 2012. The level detected was 362mg/m^2/day and 459 mg/m^2/day (the limit is 350mg/m^2/day). An incident report was submitted to the Agency upon receipt of the dust results. The dust deposition limit was not exceeded during any other event.

4. SITE DEVELOPMENT WORKS

4.1 Specified Engineering Works

Greenstar upgraded the surface water drainage system as agreed with the Agency in March 2012. As part of this, a water harvesting system was installed whereby all water from the roof of the waste processing buildings is collected separately and diverted to a storage tank. The collected water can be used for dust suppression and reduces the volume of surface water that currently drains to the on-site percolation area. The system is designed to supply water for dust suppression and reduce the volume of waste sent to the surface water drainage system. An SEW was submitted to the Agency and approval of the works was received in March 2012. The works were completed in July 2012. A further phase of the project will be progressed in 2013.

4.2 Site Restoration

No site restoration works were carried out in 2012.

4.3 Site Development

No other site development was undertaken in 2012 except the surface water drainage upgrade and water harvesting system installation.

4.4 Summary of Resource & Energy Consumption

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

Table 4.1 Estimates of Resources Used On-Site 2012

Resources	Quantities 2011	Quantities 2012
Diesel	370,701 litres	217,582 litres
Hydraulic, Transmission and Engine Oil	5,600 litres	3,500 litres
Gear Oil	5,400 litres	120 litres
Odour Neutraliser	1,000 kg	0 kg
Truck Wash Detergent	0 kg	0 kg
Electricity	614,899 kWh	966,452 kWh
Gas	273,583 kWh	566.460 kWh

5. WASTE RECEIVED AND CONSIGNED FROM THE FACILITY

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 2012 is presented in the PRTR submission in Appendix 3.

The total quantity of waste received was 121,367.3 tonnes and the total amount consigned was 125,661.87 tonnes. The waste received and consigned in 2011 and 2012 are presented in Tables 5.1 and 5.2. For comparative purposes the amounts of waste received and consigned from 2006 to 2012 are presented in Table 5.3. As per Condition 11.12 of the Licence all the wastes consigned from the site went to authorised recovery and disposal facilities and a copy of the relevant Facility Permit or Waste Licences retained on site for Agency inspection.

The records show that more waste was consigned from the site than accepted. The difference was 4,294.57 tonnes. This is due to material being consigned from the facility in Q-1 which was in storage since 2011.

Table 5.1 Waste Received and Consigned 2012

EWC	Description	Waste In	Waste Out
07 05 14	LD Filter Cake	21.58	
08 03 99	Cartridges	0.25	
10 02 11	Oil Filters		0.18
13 02 08	Waste Oil		0.74
15 01 01	Segregated cardboard & paper packaging (e.g. corrugated cardboards, paper wrapping & bags)	8,241.77	11,982.77
15 01 02	Segregated plastic packaging (e.g. PVC, PET & PE bottles & jars, plastic bags, food wrappers)	403.76	3,107.07
15 01 03	Segregated wood packaging (e.g. crates, cartons, cheese boxes, fruit trays)	1,332.01	21.52
15 01 04	Segregated metal packaging - aluminium cans	73.81	267.66
15 01 05	Segregated tetrapacks	85.41	
15 01 06	Segregated mixed packaging	6,430.00	
15 01 07	Segregated glass packaging (e.g. bottles, jars)		26.94
15 01 09	Reused IBC	0.12	
16 01 03	Tyres		18.10
16 05 04	Haz Gas Cylinders		0.92
16 06 01	Lead Battery		4.94
17 04 11	Cable	1.92	
17 05 04	Soil & Stones	5.95	
17 09 04	Mixed C&D waste	33,28.22	
19 05 99	Stabilised MSW fines	2,564.02	2,589.38
19 12 04	Plastics and rubber from mechanical treatment	4.84	
19 12 07	Processed wood (e.g. chipped/shredded wood)		7,023.96
19 12 09	Minerals from mechanical treatment (e.g. inorganic fines, sand, stones)		17,900.42
19 12 12	Mixed Municipal Waste	218.89	19,949.82
20 01 01	Paper & cardboard from municipal sources	818.99	17,522.61
20 01 02	Glass from municipal sources	5.56	11.65
20 01 08	Commercial food waste e.g. canteens, restaurants	906.61	372.68
20 01 11	Textiles	33.32	2.34
20 01 25	Fats	8.84	
20 01 23	Haz Fridge Freezer		2.26
20 01 35	WEEE	34.62	12.72
20 01 38	Wood waste from municipal sources (e.g. furniture)	1,445.86	
20 01 39	Plastic from municipal sources	45.16	139.88
20 01 40	Metals from municipal waste e.g. light iron	178.41	1,531.26
20 01 99	Grease Trap Collection	0.01	
20 02 01	Green Waste	1,445.83	1,271.48
20 03 01	Mixed residual waste (typically black bin)	66,711.91	41,491.21
20 03 03	Street-cleaning residues	21.90	21.90
20 03 07	Bulky waste	26,997.75	387.46
	Total Received	**121,367.30**	
	Total Consigned		**125,661.87**
	Recovered		**84,454.83**
	Disposed		**41,207.30**
	Recovery Rate		**67%**

Table 5.2 Waste Received & Consigned 2011

EWC	Description	Waste In	Waste Out
13 02 08	Waste Oil		3.00
15 01 01	Segregated cardboard & paper packaging (e.g. corrugated cardboards, paper wrapping & bags)	11,108.00	14,049.00
15 01 02	Segregated plastic packaging (e.g. PVC, PET & PE bottles & jars, plastic bags, food wrappers)	461.00	3,885.00
15 01 03	Segregated wood packaging (e.g. crates, cartons, cheese boxes, fruit trays)	2,071.00	15.00
15 01 04	Segregated metal packaging - aluminium cans	99.00	51.00
15 01 05	Segregated tetrapacks	11.00	
15 01 06	Segregated mixed packaging	35,217.00	1,270.00
15 01 07	Segregated glass packaging (e.g. bottles, jars)	499.00	3,433.00
16 02 14 /20 01 36	White goods	1.00	
16 03 04	Polyurethane Foam	1.00	
16 05 04	Haz Gas Cylinders		1.00
17 05 04	Soil & Stones		12,986.00
17 09 04	Mixed C&D waste	4,196.00	99.00
19 12 01	Paper & cardboard	1.00	
19 12 04	Plastics and rubber from mechanical treatment	7.00	
19 12 07	Processed wood (e.g. chipped/shredded wood)	148.00	7,647.00
19 12 09	Minerals from mechanical treatment (e.g. inorganic fines, sand, stones)	3.00	23,071.00
19 12 12	Mixed Municipal Waste		66,376.00
20 01 01	Paper & cardboard from municipal sources	596.00	18,112.00
20 01 02	Glass from municipal sources	352.00	
20 01 08	Commercial food waste e.g. canteens, restaurants	503.00	384.00
20 01 08 /20 02 01	Household food & garden waste (typically brown bin)	1,760.00	
20 01 10 / 20 01 11	Textile waste from municipal sources (e.g. clothing, curtains)	89.00	
20 01 23	Haz Fridge Freezer		4
20 01 35	WEEE	1.00	25.00
20 01 38	Wood waste from municipal sources (e.g. furniture)	2,602.00	138.00
20 01 39	Plastic from municipal sources	44.00	15.00
20 01 40	Metals from municipal waste e.g. light iron	197	2,130.00
20 02 01	Green Waste		1,389.00
20 03 01	Mixed residual waste (typically black bin)	49,426.00	
20 03 01	Mixed dry recyclables (typically green bin)	4,270.00	
20 03 03	Street-cleaning residues	110.00	110.00
20 03 07	Bulky waste	24,275.00	802.00
	Total Received	**138048**	
	Total Consigned		**155995**

Table 5.3 Total Tonnages Received, Consigned & Recovered in 2005-2012

Year	Total Received	Total Consigned	Total Recovered	Recovery Rate
2012	121,367.30	125,661.87	84,454.83	67.02%
2011	138048	155995	92492.16	67%
2010	142,365.00	143,248.24	64,494.98	45.02%
2009	135,386.12	122,331.95	61,297.98	50.10%
2008	152,695.89	138,814.22	10,828.00	54.34%
2007	192,679.93	198,371.37	39,186.00	54.90%
2006	170,600.44	119,836.93	80,328.43	72%
2005	178,735.42	110,077.96	60,504	50%

6. ENVIRONMENTAL INCIDENTS AND COMPLAINTS

6.1 Incidents

The routine monitoring programme identified a number of incidents during the reporting period associated with exceedance of the landfill gas emission limit for carbon dioxide and dust on one occasion as described in Section 3. Landfill gas concentrations are monitored on a monthly basis at the facility. Up until to now, the minor exceedances of the carbon dioxide trigger levels have neither been immediately reported nor treated as incidents issued as the levels are not unexpected i.e. they are not the result of incidents. Instead, to the Agency's satisfaction and agreement, results have been discussed in each quarterly report submitted for the facility. An incident report relating to the dust exceedance was submitted to the Agency. A summary of the incidents is shown on Table 6.1.

There were no other reportable incidents in 2012.

Table 6.1 Summary of Incidents and Exceedance of Gas Emission Limits

Nature of Incidents	Cause	Corrective Action
Exceedance of dust limits (350) at D-3 (362) and D-4 (459) in the January-February 2012 monitoring event.	When the samples were collected they were noted to contain twigs, moss and bark. While the majority of these objects were removed by the laboratory personnel, it is possible exceedance was due to extraneous material.	Continue routine monitoring.
Carbon dioxide exceeded the trigger limit at monitoring borehole: GS-05 in 4 events, BH-06 in 2 events BH-07 in 4 events.	Possible anaerobic degradation of small quantities of organic waste.	Continue routine monitoring to determine if landfill gas is being produced in significant quantities and is migrating off-site.

6.2 Register of Complaints

Greenstar maintains a register of complaints received in accordance with Condition 11.7 of the waste licence. There were no complaints received in 2012.

7. ENVIRONMENTAL DEVELOPMENT & CONTROL

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 the requirements of the Waste Licence Conditions. Greenstar has prepared and effectively implement documented procedures and instructions in accordance with the requirements of both the OHSAS 18001:2007 and ISO 14001:2004 and the site has been certified to these standards since 2010.

As part of this IMS Greenstar has developed a list of environmental, management, operating and maintenance procedures, details of which are outlined in Appendix 2. The schedule of Objectives and Targets, including their status for 2012 (Table 7.1), as well as the proposed Objectives and Targets for 2013 (Table 7.2) are presented below.

7.1.1 Schedule of Objectives and Targets 2012

The 2012 Schedule included 5 objectives, which are summarised in Table 7.1. An evaluation of what has been achieved to date is presented below.

Objective 1 – Awareness and Training
Weekly toolbox talks are carried out which include environmental updates and environmental procedural training.

Objective 2 – Energy & Resource Consumption
A water harvesting system was installed on site on 2012 to reduce water consumption.

Objective 3 – Review and Assess the Effectiveness of Nuisance Control Procedures
A new company (PestGuard) was engaged to improve quality of service on site

Objective 4 – Pollution Prevention
The established pollution prevention programme was maintained in 2012.

Objective 5 – Infrastructure
A roof water attenuation tank and associated pipe work was installed on site to reduce ponding of surface water and to supplement the water supply on site for use in dust suppression in 2012.

7.1.2 Site Management Structure

Details of the site management structure are given below.

Name: Sara Smyth **Title:** Operations Manager

Training & Experience: FAS Waste Management Course. 13 years waste management experience

Responsibilities: Responsibility and accountability for Greenstar processing division in Bray. Overseeing ISO systems including environmental and H&S procedures.

Name: John Geaney **Title:** A/Operations Manager

Training & Experience: FAS Waste Management Course. 26 years industrial experience, including 5 years in the waste industry.

Responsibilities: Overall responsibility and accountability for all aspects of Greenstar's processing divisions in Bray. Overseeing ISO systems including environmental and H&S procedures. Business development manager.

Name: Stephen Wilson **Title:** Site Operations Manager

Training & Experience: BA Business & Finance, ACCA. Has completed FAS Waste Management Course. 9 years industrial experience, all in the waste industry.

Responsibilities: Daily responsibility and accountability for all aspects of Greenstar's processing divisions in Bray. Managing the waste flow process. Implementing ISO systems including environmental and H&S procedures and also meeting all KPIs.

Name: Ger O'Reilly **Title:** Operations Supervisor

Training & Experience: Certificate in Safety & Health at Work (UCD), Certificate in Training and Continuing Education (NUI). Has completed FAS Waste Management Course. 29 years industrial experience, 7 in the waste industry.

Responsibilities: Day to day operations including direct supervision to ensure appropriate handling, processing & throughput of material in accordance with environmental and H&S procedures, and also meeting all KPIs. Providing Manual Handling & Safety Training.

Table 7.1 Schedule of Objective and Targets 2012

No	2012 Objective	Target	Responsibility	Status
1	**Awareness and Training**	Expand the environmental topics covered in weekly toolbox talks planned. Introduce job specific environmental training planned.	Site Management	Ongoing
2	**Energy & Resource Consumption**	Decrease the diesel usage on site by switching some plant over to mains power	Site Management	Ongoing
3	**Review and Assess the Effectiveness of Nuisance Control Procedures**	Use the IMS and the results of the continual monitoring programme to assess nuisance control effectiveness.	Site Management	New Contractor Taken On.
4	**Pollution Prevention**	Continue to implement the IMS and monitoring programme.	Site Management	Ongoing
5	**Infrastructure**	Upgrade the drainage network to include the provision of roof water attenuation tank	Site management	Phase 1 completed in August 2012

Table 7.2 Schedule of Objective and Targets 2013

No.	Objective	Target	Timescale	Responsibility
1	**Awareness and Training**	Complete appropriate environmental training for all site personnel as per the Company's established Training Matrix.	**Q1-Q4**	**Site Management**
2	**Energy & Resource Consumption**	Assess the impacts of the new water harvesting system on water consumption.	**Q1-Q4**	**Site Management**
3	**Pollution Prevention**	Strive to ensure that monitoring results comply with the licence limits and investigate any exceedances of emission limit values.	**Q1-Q4**	**Site Management**
4	**Waste Storage**	Review waste wood processing & storage practices taking account of the recent Agency Position Paper on the Management of Wood Waste	**Q2**	**Site Management**
5	**Odour Management**	Compile an Odour Management Plan for the facility and include it on the training matrix referred to in Objective 1	**Q3**	**Site Management**
6	**Infrastructural Development**	Progress the agreed diversion of surface water from the marshalling area (which currently discharge to percolation system) to the foul water system and ultimately the municipal foul sewer.	**Q3-Q4**	**Site Management**
7	**ISO 14001 Certification**	To achieve ISO re-certification.	**Q-2 2013**	**Site Management**

7.2 Reduction of Water Demand

Greenstar upgraded the surface water drainage system as agreed with the Agency in March 2012. The works included the installation of an attenuation tank to collect the roof water from the processing building and this will be reused for dust suppression on site. This has lead to a further reduction in water usage at the facility.

7.3 Volume of Wastewater Produced and Transported off site

The total amount of wastewater produced during the reporting period was 2,211 m^3 which was discharged to the municipal sewer.

7.4 Pollution Emission Register

The Pollution Emission Register (PER) has been replaced by the European Pollutant Release and Transfer Register Regulation (EC) No. 166/2006. A copy of the information submitted to the Agency via the web-based data reporting system is included in Appendix 3.

7.5 Nuisance Controls

Greenstar has contracted a vermin control company Pestgard to carry out nuisance control at the facility. Pestgard undertake a six weekly review of the vermin activity on-site along with an inspection of the bait traps that are located throughout the facility.

7.6 Tank & Pipeline Testing

Tank and pipeline testing was carried out by Horizon Environmental Limited in 2011 and was confirmed to be fit for purpose. Testing will be required again in 2014.

7.7 Slope Stability Assessment

An assessment of the stability of the slopes was carried out in compliance with Condition 6.10 of the licence in April 2008 and was reported to the Agency as part of the 2008 AER. No further site restoration work was carried out and therefore it was not necessary to carry out a further stability assessment.

7.8 Programme for Public Information

Greenstar is 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 make the policy and records 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 environmental information at the facility. Records available for public inspection on site include:-

- Environmental, Health & Safety Policy,
- Waste Licence,
- Licence Application and Review documentation,
- Monitoring Records,
- Complaints File,
- EPA Correspondence File.

Visits to the site should be arranged in advance by ringing the Facility Manager or Supervisor at 1890 600 900.

7.9 Waste Recovery Report

The facility, which is designed to increase the recycling of biodegradable materials and reduce the volume of waste disposed to landfill, meets the needs identified in EU and national waste policy statements and contributed to the achievement of these goals as out of approximately 125,661.87 tonnes of waste accepted approximately 67% was sent for recovery.

7.10 Revised Closure, Restoration & Aftercare Management Plan

A revised Closure, Restoration & Aftercare Management Plan (CRAMP) was prepared and submitted to the Agency on November 25th 2011.

7.11 Measures in Relation to Prevention of Environmental Damage and Remedial Actions (Environmental Liabilities)

A revised Environmental Liabilities Risk Assessment was submitted to the Agency in February 2009.

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

The facility has an Integrated Management System (IMS) in place and the site has achieved external accreditation for its implementation of ISO 14001 and OHSAS 18001, environmental and health and safety management systems. Effective implementation of these systems is the most appropriate way to ensure that mitigation measures achieve the required risk reduction on site. The IMS serves as a guidance document for facility staff and describes operational control and management practices that are applied at the facility. The IMS is designed to ensure that management of site activities complies with regulatory requirements and best practice. The IMS includes a detailed Emergency Response Procedure which sets out the steps to be taken in the event of an incident at the facility with the potential to cause environmental damage. Greenstar also implements a comprehensive monitoring programme which will highlight any potential environmental incidents with the potential to cause environmental damage.

8. OTHER REPORTS

Observation 2 of the Agency's audit report for the Fassaroe Depot (W0053-03) dated the 26th April 2012 relates to the fact that the existing up-gradient well (BH-6) has been dry for a number of monitoring events. The Agency required Greenstar to complete an investigation of the feasibility of using an offsite groundwater well. A report was submitted to the Agency in June 2012 following this investigation and the Agency agreed with the conclusions of this report in that routine groundwater monitoring programme can now refer to Interim Guideline Values and Threshold Guideline Values.

An SEW for Phase 1 drainage works was submitted to the Agency in February 2012 and was subsequently agreed in March 2012.

A proposal relating to Phase 2 Drainage Works was submitted to Wicklow County Council for their agreement in July 2012.

APPENDIX 1

Environmental Monitoring Summary Tables

GROUNDWATER SUMMARY TABLES

Groundwater Results 2012 Fassaroe W0053-03: BH-2

Parameter	Units	1st Quarter 2012 02/02/2012	2nd Quarter 2011 01/05/2012	3rd Quarter 2012 17/09/2012	4th Quarter 2012 04/12/2012
Temperature	°C	11.1	11.6	10.9	9.8
Chloride	mg/l	39.8	23.4	36.7	40.7
Ammoniacal Nitrogen -N	mg/l	0.06	0.06	0.05	0.05
Conductivity	mS/cm	2.705	1.962	2.888	2.817
Dissolved Oxygen	mg/l	12	10	6	11
pH	pH Units	7.88	7.95	7.89	7.95
Nitrate	mg/l				0.8
Boron	mg/l				0.94
Calcium	mg/l				712.8
Potassium	mg/l				34.4
Sodium	mg/l				51
Magnesium	mg/l				51
Orthophosphate	mg/l				<0.06
Sulphate	mg/l				1443.01
Mercury	mg/l				<0.001
Cadmium	µg/l				<0.5
Chromium	mg/l				0.009
Copper	µg/l				<7
Iron	µg/l				<20
Manganese	µg/l				<2
Lead	µg/l				<5
Nickel	µg/l				4
Zinc	µg/l				5
VOC	µg/l				ND
SVOC	µg/l				ND
Pesticides	µg/l				ND
Total Coliforms	cfu/100ml				829.7
Faecal Coliforms	cfu/100ml				<1

Groundwater Results 2012 Fassaroe W0053-03: BH-5

Parameter	Units	1st Quarter 2012 02/02/2012	2nd Quarter 2011 19/04/2011	3rd Quarter 2012 17/09/2012	4th Quarter 2012 04/12/2012
Temperature	°C	11.2	11.3	11.1	9.7
Chloride	mg/l	45	38.1	31.2	23.5
Ammoniacal Nitrogen -N	mg/l	0.13	0.05	0.06	0.04
Conductivity	mS/cm	2.075	1.701	1.857	1.703
Dissolved Oxygen	mg/l	8	8	7	7
pH	pH Units	7.59	7.62	7.63	7.85
Nitrate	mg/l				7.3
Boron	mg/l				0.124
Calcium	mg/l				388.4
Potassium	mg/l				6.5
Sodium	mg/l				42.2
Magnesium	mg/l				19.6
Orthophosphate	mg/l				<0.06
Sulphate	mg/l				554.33
Mercury	mg/l				<0.001
Cadmium	µg/l				<0.5
Chromium	mg/l				0.0031
Copper	µg/l				<7
Iron	µg/l				<20
Manganese	µg/l				<2
Lead	µg/l				<5
Nickel	µg/l				<2
Zinc	µg/l				<3
VOC	µg/l				ND
SVOC	µg/l				ND
Pesticides	µg/l				ND
Total Coliforms	cfu/100ml				2
Faecal Coliforms	cfu/100ml				<1

Groundwater Results 2012 Fassaroe W0053-03: BH-7

Parameter	Units	1st Quarter 2012 02/02/2012	2nd Quarter 2011 19/04/2011	3rd Quarter 2012 17/09/2012	4th Quarter 2012 04/12/2012
Temperature	°C	11	11.1	11.2	10.1
Chloride	mg/l	25.4	27.8	25.2	31.1
Ammoniacal Nitrogen -N	mg/l	0.66	0.79	0.69	4.67
Conductivity	mS/cm	0.65	0.969	0.679	0.906
Dissolved Oxygen	mg/l	10	3	3	5
pH	pH Units	8.1	7.8	8	8.3
Nitrate	mg/l				<0.2
Boron	mg/l				0.025
Calcium	mg/l				138
Potassium	mg/l				3.5
Sodium	mg/l				24.1
Magnesium	mg/l				12.9
Orthophosphate	mg/l				0.1
Sulphate	mg/l				99.73
Mercury	mg/l				<0.001
Cadmium	µg/l				<0.5
Chromium	mg/l				0.01
Copper	µg/l				<7
Iron	µg/l				<20
Manganese	µg/l				2207
Lead	µg/l				<5
Nickel	µg/l				3
Zinc	µg/l				<3
VOC	µg/l				ND
SVOC	µg/l				ND
Pesticides	µg/l				ND
Total Coliforms	cfu/100ml				435.2
Faecal Coliforms	cfu/100ml				100

Agency Groundwater Monitoring Q-2 2012

		BH-2	BH-5	BH-7
pH	**ph Units**	7.3	6.8	6.9
EC	**uS/cm**	2610	1458	594
rthophospha	**ug/l**	<5	<5	110
TON	**mg/l**	<0.1	1.3	0.1
Ammonia	**mg/l**	<0.01	<0.01	0.73
Fluoride	**mg/l**	<0.16	<0.05	0.09
Chloride	**mg/l**	38.4	25.9	26
Sulphate	**mg/l**	1474.2	614.9	45.5
Sodium IC	**mg/l**	58.5	43.5	17.7
Potassium IC	**mg/l**	42.6	8.9	2.1
Magnesium I	**mg/l**	58.6	20.2	10.6
Calcium	**mg/l**	648.7	339.3	109.8
Alkalinity	**mg/l**	460	366	274
Beryllium	**ug/l**	<0.5	<0.5	<0.5
Boron	**ug/l**	1150	138	18
Sodium	**mg/l**	60.9	44.5	19.5
Magnesium	**mg/l**	57.5	19.5	10.5
Aluminium	**ug/l**	<5	9	7
Potassium	**mg/l**	42.5	8.57	2.29
Calcium	**mg/l**	648	340	116
Vanadium	**ug/l**	8.7	1.5	<0.5
Chromium	**ug/l**	3	0.6	0.9
Iron	**ug/l**	<10	<10	1870
Manganese	**ug/l**	10	8	1750
Nickel	**ug/l**	4.1	<0.5	2
Cobalt	**ug/l**	0.9	0.8	0.8
Copper	**ug/l**	19.2	1.5	1.3
Zinc	**ug/l**	16	3.3	1.1
Arsenic	**ug/l**	4.9	2.1	4
Selenium	**ug/l**	1.6	0.8	1.4
Molybdenun	**ug/l**	4	<0.5	0.8
Silver	**ug/l**	<0.5	<0.5	<0.5
Cadmium	**ug/l**	<0.1	<0.1	<0.1
Tin	**ug/l**	<1	<1	<1
Antimony	**ug/l**	3.2	<0.5	<0.5
Barium	**ug/l**	49.5	33.1	70.8
Mercury	**ug/l**	<0.05	<0.05	<0.05
Thallium	**ug/l**	<0.1	<0.1	<0.1
Lead	**ug/l**	0.8	<0.5	<0.5
Uranium	**ug/l**	11.5	2.5	1.2
Strontium	**ug/l**	2970	974	331

SURFACE WATER SUMMARY TABLES

Surfacewater Results 2012 Fassaroe W0053-03: SW-1

Parameter	Units	1st Quarter 2012 02/02/2012	2nd Quarter 2011 01/05/2012	3rd Quarter 2012 17/09/2012	4th Quarter 2012 04/12/2012
Temperature	°C	8.1	8.1	10.1	7.1
Chloride	mg/l	27	26.9	26.6	24.7
COD	mg/l	<7	35	19	<7
BOD	mg/l	<1	4	<1	<1
Ammoniacal Nitrogen -N	mg/l	0.02	0.61	0.02	0.03
Tot. Susp. Solids	mg/l	<10	<10	<10	<10
Conductivity	mS/cm	0.445	0.551	0.566	0.49
Dissolved Oxygen	mg/l	12	9	10	11
pH	pH Units	8.48	8.4	8.3	8.64
Nitrate	mg/l	-	-		14
Calcium	mg/l	-	-		76
Magnesium	mg/l	-	-		6.1
Orthophosphate	mg/l	-	-		<0.06
Sulphate	mg/l	-	-		19.25
Mercury	µg/l	-	-		<1
Potassium	mg/l	-	-		1.9
Sodium	mg/l	-	-		14.5
Boron	mg/l	-	-		0.019
Cadmium	µg/l	-	-		<0.5
Chromium	mg/l	-	-		0.0092
Copper	µg/l	-	-		8
Iron	µg/l	-	-		<20
Manganese	µg/l	-	-		4
Nickel	µg/l	-	-		<2
Lead	µg/l	-	-		<5
Zinc	µg/l	-	-		3
VOC	µg/l	-	-		nd
SVOC	µg/l	-	-		nd
Pesticides	µg/l	-	-		nd
Total Coliforms	cfu/100ml	-	-		6,890
Faecal Coliforms	cfu/100ml	-	-		130

- Not Required

Surfacewater Results 2012 Fassaroe W0053-03: SW-2

Parameter	Units	1st Quarter 2012 02/02/2012	2nd Quarter 2011 01/05/2012	3rd Quarter 2012 17/09/2012	4th Quarter 2012 04/12/2012
Temperature	°C	8.1	8	10.1	7
Chloride	mg/l	27.2	26.1	26.7	25.3
COD	mg/l	9	24	9	<7
BOD	mg/l	<1	<1	<1	<1
Ammoniacal Nitrogen -N	mg/l	0.03	0.39	0.02	0.02
Tot. Susp. Solids	mg/l	<10	<10	<10	<10
Conductivity	mS/cm	0.446	0.486	0.552	0.499
Dissolved Oxygen	mg/l	12	10	11	11
pH	pH Units	8.48	8.45	7.73	8.64
Nitrate	mg/l	-	-		14.3
Calcium	mg/l	-	-		77.8
Magnesium	mg/l	-	-		6.2
Orthophosphate	mg/l	-	-		<0.06
Sulphate	mg/l	-	-		23.02
Mercury	µg/l	-	-		<1
Potassium	mg/l	-	-		2
Sodium	mg/l	-	-		14.6
Boron	mg/l	-	-		<0.012
Cadmium	µg/l	-	-		<0.5
Chromium	mg/l	-	-		0.0084
Copper	µg/l	-	-		<7
Iron	µg/l	-	-		<20
Manganese	µg/l	-	-		6
Nickel	µg/l	-	-		<2
Lead	µg/l	-	-		<5
Zinc	µg/l	-	-		<3
VOC	µg/l	-	-		nd
SVOC	µg/l	-	-		nd
Pesticides	µg/l	-	-		nd
Total Coliforms	cfu/100ml	-	-		3150
Faecal Coliforms	cfu/100ml	-	-		170

- Not Required

Surfacewater Results 2012 Fassaroe W0053-03: SW-3

Parameter	Units	1st Quarter 2012 02/02/2012	2nd Quarter 2011 01/05/2012	3rd Quarter 2012 17/09/2012	4th Quarter 2012 04/12/2012
Temperature	°C	8	8.1	10.1	7.1
Chloride	mg/l	27	25.3	26.8	24.3
COD	mg/l	8	20	12	7
BOD	mg/l	<1	1	<1	<1
Ammoniacal Nitrogen -N	mg/l	0.04	0.22	0.02	0.02
Tot. Susp. Solids	mg/l	<10	<10	<10	<10
Conductivity	mS/cm	0.444	0.512	0.554	0.496
Dissolved Oxygen	mg/l	12	10	11	11
pH	pH Units	8.48	8.49	8.31	8.62
Nitrate	mg/l	-	-		13.6
Calcium	mg/l	-	-		76.7
Magnesium	mg/l	-	-		6.2
Orthophosphate	mg/l	-	-		<0.06
Sulphate	mg/l	-	-		21.58
Mercury	µg/l	-	-		<1
Potassium	mg/l	-	-		2
Sodium	mg/l	-	-		14.6
Boron	mg/l	-	-		0.019
Cadmium	µg/l	-	-		<0.5
Chromium	mg/l	-	-		0.0149
Copper	µg/l	-	-		10
Iron	µg/l	-	-		<20
Manganese	µg/l	-	-		7
Nickel	µg/l	-	-		<2
Lead	µg/l	-	-		<5
Zinc	µg/l	-	-		4
VOC	µg/l	-	-		nd
SVOC	µg/l	-	-		nd
Pesticides	µg/l	-	-		nd
Total Coliforms	cfu/100ml	-	-		4020
Faecal Coliforms	cfu/100ml	-	-		180

- Not Required

Surfacewater Results 2012 Fassaroe W0053-03: SW-4

Parameter	Units	1st Quarter 2012 02/02/2012	2nd Quarter 2011 01/05/2012	3rd Quarter 2012 17/09/2012	4th Quarter 2012 04/12/2012
Temperature	°C	8.1	8.1	10.1	7.1
Chloride	mg/l	26.5	24.1	27.1	25
COD	mg/l	7	12	16	<7
BOD	mg/l	<1	<1	<1	<1
Ammoniacal Nitrogen -N	mg/l	0.02	0.07	0.02	0.02
Tot. Susp. Solids	mg/l	14	174	<10	<10
Conductivity	mS/cm	0.524	0.437	0.555	0.494
Dissolved Oxygen	mg/l	12	11	11	11
pH	pH Units	8.49	8.49	8.31	8.65
Nitrate	mg/l	-	-		15
Calcium	mg/l	-	-		77.6
Magnesium	mg/l	-	-		6.2
Orthophosphate	mg/l	-	-		<0.06
Sulphate	mg/l	-	-		21.94
Mercury	µg/l	-	-		<1
Potassium	mg/l	-	-		1.9
Sodium	mg/l	-	-		14.7
Boron	mg/l	-	-		0.03
Cadmium	µg/l	-	-		<0.5
Chromium	mg/l	-	-		0.0086
Copper	µg/l	-	-		11
Iron	µg/l	-	-		<20
Manganese	µg/l	-	-		7
Nickel	µg/l	-	-		<2
Lead	µg/l	-	-		<5
Zinc	µg/l	-	-		5
VOC	µg/l	-	-		nd
SVOC	µg/l	-	-		nd
Pesticides	µg/l	-	-		nd
Total Coliforms	cfu/100ml	-	-		3730
Faecal Coliforms	cfu/100ml	-	-		200

- Not Required

Surfacewater Results 2012 Fassaroe W0053-03: SW-5

Parameter	Units	1st Quarter 2012 02/02/2012	2nd Quarter 2011 01/05/2012	3rd Quarter 2012 17/09/2012	4th Quarter 2012 04/12/2012
Temperature	°C	8.3	8.1	10.1	7
Chloride	mg/l	60.3	18.1	26.9	26.3
COD	mg/l	30	31	28	<7
BOD	mg/l	<1	5	2	<1
Ammoniacal Nitrogen -N	mg/l	0.04	0.42	1.54	2.92
Tot. Susp. Solids	mg/l	14	12	506	247
Conductivity	mS/cm	1.913	0.515	0.603	0.52
Dissolved Oxygen	mg/l	12	6	2	11
pH	pH Units	8.11	7.97	8.3	8.6
Nitrate	mg/l	-	-		13.5
Calcium	mg/l	-	-		78.4
Magnesium	mg/l	-	-		6.1
Orthophosphate	mg/l	-	-		<0.06
Sulphate	mg/l	-	-		21.39
Mercury	µg/l	-	-		<1
Potassium	mg/l	-	-		1.9
Sodium	mg/l	-	-		14.3
Boron	µg/l	-	-		<0.012
Cadmium	µg/l	-	-		<0.5
Chromium	mg/l	-	-		0.0047
Copper	µg/l	-	-		<7
Iron	µg/l	-	-		<20
Manganese	µg/l	-	-		<2
Nickel	µg/l	-	-		<2
Lead	µg/l	-	-		<5
Zinc	µg/l	-	-		<3
VOC	µg/l	-	-		nd
SVOC	µg/l	-	-		nd
Pesticides	µg/l	-	-		nd
Total Coliforms	cfu/100ml	-	-		17,200
Faecal Coliforms	cfu/100ml	-	-		310

- Not Required

Agency Surface Water Monitoring Q-2 2012

		SW-1	SW-2	SW-3	SW-4
pH	**pH Units**	8.3	8.3	8.3	8.3
EC	**uS/cm**	441	444	443	448
BOD	**mg/l**	<2	<2	<2	<2
COD	**mg/l**	12	24	20	23
spended Sol	**mg/l**	<10	<10	<10	<10
Alkalinity	**mg/l**	194	194	196	196
rthophospha	**ug/l**	16	19	8	9
TON	**mg/l**	3.1	3.1	3.1	3.2
Ammonia	**mg/l**	0.06	0.06	0.06	0.05
Sodium	**mg/l**	14.9	15	15	15.1
Potassium	**mg/l**	2.1	2.2	2.2	2.2
Magnesium	**mg/l**	6.8	6.9	6.9	6.9
Calcium	**mg/l**	78.5	79.5	79.2	79.9
Fluoride	**mg/l**	0.07	0.07	0.07	0.07
Chloride	**mg/l**	24.1	24	24.2	24.2
Sulphate	**mg/l**	19.1	21.4	21.3	21.9
Boron	**ug/l**	24			24
Chromium	**ug/l**	1.7			1.8
Iron	**ug/l**	22			43
Manganese	**ug/l**	10			15
Nickel	**ug/l**	<0.5			<0.5
Copper	**ug/l**	12			1.1
Zinc	**ug/l**	13			1.3
Cadmium	**ug/l**	<0.1			<0.1
Mercury	**ug/l**	<0.05			<0.05
Lead	**ug/l**	<0.5			<0.5

WASTEWATER SUMMARY TABLES

Wastewater Results 2012 Fassaroe W0053-03: SE-1

Parameter	units	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
pH	pH Units	7.8	7.62	8.2	7.3	6.97	7.99	7.48	7.49	8.54	7.26	*	7.82
Temperature	°C	9.6	8.9	9.6	8.6	9.1	11.8	10.6	10.5	9.6	8.6	*	6.8
BOD	mg/l	209	101	127	198	494	28	256	376	55	15	*	466
COD	mg/l	365	N/A	N/A	403	N/A	N/A	472	N/A	N/A	N/A	*	1,221
Sulphate	mg/l	425.65	N/A	N/A	135.86	N/A	N/A	259.37	N/A	N/A	N/A	*	<0.05
TSS	mg/l	76	N/A	N/A	57	N/A	N/A	38	N/A	N/A	N/A	*	682
Surfactants	mg/l	0.2	N/A	N/A	6.3	N/A	N/A	6.6	N/A	N/A	N/A	*	2
Oils, Fats & Greases	mg/l	0.69	N/A	N/A	<0.01	N/A	N/A	1.14	N/A	N/A	N/A	*	13.58
Mineral Oil	mg/l	<0.01	N/A	N/A	0.26	N/A	N/A	1.45	N/A	N/A	N/A	*	0.31

* - It was not possible to collect a sample as there was no flow at the sampling location

LEACHATE SUMMARY TABLES

Leachate Level Results 2012 Fassaroe W0053-03

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
L-01	18.62	18.64	18.62	18.6	18.62	18.61	18.6	18.6	18.61	18.61	18.6	18.61
L-02	6.92	6.93	6.93	6.9	6.91	6.9	6.91	6.91	6.9	6.9	6.91	6.9
L-03	18.2	18.21	18.21	18.2	18.22	18.21	18.21	18.2	18.2	18.21	18.21	18.2

LANDFILL GAS SUMMARY TABLES

Landfill Gas Results 2012 Fassaroe W0053-03

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sample Station Number	**CH_4**	**CH_4**	**CH_4**	**CH_4**	**CH_4**	**CH_4**	**CH_4**	**CH_4**	**CH_4**	**CH_4**	**CH_4**	**CH_4**
	(% v/v)	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**
GS-01	0.0	0	0	0	0	0	0	0	0	0	0	0
GS-05	0.0	0	0	0	0	0	0	0	0	0	0	0
GS-07*	0.0	0	0	0	0	0	0	0	0	0	0.3	0.4
GS-08*	0.0	0	0	0	0	0	0	0	0	0	0.1	0
GS-09*	0.0	0	0	0	0	0	0	0	0	0	0	0.3
GS-10*	1.7	1.8	1.8	0	1.6	1.7	1.6	0	2.5	1.6	3.3	4.6
GS-11*	0.0	0	0	0	0	0	0	0	0	0	0.3	0
BH-2	0.0	0	0	0	0	0	0	0	0	0	0	0
BH-5	0.0	0	0	0	0	0	0	0	0	0	0	0
BH-6	0.0	0	0	0	0	0	0	0	0	0	0	0
BH-7	0.0	0	0	0	0	0	0	0	0	0	0	0
L-01*	1.6	4.8	1.7	0	2.1	2.2	0.2	2	1	3.2	0	0.9
L-02*	0.0	0	0	0	0	0	0	0	0	0	0	0
L-03*	0.0	0	0	0	0	1.6	0	0	0	0	0	0

- Problem with gas meter therefore it was not possible to take measurement

Landfill Gas Results 2012 Fassaroe W0053-03

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sample Station Number	**CO_2**	**CO_2**	**CO_2**	**CO_2**	**CO_2**	**CO_2**	**CO_2**	**CO_2**	**CO_2**	**CO_2**	**CO_2**	**CO_2**
	(% v/v)	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**
GS-01	0.0	0	0	0	0	0	0.3	0	0.3	0.3	0	0
GS-05	0.0	2.1	0	0	2.2	3.1	2.3	0	0	0	0	0
GS-07*	5.5	5.7	5.1	1.2	4.1	6.7	4.8	4.4	4.2	4.6	5.3	6.1
GS-08*	0.0	0	0	0	0	5.4	1.7	0	0	0	0	3.2
GS-09*	7.0	0.5	0.8	0	0.6	0.3	0.2	0	0	0.4	0.3	1.6
GS-10*	10.0	12	10.1	8.3	13.1	10.1	10.8	9.2	12	11.6	14	6.9
GS-11*	5.4	0	0	0	0	12.9	0.8	11.1	11.1	0	7.1	4.3
BH-2	0.2	0	0.4	0.4	0	0.3	0.7	0	0.3	0.2	1.3	0
BH-5	0.0	0	0	0	0	0.6	0	0	0	0	0	0
BH-6	1.0	0.9	0.9	0.7	0.4	1.6	0.5	1.8	0	0.6	0.6	0.9
BH-7	0.8	1.8	5.1	0.6	1.7	0.5	0.3	0	0.6	4.6	0.4	0.2
L-01*	7.3	3.4	7.8	0	4.1	13.5	0.9	1.1	2.2	3.6	0	4.1
L-02*	0.0	0	0	0.3	0	0	0	0	0	0	0	0
L-03*	0.0	0	0	0	0	11	0	1.4	1	0	0	0

- Problem with gas meter therefore it was not possible to take measurement

Landfill Gas Results 2012 Fassaroe W0053-03

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sample Station Number	**O_2**	**O_2**	**O_2**	**O_2**	**O_2**	**O_2**	**O_2**	**O_2**	**O_2**	**O_2**	**O_2**	**O_2**
	(% v/v)	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**	**(% v/v)**
GS-01	21.8	21.5	21.8	21.5	20.9	21.2	20.2	21.2	20.9	20.7	21.6	21.5
GS-05	21.7	17.9	21.7	21.6	17.6	17.4	17.9	21.4	21.1	21	21.6	21.2
GS-07*	14.8	14.2	14.6	19	15.6	9.3	14.3	16.6	17.1	15.6	13.5	11.2
GS-08*	21.5	21.5	21.8	21.4	21.3	14.2	18	21.1	21	21	21.3	16.1
GS-09*	9.6	20.6	19.5	21.2	20.1	20	20.8	21	21.2	19.9	20.6	17.1
GS-10*	4.9	0.1	4	16.9	4.3	2.1	3.1	8.2	3.4	0.3	0.1	1.9
GS-11*	16.1	21.5	21.9	21.3	21.2	3.9	19.6	8.9	8.4	21	10.7	13.9
BH-2	21.7	21.6	21.3	21.5	21.4	20.4	19.9	20.9	20.1	20.8	18.1	21.1
BH-5	21.7	21.7	21.9	21.6	21.3	19.6	21.3	21.2	21.1	21	21.6	21.3
BH-6	18.6	18.9	18.6	19.8	19.1	17.6	19.9	17	21.1	19.1	19.3	18.6
BH-7	19.8	19	14.6	20.8	19	20.4	20.9	20.1	19.2	15.6	20.9	20.6
L-01*	10.0	4.7	6.2	21	5.9	0	16.1	16.2	14.1	3.6	21.2	14.6
L-02*	21.6	21.4	21.7	21.1	21	20.9	21	21	21.2	21.2	21.6	21.2
L-03*	21.5	21.5	21.8	21.4	21.1	1.5	21	18.2	18.2	21	21.4	21.4

- Problem with gas meter therefore it was not possible to take measurement

Landfill Gas Results 2012 Fassaroe W0053-03

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sample Station Number	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**	**Barometric Pressure (mb)**
GS-01	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
GS-05	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
GS-07*	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
GS-08*	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
GS-09*	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
GS-10*	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
GS-11*	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
BH-2	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
BH-5	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
BH-6	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
BH-7	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
L-01*	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
L-02*	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001
L-03*	998.0	1003	1110	1019	1011	1113	1011	1008	1003	999	996	1001

- Problem with gas meter therefore it was not possible to take measurement

DUST SUMMARY TABLES

Dust Results 2012 Fassaroe W0053-03

	Dec 11 - Jan 12	Jan - Feb	Feb - Mar	Mar - Apr	Apr - May	May - Jun	Jun - July	Jul - Aug	Aug - Sep	Sep- Oct	Oct - Nov	Nov - Dec
DS-01	51.6	237	2	103.72	16.4	3.9	85.5	54.9	100.1	22.2	19.8	10.8
DS-02	73.7	194	31.15	191.37	15.8	14.1	33.2	15.3	206.5	133.5	24.6	26.8
DS-03	22.2	362	3.01	37.86	13.5	20.1	21.7	11.7	48.6	115.3	12.9	11.5
DS-04	327.1	459	*	29.56	41	7.2	*	12.6	41.9	22.4	18.1	35.6

* - Dust gauge damaged during monitoring period

NOISE SUMMARY TABLES

Noise Results 2012 Fassaroe W0053-03 Q1

Location	Time	Measured Noise Levels (dB re. 2x10-5 Pa)				Comments
		L_{Aeq}	L_{A10}	L_{A90}	Specific level*	
N1	0918-0948	58	61	50	56	Intermittent truck movements through Greenstar entrance dominant when present, particularly when queuing at weighbridge. During lulls in entrance traffic, onsite genset emissions, and offsite N11 traffic continuously audible, latter dominant. Noise also audible from road traffic through roundabout outside site entrance, Thornhill Road, bird song/calls and aircraft.
N2	0952-1022	53	55	48	52	Intermittent truck movements through site entrance and on weighbridge dominant. During lulls, continuous genset emissions audible in background. Emissions from mobile plant and truck movements around yard also slightly audible. Offsite, N11 traffic continuously audible in background, and significant. Bird song/calls and aircraft.
N3	1058-1128	56	58	49	50	Emissions from loader around yard areas audible at low level. No other site emissions audible apart from occasional truck movements onsite, and van manoeuvring locally in car park at 1118. N11 traffic continuously audible in background. Bird song/calls and aircraft. Distant dog barking. Passing helicopter intrusive 1108-1110.
N4	1026-1056	43	45	42	<42	No facility emissions audible. Watercourse on valley floor continuously dominant, and masking all other sources except local birdsong and aircraft.
NSL1	0847-0917	54	56	51	<51	Site emissions slightly audible, from genset and intermittent truck movements through entrance. Offsite road traffic noise entirely dominant, from Thornhill Road outside boundary and continuous N11 traffic. Bird song/calls and aircraft. Occasional hammering noise from garden at nearby residence.
NSL2	0809-0839	66	70	48	<48	No site emissions audible, apart from faintly audible reversing alarms on occasion. Intermittent local road traffic dominant. During lulls, N11 traffic continuously audible in background, and significant. Bird song/calls and aircraft audible.

* Specific level: Sound pressure level contribution considered attributable to facility, determined from field notes, time history profiles, statistical analysis, frequency spectra and other parameters.

Noise Results 2012 Fassaroe W0053-03 Q2

Location	Time	Measured Noise Levels (dB re. 2x10-5 Pa)				Comments
		L_{Aeq}	L_{A10}	L_{A90}	Specific level*	
N1	0839-0909	59	60	51	57	Occasional truck movements through Greenstar entrance, and idling on weighbridge, dominant when present. Noise emissions from deeper within site slightly audible, although masked by continuous traffic noise along N11 corridor. Local birdsong and vehicles through roundabout outside site gate audible.
N2	0825-0851	53	54	50	52	Truck movements through entrance and weighbridge, and sporadic cars accessing carpark, dominant when present. Emissions from deeper within site slightly audible. N11 traffic significant. Local birdsong and aircraft audible. Measurement terminated 4 min early due to adjacent idling car.
N3	0906-0936	58	60	52	57	Tracked excavator operating on construction project onsite at 50 m continuously audible and dominant. No other site emissions audible. N11 traffic continuously clearly audible. Bird song/calls and aircraft.
N4	0913-0943	50	52	47	<47	No site emissions audible apart from faintly audible excavator operating near E end of embankment. N11 traffic clearly audible continuously. Watercourse in valley slightly audible. Birdsong significant. Aircraft.
NSL1	0806-0836	53	56	49	<49	Truck emissions through Greenstar gate and idling on weighbridge audible at low level. N11 traffic continuously audible and dominant, masking all other noise other than intermittent Thornhill Road traffic and local birdsong.
NSL2	0953-1023	63	60	48	<48	No facility emissions audible. Intermittent Thornhill Road traffic dominant when present. N11 traffic continuously significant along corridor. Bird song/calls and aircraft. Dwelling construction noise

Noise Results 2012 Fassaroe W0053-03 Q3

Location	Time	Measured Noise Levels (dB re. 2x10-5 Pa)				Comments
		L_{Aeq}	L_{A10}	L_{A90}	Specific level*	
N1	0844-0914	55	58	46	55	Vehicle movements through Greenstar entrance and weighbridge area dominant when present. Occasional truck and plant movements around site also audible. Facade fans continuously audible at low level. Bird song/calls and aircraft. Road traffic outside roundabout clearly audible when present. N11 traffic faintly audible, greatly attenuated due to breeze direction. Intermittent bird scarer device (crowbanger) audible offsite across valley. Rustling vegetation.
N2	0916-0946	57	57	48	57	Occasional truck movements through entrance and weighbridge area dominant when present. Infrequent car movements through car park also dominant when present. Otherwise, emissions from deeper within site continuously audible at low level, from plant and facade fans. Bird calls significant. Rustling vegetation and aircraft. No offsite traffic audible. Crowbanger audible across valley.
N3	1023-1053	46	49	42	42	Site emissions occasionally audible, chiefly from truck and skip movements near NW corner. Bird song/calls significant. Intermittent bird scarer device offsite across valley intrusive. Aircraft. N11 traffic not audible. Occasional hammering audible at domestic construction project to E.
N4	0950-1020	43	44	41	<41	No emissions audible from facility. Noise dominated by local rustling vegetation and bird song/calls. Watercourse in valley floor also continuously audible. Intermittent bird crowbanger offsite across valley audible.
NSL1	0811-0841	49	51	45	47	Sporadic truck movements through entrance and weighbridge clearly audible when present. Continuous facade fan emissions continuously audible at low level, although not intrusive. Local road traffic on roundabout outside site and on Thornhill Road significant when present. N11 traffic faintly audible, greatly reduced due to breeze direction. Local bird calls significant. Construction activity at nearby dwelling occasionally audible. Aircraft. Bird crowbanger audible offsite across valley. Rustling vegetation.
NSL2	1058-1128	58	56	46	<46	No emissions audible from site. Noise dominated by domestic construction activity at adjacent site, from hammering, telescopic handler, and small concrete mixer (entirely dominant from 1106). Thornhill Road traffic dominant when present. Bird song/calls. N11 traffic not audible.

* Specific level: Sound pressure level contribution considered attributable to facility, determined from field notes, time history profiles, statistical analysis, frequency spectra and other parameters.

Noise Results 2012 Fassaroe W0053-03 Q4

Location	Time	Pa) L_{Aeq}	L_{A10}	L_{A90}	Specific level*	Comments
N1	1038-1108	57	59	53	54	Sporadic truck movements through gate and weighbridge area dominant when present. Plant and truck movements deeper within site also slightly audible occasionally. N11 traffic continuously audible and dominant. Occasional Thornhill Road traffic, and vehicles through roundabout outside gate, significant when present. Bird song/calls. Aircraft.
N2	1111-1141	56	57	51	54	Sporadic truck movements through gate and weighbridge area dominant when present. Plant and truck movements deeper within site also clearly audible occasionally, and faintly audible facade fans. N11 traffic continuously audible and dominant. Bird song/calls. Aircraft. Dog barking audible at nearby house for several minutes.
N3	1219-1249	52	54	50	<50	Site operations audible at low level, chiefly truck and bin movements on nearest yard area, with processing operations slightly audible. Almost entirely masked however by continuous N11 traffic noise. Thornhill Road traffic also audible. Bird song/calls and aircraft.
N4	1144-1214	46	47	45	<45	No site emissions audible, apart from truck movements near top of bank, slightly audible when present. N11 traffic continuously audible, and codominant with water flow through valley floor. Bird song/calls and aircraft. Sporadic emissions audible from construction activity at dwelling to SW.
NSL1	1006-1036	55	57	53	<53	No site emissions audible, other than sporadic truck movements through gate area. N11 traffic continuously audible and dominant. Occasional Thornhill Road traffic dominant when present. Local birdsong significant. Aircraft.
NSL2	0928-0958	58	58	49	<49	No site emissions audible. Occasional local traffic dominant when present. N11 traffic continuously significant in background. Sporadic emissions from construction activity at nearby dwelling. Bird song/calls and aircraft. Van manoeuvring at nearby dwelling 0935-0937.

* Specific level: Sound pressure level contribution considered attributable to facility, determined from field notes, time history profiles, statistical analysis, frequency spectra and other parameters.

APPENDIX 2

Procedures Index

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 03, 28/05/12
IP-12	Management Review Procedure	Rev 01, 05/07/10
IP-13	Control of Contractors/Visitors Procedure	Rev 03, 08/06/12
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 02, 03/05/12
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
SP-11	Cleaning of Washing Bay (Greenogue)	Rev 01, 05/05/12

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

Amendment History

Date	Amendment No.	Procedure No:	Revision No:	Comment	Authorised By
05.07.10	01	All	01	Initial Issue	M.D & O.C
13.09.10	02	EP-03	02	Issue of Incident Reports	M.D
20.09.10	03	IP-10	02	Env issues not logged on WIMS Database	M.D
29.10.10	04	IP-13	02	Use of M&M equipment by contractors	M.D & O.C
29.10.10	05	IP-14	02	Use of M&M equipment by contractors	M.D & O.C
29.10.10	06	SP-02	02	Inclusion of Maintenance Schedule	M.D & O.C
05.11.10	07	IP-04	02	Inclusion of other requirements	S.B & O.C
01.02.11	08	SP-08	01	Inclusion of new procedure	O.C
01.02.11	09	IP-10	03	Inclusion of SP-08	O.C
01.02.11	10	IP-15	02	Removal of SF-022	O.C
01.02.11	11	Contents	As shown	EP-10 Site Specific	M.D & O.C
01.02.11	12	Circ List	02	Amendment to document control	M.D & O.C
04.04.11	13	SP-02	03	Inclusion of Site Specific Maintenance schedules	O.C
07.06.11	14	IP-11	02	Inclusion of H&S & Env Internal Audit Schedules	M.D & O.C
14/09/11	15	EP-02	02	Inclusion of decommissioning of plant/equipment	S.B
15/09/11	16	IP-09	02	Inclusion of Statutory Inspections	O.C
01/12/11	17	SP-09	01	Inclusion of new procedure for SCGT	O.C
01/12/11	18	SP-10	01	Inclusion of new procedure for SCGT	O.C
03/05/12	19	SP-01	02	Amendment to remove SF 028	O.C
05/05/12	20	SP-11	01	Inclusion of a new procedure for Greenogue	O.C
28/05/12	21	IP-11	03	General Amendments to internal audit procedure	M.D & O.C
08/06/12	22	IP-13	03	Grammatical amendment	M.D & O.C

Circulation List

The Integrated Procedures Manual is a controlled document. Copies of the Integrated Procedures Manual are available as follows;

Copy Number	***Holder***
1 (Master Copy)	Environmental, Health & Safety (EHS) Executive
2	Greenstar Limited Intranet – Electronic Copy

APPENDIX 3

European Pollutant Release and Transfer Register

Environmental Protection Agency

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.15

REFERENCE YEAR	2012

1. FACILITY IDENTIFICATION

Parent Company Name	Greenstar Limited
Facility Name	Greenstar Limited
PRTR Identification Number	W0053
Licence Number	W0053-03

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.
3.11	Blending or mixture 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.
4.11	Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
4.12	Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
4.13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.
4.2	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
4.3	Recycling or reclamation of metals and metal compounds.
4.4	Recycling or reclamation of other inorganic materials.

Address 1	Bray Depot
Address 2	La Vallee House
Address 3	Fassaroe
Address 4	Bray, Co. Wicklow
	Wicklow
Country	Ireland
Coordinates of Location	-6.141357577 53.19976882
River Basin District	IEEA
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Malcolm Dowling
AER Returns Contact Email Address	malcolm.dowling@greenstar.ie
AER Returns Contact Position	Group Compliance Manager
AER Returns Contact Telephone Number	012947976
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	10
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) 50.1	Installations for the disposal of non-hazardous waste 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) ?	

This question is only applicable if you are an IPPC or Quarry site

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD				QUANTITY		
			Method Used					
No. Annex II	Name	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		METHOD				QUANTITY		
			Method Used					
No. Annex II	Name	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		METHOD				QUANTITY		
			Method Used					
Pollutant No.	Name	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 Limited

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

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 this onl

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
			Method Used					
No. Annex II	Name	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 WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
			Method Used					
No. Annex II	Name	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 WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
			Method Used					
Pollutant No.	Name	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

4.3 RELEASES TO WASTEWATER OR SEWER

Link to previous years emissions data

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			
			Method Used					
No. Annex II	Name	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 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			
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
303	BOD	C	PER	Calculated based on annual flow rate. Analysis is ISO accredited	392.5	392.5	0.0	0.0
306	COD	C	PER	Calculated based on annual flow rate. Analysis is ISO accredited	1358.5	1358.5	0.0	0.0
343	Sulphate	C	PER	Calculated based on annual flow rate. Analysis is ISO accredited	485.7	485.7	0.0	0.0
240	Suspended Solids	C	PER	Calculated based on annual flow rate. Analysis is ISO accredited	263.5	263.5	0.0	0.0
308	Detergents (as MBAS)	C	PER	Calculated based on annual flow rate. Analysis is ISO accredited	2.5	2.5	0.0	0.0
314	Fats, Oils and Greases	C	PER	Calculated based on annual flow rate. Analysis is ISO accredited	3.69	3.69	0.0	0.0
324	**Mineral oils**	C	PER	Calculated based on annual flow rate. Analysis is ISO accredited	5.73	5.73	0.0	0.0

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

SECTION A : PRTR POLLUTANTS

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
			Method Used				
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)

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
			Method Used				
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

Please enter all quantities on this sheet in Tonnes

0

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 Non 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					
Within the Country	10 02 11	Yes	0.18	wastes from cooling-water treatment containing oil	D9	M	Weighed	Offsite in Ireland	Enva Ltd.,W0184-01	Clonminam Industrial Estate,Portlaoise,Co. Laois,.,Ireland	Enva Ltd.,W0184-01,Clonminam Industrial Estate,Portlaoise,Co. Laois,.,Ireland	Clonminam Industrial Estate,Portlaoise,Co. Laois,.,Ireland
Within the Country	13 02 08	Yes	0.74	other engine, gear and lubricating oils	R3	M	Weighed	Offsite in Ireland	Enva Ltd.,W0184-01	Clonminam Industrial Estate,Portlaoise,Co. Laois,.,Ireland	Enva Ltd.,W0184-01,Clonminam Industrial Estate,Portlaoise,Co. Laois,.,Ireland	Clonminam Industrial Estate,Portlaoise,Co. Laois,.,Ireland
Within the Country	15 01 01	No	127.3	paper and cardboard packaging	R3	M	Weighed	Offsite in Ireland	Bailey Waste Recycling,WFP-FG-08-0002-01	Rosemount Business Park,Ballycoolin Road,Blanchardstown ,Dublin 16 ,Ireland		
To Other Countries	15 01 01	No	1402.6	paper and cardboard packaging	R3	M	Weighed	Abroad	Agnail ,TFS Broker IRE/AG117/11	.,.,Ballycoolin,Dublin,Ireland		
To Other Countries	15 01 01	No	4352.692	paper and cardboard packaging	R3	M	Weighed	Abroad	Cellmark USA,IRE/G180/11	200 Tamal Plaza,California,.,95245,United States		
To Other Countries	15 01 01	No	634.52	paper and cardboard packaging	R3	M	Weighed	Abroad	International Recycling Ltd.,IRE/G050/08	Heath House,5 Woogate Court,Norwich,NR2 4AP,United Kingdom		
To Other Countries	15 01 01	No	3830.26	paper and cardboard packaging	R3	M	Weighed	Abroad	MLM (ACN Europe) Ltd ,TFS Broker IRE/G022/11	.,.,.,.,United Kingdom		
Within the Country	15 01 01	No	179.88	paper and cardboard packaging	R3	M	Weighed	Offsite in Ireland	Marwin Environmental,926	7 Glyntown Heights ,Glanmire,Co. Cork,.,Ireland		
Within the Country	15 01 01	No	52.36	paper and cardboard packaging	R3	M	Weighed	Offsite in Ireland	Materia Environmental Ltd,IRE/AG161/11,The Kipper House ,Scilly,Scilly,Kinsale,Co Cork	The Kipper House ,Scilly,Scilly,Kinsale,Co Cork		
To Other Countries	15 01 01	No	1057.06	paper and cardboard packaging	R3	M	Weighed	Abroad	Mark Lyndon Paper Enterprises,IRE/G021/12,12 The Triangle ,Nottingham ,Nottinghamshire NG2 1AE,.,United Kingdom	12 The Triangle ,Nottingham ,Nottinghamshire NG2 1AE,.,United Kingdom		
Within the Country	15 01 01	No	346.1	paper and cardboard packaging	R3	M	Weighed	Offsite in Ireland	Irish Packaging Limited,TFS Broker IRE/AG113/11	.,.,.,.,ireland		
To Other Countries	15 01 02	No	130.16	plastic packaging	R3	M	Weighed	Abroad	Alternative Waste Solutions,IRE/G009/08	Unit 2 Britannia Business Park,Wallsend ,Tyne and Wear,NE38 6HA,United Kingdom		
To Other Countries	15 01 02	No	10.24	plastic packaging	R3	M	Weighed	Abroad	Agnail ,TFS Broker IRE/AG117/11	.,.,Ballycoolin,Dublin,Ireland		
To Other Countries	15 01 02	No	357.36	plastic packaging	R3	M	Weighed	Abroad	Cellmark USA,IRE/G180/11	200 Tamal Plaza,California,.,95245,United States		
To Other Countries	15 01 02	No	182.46	plastic packaging	R3	M	Weighed	Abroad	Cherry Pipes,IRE/G037/08	Unit 5 Nutts Corner Business Park,Dundrod Road,Crumlin,Co. Antrim BT29 4SR,United Kingdom		
To Other Countries	15 01 02	No	44.46	plastic packaging	R3	M	Weighed	Abroad	International Recycling Ltd.,IRE/G050/08	Heath House,5 Woogate Court,Norwich,NR2 4AP,United Kingdom		
To Other Countries	15 01 02	No	1004.96	plastic packaging	R3	M	Weighed	Abroad	J & A Young ,TFS Broker IRE/G058/11	.,.,.,.,United Kingdom		
Within the Country	15 01 02	No	36.88	plastic packaging	R3	M	Weighed	Offsite in Ireland	Leinster Environmentals,WP 2008/06	Clermont Business Park,Haggardstown,Dundalk, Co. Louth,Ireland		

Within the Country	15 01 02	No	756.0	plastic packaging	R3	M	Weighed	Offsite in Ireland	Materia Environmental Ltd,IRE/AG161/11,The Kipper House ,Scilly,Scilly,Kinsale,Co Cork	The Kipper House ,Scilly,Scilly,Kinsale,Co Cork		
To Other Countries	15 01 02	No	391.58	plastic packaging	R3	M	Weighed	Abroad	Peute Papier Recycling BV,IRE/G006/08	Veeplaat 40,3313 LJ Dordrecht,.,.,Netherlands		
Within the Country	15 01 02	No	15.45	plastic packaging	R3	M	Weighed	Offsite in Ireland	Polymer Recovery Ltd,WFP-LS-09-0007-01,Polymer Recovery Ltd ,East Canal road ,Portarlington Business Park ,Portarlington ,Co. Laois.	Polymer Recovery Ltd ,East Canal road ,Portarlington Business Park ,Portarlington ,Co. Laois.		
Within the Country	15 01 02	No	177.52	plastic packaging	R3	M	Weighed	Offsite in Ireland	Shabra Recycling,WFP-MN-08-0022-01	Killycard Industrial Estate,Castleblayney,Co. Monaghan,.,Ireland		
Within the Country	15 01 03	No	11.84	wooden packaging	R3	M	Weighed	Offsite in Ireland	CJ Sheerans,P0337-01 ,The Sawmills,Shannon Street,Mountrath,Co. Laois,Ireland	The Sawmills,Shannon Street,Mountrath,Co. Laois,Ireland		
Within the Country	15 01 03	No	9.68	wooden packaging	R4	M	Weighed	Offsite in Ireland	Max Pallet Services,Not Required	Colemanstown,Rathcoole,Co. Dublin,.,Ireland		
Within the Country	15 01 04	No	212.92	metallic packaging	R4	M	Weighed	Offsite in Ireland	Green Dragon Recycling, WFP-CK-10-0060-02,CORBALLY NORTH ,GLANMIRE ,CO. CORK,Cork,Ireland	CORBALLY NORTH ,GLANMIRE ,CO. CORK,Cork,Ireland		
Within the Country	15 01 04	No	54.74	metallic packaging	R4	M	Weighed	Offsite in Ireland	Northern Trading Cumbria Ltd.,IRE/G296/12,Stamp Hill,Kirkby Thore,Penrith,Cumbria,CA10 1XR	Stamp Hill,Kirkby Thore,Penrith,Cumbria,CA10 1XR		
Within the Country	15 01 07	No	26.94	glass packaging	R5	M	Weighed	Offsite in Ireland	Rehab Glassco,WFP-KE-08-0957-01	Nass,Kildare,.,.,ireland		
Within the Country	16 01 03	No	18.1	end-of-life tyres	R1	M	Weighed	Offsite in Ireland	Crumb Rubber Ireland ltd,WFP-LH-10-0005-01,Crumb Rubber Ireland ltd,Mooretown Dromiskin ,Dundalk ,Co.Louth,Ireland	Crumb Rubber Ireland ltd,Mooretown Dromiskin ,Dundalk ,Co.Louth,Ireland		
Within the Country	16 05 04	Yes	0.92	gases in pressure containers (including halons) containing dangerous substances	R4	M	Weighed	Offsite in Ireland	BOC Gas,P0051-02, Bluebell IE ,Dublin 12 ,-,-,Ireland	Bluebell IE ,Dublin 12 ,-,-,Ireland	BOC Gas,P0051-02, Bluebell IE ,Dublin 12 ,-,-,Ireland	Bluebell IE ,Dublin 12 ,-,-,Ireland
Within the Country	16 06 01	Yes	4.94	lead batteries	R4	M	Weighed	Offsite in Ireland	KMK Metals,W0113-03	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	KMK Metals,W0113-03,Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland
Within the Country	19 05 99	No	2589.38	wastes not otherwise specified	R3	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0165-02	Ballynagran,Coolbeg & Kilcandra,Co. Wicklow,.,Ireland		
Within the Country	19 12 07	No	19.46	wood other than that mentioned in 19 12 06	R3	M	Weighed	Offsite in Ireland	Acorn Recycling ,W0249-01	Littleton ,Co Tipperary ,.,.,ireland	Harbour Trading,(Licence N/A),Bray,Wicklow,.,.,ireland	Bray,Wicklow,.,.,ireland
Within the Country	19 12 07	No	472.98	wood other than that mentioned in 19 12 06	R3	M	Weighed	Offsite in Ireland	Waddocks Composting,WP11/04 & WP 01/02	Killamaster,Co. Carlow,.,.,Ireland		
Within the Country	19 12 07	No	176.66	wood other than that mentioned in 19 12 06	R3	M	Weighed	Offsite in Ireland	Greenstar Ltd Knockharley Landfill ,W0146-02,Kentstown ,Co. Meath ,-,-,Ireland	Kentstown ,Co. Meath ,-,-,Ireland		
Within the Country	19 12 07	No	1937.46	wood other than that mentioned in 19 12 06	R3	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd ,W0178-01	Connaught Regional Landfill ,Ballinasloe ,Co. Galway,.,ireland		
Within the Country	19 12 07	No	3851.14	wood other than that mentioned in 19 12 06	R3	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0165-02	Ballynagran,Coolbeg & Kilcandra,Co. Wicklow,.,Ireland		

Within the Country	19 12 07	No	566.26	wood other than that mentioned in 19 12 06	R3	M	Weighed	Offsite in Ireland	Ormonde Organics,W0237-01	Unit 643 Greenogue Industrial Estate,Rathcoole,Co. Dublin,.,Ireland			
Within the Country	19 12 09	No	1724.72	minerals (for example sand, stones)	R3	M	Weighed	Offsite in Ireland	Marrakesh Landfill,W0048-01	Kilmurry South ,Bray ,Co Wicklow ,.,ireland			
Within the Country	19 12 09	No	171.16	minerals (for example sand, stones)	R3	M	Weighed	Offsite in Ireland	Greenstar Ltd Knockharley Landfill ,W0146-02,Kentstown ,Co. Meath ,-,-,Ireland	Kentstown ,Co. Meath ,-,-,Ireland			
Within the Country	19 12 09	No	1601.68	minerals (for example sand, stones)	R3	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd ,W0178-01	Connaught Regional Landfill ,Ballinasloe ,Co. Galway,.,ireland			
Within the Country	19 12 09	No	14402.86	minerals (for example sand, stones)	R3	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0165-02	Ballynagran,Coolbeg & Kilcandra,Co. Wicklow,.,Ireland			
Within the Country	19 12 12	No	3086.56	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	R5	M	Weighed	Offsite in Ireland	Bord na Mona. Drehid Landfill,W0201-03,Carbury ,Co Kildare ,-,-,Ireland	Carbury ,Co Kildare ,-,-,Ireland			
Within the Country	19 12 12	No	811.36	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	R5	M	Weighed	Offsite in Ireland	Greyhound Recycling & Recovery Limited,W0205-01	Crag Avenue,Clondalkin Industrial Estate,Clondalkin ,Dublin 22,Ireland			
Within the Country	19 12 12	No	19.76	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	R5	M	Weighed	Offsite in Ireland	Thorntons Waste Disposal , W0195-01	Kilmainhamwood ,Kells ,Co Meath,.,ireland			
Within the Country	19 12 12	No	1593.34	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	R5	M	Weighed	Offsite in Ireland	Greenstar Ltd Knockharley Landfill ,W0146-02,Kentstown ,Co. Meath ,-,-,Ireland	Kentstown ,Co. Meath ,-,-,Ireland			
Within the Country	19 12 12	No	9596.6	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	R5	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0165-02	Ballynagran,Coolbeg & Kilcandra,Co. Wicklow,.,Ireland			
Within the Country	19 12 12	No	4842.2	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	R5	M	Weighed	Offsite in Ireland	Greenstar Limited,W0183-01	Millennium Business Park,Grange,Ballycoolin,Dublin 11,Ireland			
To Other Countries	20 01 01	No	7546.85	paper and cardboard	R3	M	Weighed	Abroad	Cellmark USA,IRE/G180/11	200 Tamal Plaza,California,.,95245,United States			
To Other Countries	20 01 01	No	7283.278	paper and cardboard	R3	M	Weighed	Abroad	MLM (ACN Europe) Ltd ,TFS Broker IRE/G022/11	.,.,.,.,United Kingdom			
Within the Country	20 01 01	No	893.26	paper and cardboard	R3	M	Weighed	Offsite in Ireland	Marwin Environmental,926	7 Glyntown Heights ,Glanmire,Co. Cork,.,Ireland			
To Other Countries	20 01 01	No	1799.22	paper and cardboard	R3	M	Weighed	Abroad	Mark Lyndon Paper Enterprises,IRE/G021/12,12 The Triangle ,Nottingham ,Nottinghamshire NG2 1AE,.,United Kingdom	12 The Triangle ,Nottingham ,Nottinghamshire NG2 1AE,.,United Kingdom			
Within the Country	20 01 02	No	11.65	glass	R5	M	Weighed	Offsite in Ireland	Rehab Glassco,WFP-KE-08-0957-01	Nass,Kildare,.,.,ireland			
Within the Country	20 01 08	No	372.68	biodegradable kitchen and canteen waste	R3	M	Weighed	Offsite in Ireland	Waddocks Composting,WP11/04 & WP 01/02	Killamaster,Co. Carlow,.,.,Ireland			
Within the Country	20 01 11	No	2.34	textiles	R3	M	Weighed	Offsite in Ireland	Textile Recycling Ltd ,Licence exempt,Glen Abbey Complex ,Belgard ,Tallaght ,Dublin 24 ,ireland	Glen Abbey Complex ,Belgard ,Tallaght ,Dublin 24 ,ireland			
Within the Country	20 01 23	Yes	2.26	discarded equipment containing chlorofluorocarbons	R5	M	Weighed	Offsite in Ireland	KMK Metals,W0113-03,Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	KMK Metals,W0113-03,Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	

Within the Country	20 01 35	Yes	1.66	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and and 20 01 23 containing hazardous components	R4	M	Weighed	Offsite in Ireland	KMK Metals,W0113-03,Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	KMK Metals,W0113-03,Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland
To Other Countries	20 01 35	Yes	11.06	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and and 20 01 23 containing hazardous components	R4	M	Weighed	Abroad	NWP Recycling ,NWP Recycling , Portadown ,Co Armagh ,,.,.,United Kingdom	Portadown ,Co Armagh ,,.,.,United Kingdom	NWP Recycling ,NWP Recycling , Portadown ,Co Armagh ,,.,.,United Kingdom	Portadown ,Co Armagh ,,.,.,United Kingdom
Within the Country	20 01 39	No	114.655	plastics	R3	M	Weighed	Offsite in Ireland	Leinster Environmentals,WP 2008/06	Clermont Business Park,Haggardstown,Dundalk, Co. Louth,Ireland		
To Other Countries	20 01 39	No	25.22	plastics	R3	M	Weighed	Abroad	Peute Papier Recycling BV,IRE/G006/08	Veeplaat 40,3313 LJ Dordrecht,.,.,.,Netherlands		
Within the Country	20 01 40	No	972.5	metals	R4	M	Weighed	Offsite in Ireland	Davis Recycling Ltd,W0134-01	10 The Anchorage Business Park,Charlotte Quay,Dublin 4,.,Ireland		
Within the Country	20 01 40	No	558.76	metals	R4	M	Weighed	Offsite in Ireland	Multi Metals ,WFP-WW-09-0014-01	Blessington ,Co Wicklow ,.,.,ireland		
Within the Country	20 02 01	No	1271.48	biodegradable waste	R3	M	Weighed	Offsite in Ireland	Enrich Environmental,WMP 2004/57	Kilcock Co. Kildare,.,.,.,Ireland	KMK Metals,W0113-03,Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland
Within the Country	20 03 01	No	4259.04	mixed municipal waste	D5	M	Weighed	Offsite in Ireland	Bord na Mona. Drehid Landfill,W0201-03,Carbury ,Co Kildare ,-,-,Ireland	Carbury ,Co Kildare ,-,-,Ireland	WEEE Recycling (KMK Metals),W0113-03,Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland
Within the Country	20 03 01	No	597.7	mixed municipal waste	R1	M	Weighed	Offsite in Ireland	Indaver IWMF ,W0167-02	Carlanstown , Duleek , Co Meath ,.,ireland	KMK Metals,W0113-03,Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland
Within the Country	20 03 01	No	2006.62	mixed municipal waste	D5	M	Weighed	Offsite in Ireland	Greenstar Ltd Knockharley Landfill ,W0146-02,Kentstown ,Co. Meath ,-,-,Ireland	Kentstown ,Co. Meath ,-,-,Ireland	NWP Recycling ,NWP Recycling , Portadown ,Co Armagh ,,.,.,United Kingdom	Portadown ,Co Armagh ,,.,.,United Kingdom
Within the Country	20 03 01	No	34605.71	mixed municipal waste	D5	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0165-02	Ballynagran,Coolbeg & Kilcandra,Co. Wicklow,.,Ireland		
Within the Country	20 03 01	No	25.14	mixed municipal waste	R3	M	Weighed	Offsite in Ireland	Greenstar Environmental Services Ltd ,W0177-03,Six Cross Roads Business Park ,Waterford City ,-,-,Ireland	Six Cross Roads Business Park ,Waterford City ,-,-,Ireland		
Within the Country	20 03 03	No	21.9	street-cleaning residues	D5	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0165-02	Ballynagran,Coolbeg & Kilcandra,Co. Wicklow,.,Ireland		
Within the Country	20 03 07	No	39.48	bulky waste	D5	M	Weighed	Offsite in Ireland	Bord na Mona. Drehid Landfill,W0201-03,Carbury ,Co Kildare ,-,-,Ireland	Carbury ,Co Kildare ,-,-,Ireland		
Within the Country	20 03 07	No	34.54	bulky waste	R3	M	Weighed	Offsite in Ireland	Greyhound Recycling & Recovery Limited,W0205-01	Crag Avenue,Clondalkin Industrial Estate,Clondalkin ,Dublin 22,Ireland		
Within the Country	20 03 07	No	36.34	bulky waste	R3	M	Weighed	Offsite in Ireland	Thorntons Waste Disposal , W0195-01	Kilmainhamwood ,Kells ,Co Meath,.,ireland		
Within the Country	20 03 07	No	174.52	bulky waste	D5	M	Weighed	Offsite in Ireland	Greenstar Ltd Knockharley Landfill ,W0146-02,Kentstown ,Co. Meath ,-,-,Ireland	Kentstown ,Co. Meath ,-,-,Ireland		
Within the Country	20 03 07	No	102.58	bulky waste	D5	M	Weighed	Offsite in Ireland	Greenstar Holdings Ltd.,W0165-02	Ballynagran,Coolbeg & Kilcandra,Co. Wicklow,.,Ireland		

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