

Greenclean Waste Management Ltd

Licence No. W0222-01

Annual Environmental Report

2008

EURO environmental services

Unit 35A Boyne Business Park, Drogheda, Co. Louth

Report No. 2850/M03

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1.0 Company Details

Company Name: Green Clean Waste Management Ltd

Licence Register Number: W0222-01

Address: Coldwinters
Blake's Cross
Lusk
Co. Dublin

Managing Director: John Boardman

Operations Director: Derek Boardman

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2.0 Overview

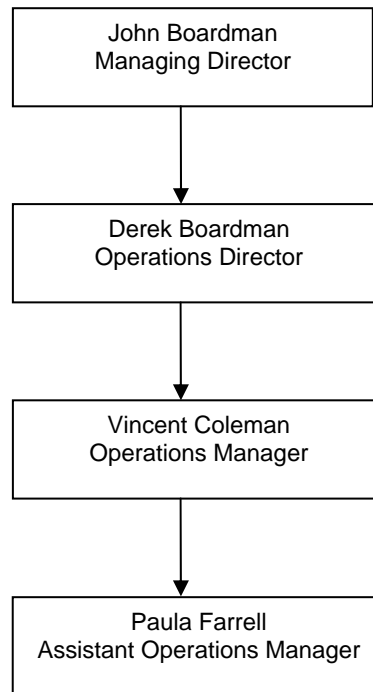
Greenclean Waste Management Ltd (Greenclean) commissioned EURO Environmental services to carry out environmental monitoring and associated reporting at Greenclean Waste Management Ltd, Waste Licence 0222-01, situated at Blake's Cross, Lusk, County Dublin

Under the conditions of W0222-01, the Greenclean facility is licensed to accept and dispatch waste between the hours of 0800 hours and 1800 Monday to Friday inclusive, and between the hours of 0800 and 1400 on Saturdays. The facility is licensed to be operational between the hours of 0700 and 2000 Monday to Friday inclusive, and 0700 to 1600 on Saturday

This annual environmental report summarises the environmental performance for the year 2008. This report has been compiled in accordance with the EPA Guidance note for an annual environmental report, using template spreadsheets from the Office of Environmental Enforcement.

3.0 Environmental Management

The current management structure at the Greenclean Blake's Cross facility is detailed in the following Environmental Management Chart:



Name	Position	Responsibilities	Experience	Replacement
John Boardman	Managing Director	Directs and oversees all company affairs	Excess of 40 years in waste sector	Derek Boardman
Derek Boardman	Operations Director	Directs all company operations	20 years in waste sector	Vincent Coleman
Vincent Coleman	Operations Manager	General facility management, EMS, staffing, environmental management, monitoring, record keeping	9 years in waste sector, FAS waste management course	Paula Farrell
Paula Farrell	Deputy Operations Manager	Deputy to Operation Manager	10 years and FAS waste management course	Stephen Deagan

4.0 Waste Activities

The Greenclean facility is licensed to handle a maximum of 95,000 tonnes of waste per annum which allows for 13,200 tonnes of household waste; 29,000 tonnes of non hazardous construction and demolition waste; and 52,800 tonnes of non hazardous commercial and industrial waste.

4.1 Waste Types

- Household Waste (EWC)

Household waste is collected from households in the Greater Dublin area.

- Construction and Demolition Waste (EWC 17 09 and 17 05)

Construction and demolition material arrives on-site in skips of varying sizes and comprises mixed construction and demolition wastes, soil and stone. The waste loads are inspected, segregated and recyclable materials are extracted from the waste for reuse prior to the transfer of residual materials to licensed landfill.

- Commercial and Industrial Waste (EWC code 20 01, 20 03)

Both mixed and segregated commercial waste is collected from commercial outlets throughout the Greater Dublin, Wicklow, Louth, east Meath and north Kildare region. Commercial waste rich in recyclables (paper, cardboard and plastic) is delivered to the facility by third party hauliers and by Greenclean vehicles. Recyclable material is segregated, where possible, from the waste stream. The remaining non-recyclable or residual material is transferred to licensed landfills.

4.2 Individual Waste Streams

Packaging Waste

Packaging waste including separately collected commercial packaging waste is accepted at the facility. Cardboard, paper and plastics are collected from commercial and industrial (C&I) premises such as supermarkets. Any mixed packaging waste is segregated using the C&I waste picking line. Cardboard and paper are baled using a Boa Mill-sized baler. The baling process involves placing the cardboard onto a conveyor, which feeds the baling press.

Paper and Cardboard generally arrive on-site in either pre-segregated or mixed waste loads.

Metals (EWC code 20 01 40) are segregated from incoming waste and transferred to metal recyclers.

Wood waste (EWC code 20 01 38) is segregated from incoming waste and transferred to timber recyclers.

4.3 Processes

All waste streams are processed using the same equipment. Prior to processing the waste is emptied into one of three main areas dependent upon the source of the waste.

Area	Waste
1	Construction and demolition type wastes including household and other facilities clearance wastes; consists predominantly of soils, rubble, metal, timber and cardboard
2	Commercial waste and similar; consisting predominantly of dry recyclable materials, e.g. cardboard, plastics, etc
3	Waste inspection area; allows for examination of waste load prior to processing; allows for the removal of potentially difficult (e.g. handling) materials

4.4 Quantities and Composition of Waste

The facility is licensed to handle 95,000 tonnes of waste per annum. The quantities of material handled at the facility for 2008 are presented below.

Ref	WASTE TYPE	ACCEPTED	DISPATCHED	DESTINATION
02 03 04	Meal Grain Material	28		
13 05 03	Interceptor Waste		31	Rilta
15 01 01	Cardboard	1331	1243	Highlander International
			110	Irish Packaging and Recycling
			198	F.B.I
15 01 01	Paper	243	87	Highlander International
			44	Irish Packaging and Recycling
15 01 02	Plastic	194	245	Leinster Environmental
			34	Retech Processing Ltd
15 01 03	Pallets & Woodchip	561	69	Conroy Recycling
			452	Greenstar, Knockharley Landfill
			13	Irish Metal Refineries
			35	Lagan Cement
			15	Orchard Express Freight
			1854	Ormonde Organics
			23	Servisair
			100	Urban Forest
15 01 06	Mixed Cardboard & Plastic	34		
15 01 07	Glass	145	44	Glassco
16 01 03	Tyres	6	47	Crumb Rubber
16 06 01	Batteries		5	Returnbatt
17 01 07	Rubble		4051	Balleally Landfill
			120	Roadstone Recycling
17 01 07	Small Stone		1978	Balleally Landfill
17 02 01	Timber	1547	1128	Conroy Recycling
			697	Urban Forest
			18	Veolia

17 04 01	Copper	1	19	Irish Metal Refineries
17 04 02	Aluminium	1	7	A1 Metals
			47	Irish Metal Refineries
17 04 05	Steel	171	469	A1 Metals
			3	Irish Metal Refineries
			781	Multimetals Ltd.
			52	Wilton Waste
17 04 11	Cable	1	5	Irish Metal Refineries
17 06 05	Asbestos		1	Rilta
17 08 02	Plasterboard	9	148	Gypsum Recycling Ireland
17 09 04	Construction Waste	13676		
19 12 12	Commercial Fines		2388	AES Navan
			51	Milltown Composting
19 12 12	C+D Fines		5671	Balleally Landfill
			87	Greenstar, Knockharley Landfill
19 12 12	RDF		239	Fiber Fuels UK
			158	SRM Ltd.(TFS no.IE 07 0494)
19 12 12	Residual Waste		5714	Balleally Landfill
			851	Board na Mona Carbury
			381	Greenstar KTK
			6884	Greenstar, Knockharley Landfill
20 01 08	Food Waste	320	1357	AES Navan
			66	Board Na Mona Kilberry
20 02 01	Green Waste	649	372	Milltown Composting
20 03 01	Brown Bin Waste	1345		
20 03 01	Commercial Waste	20111	232	Balleally Landfill
			144	Veolia
20 03 01	Domestic Waste	1351		
20 03 04	Road Sweeper Waste	17		
	TOTAL	41741	38768	

As specified in the waste licence, only those categories and quantities listed in Schedule A.2 shall be lawfully accepted at the facility.

5.0 Environmental Monitoring

Monitoring of surface water and noise was carried out in acceptance with W0222-01 during 2008. In accordance to the licence a visual inspection must be carried out daily; COD, pH, Conductivity and Chloride must be analysed weekly; Total ammonia and Total nitrogen every quarter and metals and coliforms once per year.

5.1 Sampling locations

Sample Point	Location
SW1	Ballough Stream, upstream of site (southeast margin)
SW2	Ballough Stream, downstream of site (southeast margin)
SW3	At discharge point of the Klargester Interceptor to the Ballough Stream.

The sampling points were agreed with the EPA.

5.2 Methodology

Surface water sampling was carried out by full submergence of the designated sample container into the surface water body. During submergence every effort was made to keep containers steady as to prevent sediment disturbance.

5.3 Results

5.3.1 Weekly results:

COD, pH, Conductivity and Chloride were analysed weekly during 2008. Waste Licence COD emission limits were exceeded in eight occasions ranging from 34 mg/l to 1852 mg/l. All other parameters were within the specified limits at all times.

In November 2008 Greenclean Waste Management Ltd received a letter from the EPA including Suspended Solids and Oils, Fats and Grease in the weekly parameters. From 11th November 2008 those parameters were analyzed along with the previous ones without any limits exceedence.

5.3.2 Quarterly results

Total Ammonia and Total Nitrogen were analysed quarterly during 2008. There are no specified emissions limits in the Waste Licence for those parameters.

Parameter	Units	Q1	Q2	Q3	Q4
Total Ammonia	mg/l as N	0.90	4.00	0.30	0.16
Total Nitrogen	mg/l as N	3.00	24.00	7.00	4.48

5.3.3 Annual results:

The following parameters are analyzed annually at three different locations. None of the parameters analyzed exceeded the Waste Licence limits:

Parameter	Units	Licence Limits	Monitoring point		
			SW1	SW2	SW3
Ammonical Nitrogen	mg/l		<0.02	<0.02	0.03
Arsenic	mg/l		0.002	0.002	0.001
BOD	mg/l		<2	<2	
Boron	mg/l		0.024	0.024	0.069
Cadmium	mg/l		<0.0004	<0.0004	<0.0004
Chromium	mg/l		0.008	0.01	0.003
COD	mg/l	30mg/l	<15	<15	<15
Conductivity	mS/cm		0.65	0.65	0.82
Disolved Oxygen	mg/l		10	11.1	8.5
Faecal Coliforms	cfu/100ml		3200	10000	130000
Kjeldahl Nitrogen	mg/l				7
Lead	mg/l		<0.001	<0.001	<0.001
Mercury	mg/l		<0.00005	<0.00005	<0.00005
Nickel	mg/l		0.003	0.002	0.004
pH	pH units	6 to 9	7.56	7.91	7.38
Selenium	mg/l		0.003	0.003	0.002
Total Amonia	mg/l				0.3
Total Coliforms	cfu/100ml		30000	30000	580000
Zinc	mg/l		<0.001	0.006	0.009

6.0 Noise Monitoring Report Summary

A daytime noise survey of the premises was carried out by Euro environmental services on the 5th December 2008. Four monitoring points were located for the day-time survey.

Noise measurements were taken at four locations (N1 to N4) in December 2008 for the purposes of licence compliance. In accordance with Waste Licence W0222-01, noise monitoring at the site is only required during daytime hours as there are no activities on site during night time hours.

6.1 Site Location and Surrounding Land Uses

The 1.12ha site is located at Blake's Cross near Lusk directly on the N1 (R129) road and adjacent to the M1. The immediate surrounding landuse is a mix of agricultural land, light industrial developments and an Eastern Health Board residential unit. The Ballough stream, a tributary of the Ballyboghil stream forms the east boundary of the site.



6.2 Measurements of Surveying

The following measurements were carried out at each monitoring location:

- Day Time Broadband measurements $L(A)_{eq}$, $L(A)_{10}$, $L(A)_{90}$, $L(A)_{50}$, $L(A)_1$ and $L(A)_{99}$ over a 30-minute period.
- Day Time 1:3 Octave measurements over a 30-minute period

6.3 Description of Measurement Parameters

L_{eq} Values: $L_{eq}(t)$ values represent the continuous equivalent sound level over a specified time (t). This value expresses the average levels over time and is a linear integral.

L_{90} and L_{10} Values: The L_{90} and L_{10} are statistical values which represent the sound levels exceeded for a percentage of the measurement time. L_{10} indicates the sound levels exceeded for the 10% of the monitoring period while L_{90} indicates the sound levels exceeded for 90% of the monitoring period. The L_{90} value is a good indication of background noise levels.

Tonal and Impulsive Characteristics: Tonal noise is characterised in accordance with ISO 1996-2, which indicates that a noise source being tonal at a particular frequency is either clearly audible or exceeds the level of the adjacent bands by 5dB or more. An impulsive noise is of short duration (typically less than 1 second), it is brief and abrupt, and its startling effect causes greater annoyance than would be expected from a simple measurement of sound pressure level. For example an instantaneous bang/thud that may be associated with pile driving, hammering etc.

The EPA recommend that ideally, on sites of industrial nature or similar, if the total noise level from all sources is taken into account, the noise level at sensitive locations should be kept below an $L(A)_{eq}$ value of 55dB(A) by daytime (0800 to 2200) and a value of 45 dB(A) by night-time (2200 to 0800).

6.4 Methodology

The noise survey was carried out in accordance with ISO 1996/1/2/3 - Acoustics - Description and Measurement of Environmental Noise.

Reference was also made to the guidance document issued by the EPA entitled "Environmental Noise Survey Guidance Document" EPA 2003. Broadband measurements were analysed for 30-minute intervals. Daytime measurement range was set at 30-90dB. 1:3 Octave measurements were conducted for a 30-minute period.

6.5 Equipment

The monitoring equipment used during monitoring was a Bruel & Kjaer Hand-held Analyser Type 2250, instrument No. 2157949 integrating sound pressure level meter, with selective 1:1 or 1:3 octave band measurements.

The meter was fixed to a tripod 1.5 meters above the ground level and and at least 3.5m from any potential noise reflecting surfaces. The microphone was protected using a windshield. The microphone cartridge type was MK: 224. All monitoring was conducted at least 3m away from reflective surfaces.

6.6 Calibration

Calibration was carried out on site using an acoustic calibrator at 94dB. The meter was calibrated before and after the monitoring events.

6.7 Noise Survey Results

Monitoring Point	Date / Time	Sampling Interval (Minutes)	L(A)eq	L(A)10	L(A)90	Comments
N1	05/12/2008 10:52	30	65	66	59	Main source of noise was due to a dumper in operation, noise from objects being dropped within the recycling building, banging noise of metal, reverse beeping sirens, cranes in operation, trailer rattling while transported, vehicles entering and exiting site, lorry idling and a telescopic forklift in operation. Interference noises included traffic movements on R129 and plane flying overhead.
N2	05/12/2008 10:20	30	74	78	62	Little/no noise audible from recycling building due to significant noise from the road. Noise from lorries idling, vehicles entering and exiting site, reverse beeping sirens, dumper in operation, hydraulic engine noise from a lorry loading a container, people talking, cranes in operation, noise of chains banging against a container. Interference noises included constant traffic movements on R129 road and plane flying overhead.
N3	05/12/2008 11:56	30	63	66	58	No activity visible from this monitoring location. Main source of noise arising from cranes in operation, engine noise, metals being moved/dropped within the recycling building, lorry idling and loading a metal container and reverse beeping sirens. Interference noises included wind blowing, traffic on adjacent road and planes flying overhead.
N4	05/12/08 11:25	30	63	67	53	No activity visible from this monitoring location. Main source of noise from the site was reverse beeping sirens, metals being moved/dropped within the recycling building, engine noise, banging noise, a 360 excavator in operation and a car horn sounding. Interference noises included wind blowing in the trees and planes flying overhead.

N1: Located on hard ground on the southern boundary of the site, besides the south-east corner of the reception building and 40-50 metres away from the recycling building.

N2: Located on hard ground on the western boundary of the site, besides the smoking area. This point was 6 metres away from main gate, 5 metres away from R129 road and 30 metres away from the recycling building.

N3: Located on hard ground on the northern boundary of the site, besides a line of trees and 5 metres away from the recycling building.

N4: Located on hard ground on the eastern boundary of the site, besides the Ballough Stream and 5 metres away from the recycling building.



6.8 Weather Conditions

Weather conditions were generally sunny, calm and dry with wind speeds not exceeding 5 m/s.

6.9 Interference

Constant traffic movements on R129 road contributed to elevated noise levels at monitoring locations N1, N2 and partially at N3. Planes were recorded flying overhead during monitoring due to the close proximity to Dublin Airport.

6.10 Summary

Daytime noise levels at all monitoring locations exceeded the recommended day time noise limit of 55 dB(A) and therefore exceed the limits outlined in Schedule B.3 of Waste Licence W0222-1. The main sources of noise reported were traffic passing on the near by R129, HGVs entering and leaving the site and machinery in operation within the recycling building.

Tonal components were detected at a frequency of 16 Hz at two of the monitoring locations. This is in the low frequency range and could be attributable to the operation of diesel engines from plant at the facility.

7.0 Resources and Energy Consumption

The following table summarises the volumes of fuel Gas Oil and electricity purchased and utilised at Green Clean Waste Management Facilities last year.

	2008	Variation regard to previous year
Electricity (KWh)	210,525	-2.1%
Diesel (l)	422,787	15.4%
Gas Oil (l)	99,763	30.3%

8.0 Development Works During the year 2008

Greenclean carried out several development works during 2008. These development works consisted in the installation of wheel wash adjacent to weighbridge area, in order to avoid contamination on the surrounding area and the upgrade of Yard surface to the east side of the Facility.

9.0 Environmental Management System

The Environmental Management System was developed in 2007. The list below details the procedures developed which are now in use and will continue to be followed on site until site closure. The Environmental Management System (EMS) was implemented in 2007. Previously there had been no EMS in place at the facility. The EMS will be reviewed and updated as necessary in 2009.

9.1 Procedures included in the EMS:

- Control of Operating Procedures Manual
- Amendments to Operating Procedures Manual
- Control of Visitors/Contractors
- Emergency Response Procedure
- Third Party Enquiry
- Customer Enquiry
- Health & Safety
- Management of Waste Inputs
- Facility Inspection
- Quarantine
- Load Receipt and Acceptance Route
- Raw Materials/Resource Control and Usage
- Load Sample and Test Schedule
- Handling Hazardous or Difficult Wastes
- Load Rejection
- Vehicle Movements
- Processing of Non-Hazardous Waste
- Storage and Transfer of Non-Hazardous Waste and Recyclables
- Site Closure
- Legal and Other Requirements
- Inspection of Waste
- Recovery of Recyclables
- Emissions Management

Permit to Work
 Inspection and Maintenance
 Management Review
 Environmental Monitoring and Reporting
 Aspects, Objectives and Targets
 Non-Conformance and Corrective Action
 Waste Management facility/Collector Approval
 Complaints Handling
 Nuisance Management
 Incident Recording and Reporting
 Staff Awareness and Training
 Communications
 Site Audit
 Purchasing
 Capital Purchasing
 Record Keeping

9.2 New procedures 2008

Gypsum Waste Procedure (April 2008)
 Wood Processing Procedure (May 2008)

10.0 Environmental Objectives and Targets

10.1 Objectives and Targets for 2008

Objective	Target	Responsibility	Timescale
<i>Training & Awareness</i>	Training was carried out on the environmental management system with relevant staff throughout the course of the year. All training records are reviewed on a monthly basis and are updated as needed	V Coleman	Ongoing
<i>Increase Recycling Rates</i>	An overall recycling rate target of 55% was set for 2008. This target was reached and exceeded with a recycling rate of 66%.	V Coleman	Dec 2008
<i>Emergency Procedures Test</i>	We carried out a fire drill for the facility in September of 2008. A spill drill was also carried out in September 2008 in accordance with the procedure set out in the Environmental Management System	V Coleman	Annual
<i>Energy Efficiency</i>	Monthly testing of compressors and air pipes was carried out by our maintenance department. Repairs were made if necessary to ensure efficient working of all compressed air equipment	V Coleman	Monthly
<i>Improve Monitoring & Reporting at the site</i>	Monitoring has improved at the site in 2008 due to the training conducted to staff implementation of the Environmental Management System	V Coleman	As Required
<i>Maintain and improve the EMS</i>	An Environmental review is on the agenda for all monthly management meetings were environmental and operational issues at the facility are reported and reviewed.	V Coleman	Ongoing

10.2 Objectives and Targets for 2009

Objective	Target	Responsibility	Timescale
<i>Training and Awareness</i>	Complete and maintain all training records as required by the EMS.	V Coleman	Ongoing
<i>To Reduce resource consumption</i>	New equipment and infrastructure to be chosen and designed with resource consumption in mind.	V Coleman	Ongoing
<i>Improve Recycling Rate</i>	To reassess the composition of the material received and to explore all possibilities of increased recovery	V Coleman	To be reviewed quarterly
<i>To Improve on all environmental procedures</i>	To gain ISO 14001 Environmental Quality Assurance Certification	P Farrell	To be completed by June 2009
<i>Eliminate/reduce all exceedances of licence limits.</i>	To review and improve on all nuisance controls and general housekeeping	V Coleman	To be reviewed quarterly
<i>Improve Waste Acceptance Procedures</i>	To communicate with customers items which are not acceptable at the facility and ensure that all staff are familiar with acceptable waste types.	D Roberts and V Coleman	Programme to be running by the end of quarter 1

11.0 Incidents and Complaints

There were several incidences of exceedances in COD limits, above the permitted thresholds set out in W0222-01. These were reported to the EPA as required.

In total COD limits were exceeded in eight occasions as a result of heavy rains that washed mud down drains. Corrective actions taken consisted in Interceptor emptying and a strict regime of yard surface and drain cleaning.

12.0 Financial Provision

Greenclean insurance policy provides an indemnity up to €13,000,000 for Employers Liability and €6,500,000 for Public/Products Liability. In terms of environmental pollution/contamination the indemnity applies "to damage to any buildings or other structures or of water or land or atmosphere caused by pollution or contamination. The policy covers pollution caused by a "sudden, identifiable, unintended and unexpected event and not gradual pollution". This cover will be in excess of any environmental liability that may arise due to such incidents.

13.0 Programme for Public Information

All information and correspondence supplied to the EPA (other than commercially sensitive information) and received from the EPA, is available to the public to view at the facility. This includes a copy of the waste licence, all reports, monitoring results and interpretations required by the licence and other correspondence between the EPA and the facility. Any member of the public may view the information between the hours of 10.00 and 16.00 and by appointment only, at the facility.

Aadil Khan
Environmental Technical Manager

Victor Olmos
Environmental Technician

24th March 2009