



Greenclean Waste Management Ltd
Licence No. W0222-01

Annual Environmental Report
2009

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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

Operations Manager: Vincent Coleman

Environmental Co-ordinator: Paula Farrell

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2.0 Overview

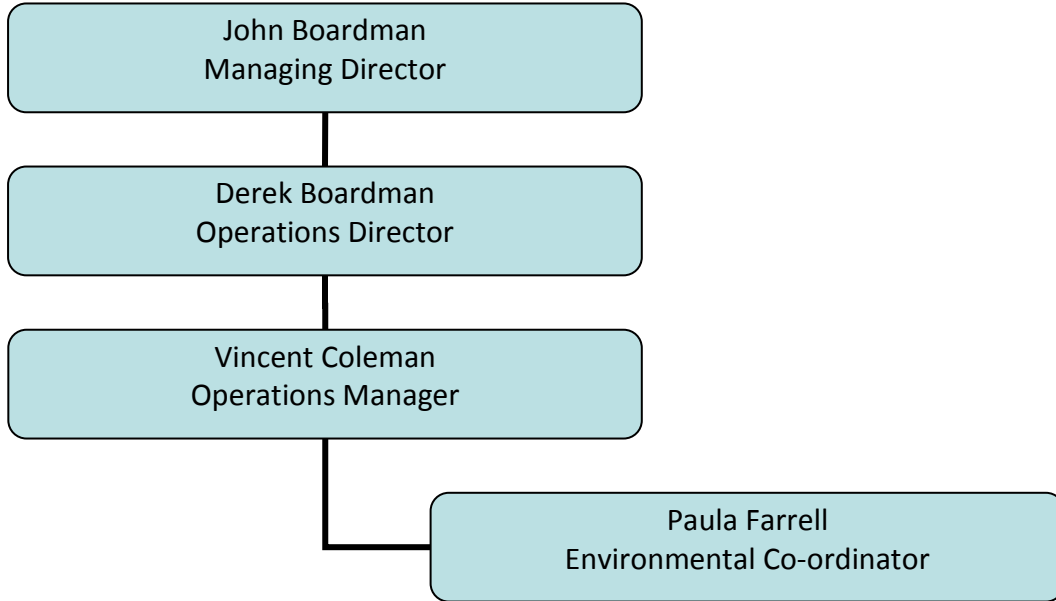
Greenclean Waste Management Ltd (Greenclean) commissioned EURO Environmental services and Alcontrol Laboratories to carry out environmental monitoring and associated reporting at Greenclean Waste Management Ltd, Waste Licence 0222-01, situated at Blake's Cross, Lusk, County Dublin during 2009.

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 2009. 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 41 years in waste management industry and 20 years as managing director of his own firm.	Derek Boardman
Derek Boardman	Operations Director	Directs all company operations	20 years in waste management.	Vincent Coleman
Vincent Coleman	Operations Manager	General Facility Management, Staffing, Equipment Maintenance	10 years in waste management. Fetac Level 6 – Waste Management.	Paula Farrell
Paula Farrell	Environmental Co-ordinator	Environmental Management, Monitoring, Reporting & Record Keeping Quality Management, Licence & Permit Compliance.	11 years in waste management. Fetac Level 6 – Waste Management. DGSA, Qualified. Completed intensive waste law course in Trinity College and Quality system auditing course.	Stephen Deegan

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 2009 are presented below.

Ref	WASTE TYPE	ACCEPTED	DISPATCHED	DESTINATION
020304	Meal Grain Material	37.35		
150101	Cardboard Packaging	1938.10	1,769.32	Anthon B Nilsen UK (Broker)
			440.90	Hannay Waste, Bannow Road, Cabra, Dublin 7
			322.26	Highlander International Recycling (Broker)
			1,091.17	Irish Packaging & Recycling, Ballymount, Walkinstown, Dublin 24 WPR 021/2
			44.71	Leinster Environmental Haggardstown, Dundalk, Co. Louth WP2004/30
150102	Plastic Packaging	107.05	10.92	Irish Packaging & Recycling, Ballymount, Walkinstown, Dublin 24 WPR 021/2
			183.62	Leinster Environmental Haggardstown, Dundalk, Co. Louth WP2004/30
150103	Wood Packaging	476.29	263.88	Conroy Recycling, Mullingar, Co. Westmeath WP 152-2006
			953.24	Greenstar, Knockharley, Landfill W146-1
			54.22	KTK Landfill, Kilcullen, Co. Kildare
			416.62	Milltown Compositing Systems, Fethard, Co. Tipperary WP01902
			2,063.18	Ormond Organics, Kilowen, Portlaw, Co. Wasterford (Section 51 exemption)
150106	Mixed Packaging	21.91		
150107	Glass Packaging	41.54		
170107	Rubble	90.60	2,036.09	Ballealy Lanfill, Lusk, Co. Dublin W009/02
			186.58	Bord Na Mona, Drehid Facility, Carbury, Co. Kildare W201-1
170201	Timber	1529.39	39.40	Greenstar, Knockharley, Landfill W146-1
			18.80	Ormond Organics,

				Kilowen, Portlaw, Co. Wasterford (Section 51 exemption)
170405	Steel	231.34		
170504	Clay	103.34		
170904	Construction Waste	8073.81		
200108	Food Waste	244.36		
200201	Green Waste	1395.70	437.04	Bord Na Mona, Drehid Facility, Carbury, Co. Kildare W201-1
			281.22	Milltown Compositing Systems, Fethard, Co. Tipperary WP01902
200301	Commercial Waste	11639.61	117.43	Ballealy Landfill, Lusk, Co. Dublin W009/2
200301	Domestic Waste	696.32		
170802	Plasterboard		95.40	Sandyhills Environmental Services, St Margarets, Co, Dublin WPT 112.
191212	Fines		186.76	Greenstar, Knockharley, Landfill W146-1
			154.82	Milltown Compositing Systems, Fethard, Co. Tipperary WP01902
			8,238.28	Ballealy Landfill, Lusk, Co. Dublin W009/02
			1,301.70	Bord Na Mona, Drehid Facility, Carbury, Co. Kildare W201-1
			215.32	Greenstar, Knockharley, Landfill W146-1

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 2009. 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 placing the designated sample container directly at the discharge points. 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 2009.

Waste Licence COD emission limits were exceeded on nine occasions ranging from 33 mg/l to 339 mg/l. All other parameters were within the specified limits at all times.

Waste Licence Suspended Solid limits were also exceeded on nine occasions ranging from 31 mg/l to 458 mg/l

5.3.2 Quarterly results

Total Ammonia and Total Nitrogen were analysed quarterly during 2009. 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	0.03	1.65	0.047	0.16
Total Nitrogen	mg/l as N	4.28	16.14	4.43	4.14

THP, BTEX and MTBE are not specified for quarterly monitoring as part of licence document with the EPA requested that these be tested during the year. Please see below results.

SW 1:

Parameter	Units	Q1	Q2
TPH	Ug/L	17.42	23.05
BTEX	Ug/L	<1	<1
MTBE	Ug/L	<1	<1

SW 2:

Parameter	Units	Q1	Q2
TPH	Ug/L	36.87	17.81
BTEX	Ug/L	<1	<1
MTBE	Ug/L	<1	<1

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	30 mg/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	0.005	0.004
pH	pH units	6 to 9	7.56	7.91	7.38
Selenium	mg/l		0.003	0.003	0.002
Total Ammonia	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

6.1 Introduction

Vincent Coleman of Green Clean Waste Management commissioned Euro environmental services to carry out a day time noise survey at 4 noise monitoring locations around the Green Clean Waste Management premises, Lusk, Co Dublin.

6.2 Duration and Measurements of Surveying

The daytime broadband noise survey was carried out between 12:42 and 14:46 on Friday, 6th March 2009.

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.

6.4 Weather Conditions

Weather conditions were cold and overcast for the duration of the day time survey, with a slight drizzle for short periods during the monitoring.

6.5 Location of Monitoring Points

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.

6.6 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.

6.7 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 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.

6.8 Calibration

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

6.9 Day Time Environmental Noise Results – Broadband Measurements

Monitoring Point	Date / Time	Sampling Interval (Minutes)	L(A)eq	L(A)10	L(A)90	Comments
N1	06/03/2009 13:14	30	63	64	50	Main source of noise was due to lorries driving along site and idling at weight bridge, air being released from machinery within the recycling building, engine noise coming from recycling building, workers talking, trailer making noise while transported, reverse beeping siren, telescopic forklift in operation, hammering noise while retractile cover engine operating. Interference noises included traffic movements on R129 and plane flying overhead.
N2	06/03/2009 12:42	30	66	70	59	Little/no noise audible from recycling building due to significant noise from the road. Noise from vehicles entering and exiting site, lorries idling at weight bridge. Interference noises included constant traffic movements on R129 road, excavator and lorry carrying out road works very close to monitoring location and plane flying overhead.
N3	06/03/2009 14:16	30	65	68	57	No activity visible from this monitoring location. Main source of noise arising from cranes in operation, metals being moved and dropped within the recycling building, engine noise. Interference noises included wind blowing, traffic on adjacent road and planes flying overhead.
N4	06/03/2009 13:45	30	66	70	51	No activity visible from this monitoring location. Main source of noise from the site was metals being moved and dropped within the recycling building, engine noise, reverse beeping sirens and a waste lorry in operation. Interference noises included wind blowing in the trees and planes flying overhead.

6.10 1/3 Octave Measurements

A tonal component was detected at monitoring location N3 at frequency of 16 Hz (73.1 dB). The tonal component may be attributable to diesel engines of plant operating on the site.

A tonal component was detected at monitoring location N4 at a frequency of 16 Hz (73.7 dB). The tonal component may be attributable to diesel engines of plant operating on the site.

6.11 Interference

Constant traffic movements and road works 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 of the site to Dublin Airport.

6.12 Conclusions

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.

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 during 2009.

	2008	2009
<i>Electricity (KWh)</i>	210,525	252,479
<i>Diesel (l)</i>	422,787	270, 072
<i>Gas Oil (l)</i>	99,763	55,627

8.0 Development Works During the year 2009

Greenclean carried out an upgrade of Yard surface to the east side of the Facility. The upgrade also included re-surfacing worn areas of the existing surface within the waste processing sheds. Concrete lips were also constructed on each of the doors of the waste processing sheds as a further lechate containment measure.

A fully certified and bonded chemical storage container was introduced to contain any hazardous materials that may be found in skips entering 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 was reviewed and updated as necessary during 2009. Additions made have been detailed in section 9.2 below.

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
- 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
Gypsum Waste Procedure
Wood Processing Procedure

9.2 New procedures 2009

Inspection procedure and non conforming material
Hazard Identification Procedures for staff and drivers
Sampling procedure

10.0 Environmental Objectives and Targets

10.1 Objectives and Targets for 2009

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. Training was also carried out with drivers and operational staff of identifying non conforming material and hazardous and potentially hazardous waste streams. Company induction training was also reviewed and amended to include environmental aspects and licence compliance.	V Coleman / Paula Farrell	Ongoing
<i>To Reduce resource consumption</i>	All new equipment and infrastructure was assessed with a particular view to resource consumption. A significant reduction was achieved in both diesel and gas oil consumption.	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. A pre audit has taken place by a Certification company and a certification audit is scheduled for April 2010.	P Farrell	Certification Audit has been scheduled for April 2010
<i>Eliminate/reduce all exceedances of licence limits.</i>	To review and improve on all nuisance controls and general housekeeping. This was closely monitored by daily visual inspections and weekly written reports.	V Coleman	Ongoing
<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. This was achieved through customer site meetings and the introduction of a new waste profiling form for new customers.	D Roberts/Paula Farrell	In Place/Ongoing

10.2 Objectives and Targets for 2010

Objective	Target	Responsibility	Timescale
<i>Training & Awareness</i>	Constant review and assessment of employee training requirements	V Coleman / Paula Farrell	Ongoing
<i>To Reduce resource consumption</i>	As there was a slight increase in energy consumption in 2009 this is to be monitored on a monthly basis throughout 2010 and reduced through staff training and awareness.	V Coleman	Ongoing
<i>Improve Recycling Rate</i>	Constant review of composition of the material received and to explore all possibilities of increased recovery	V Coleman/ Paula Farrell	To be reviewed quarterly
<i>To Improve on all environmental procedures</i>	To gain ISO 14001 Environmental Quality Assurance Certification. A pre audit has taken place by a Certification company and a certification audit is scheduled for April 2010.	P Farrell	Certification Audit has been scheduled for April 2010
<i>Eliminate/reduce all exceedances of licence limits.</i>	To continuously review, monitor and improve housekeeping issues to ensure that	V Coleman	Ongoing
<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. This was achieved through customer site meetings and the introduction of a new waste profiling form for new customers.	D Roberts/Paula Farrell	In Place/Ongoing

11.0 Incidents and Complaints

There were several incidences of exceedances in COD limits and suspended solids, above the permitted thresholds set out in W0222-01. These were reported to the EPA as required. In total COD limits were exceeded one nine 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.

10.0 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 by appointment only.